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THE GREAT WHITE NORTH

By Nicole Axworthy

ENGINEERING DIMENSIONS

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Northern Ontario—the land “up north” from our offices in Toronto, Ontario—is somewhat of an enigma. Although it constitutes 88 per cent of the

land mass of the province—about the same size of France and Germany combined—the north is home to only 6 per cent of the population. The gorgeous, lush landscape and fresh air is a good reason to live there, but the region is also characterized by extreme weather and rocky terrain (thanks to the Canadian Shield), posing unique challenges for engineers and government to implement the infrastructure for communities to thrive.

This issue, we delve into the unspoken problems of one particular place in northwestern Ontario, near the Manitoba border: Pikangikum. The remote First Nations community is in desperate need of infrastructure spending; until recently, it has not even had access to Ontario's power grid or to clean drinking water. In “Pikangikum: A northern Ontario First Nations community in transition” (p. 35), Associate Editor Adam Sidsworth illustrates the efforts of three engineers who, after learning about the community's tragic story, felt compelled to assist, as much as they could, in implementing reliable and sustainable development.

We can't talk about northern Ontario without reporting on a resource that connects us all, no mat-

ter where we live: the internet. In “The digital divide” (p. 41), Associate Editor Marika Bigongiari explains the divide that exists between those in urban centres to the south who have access to internet technology, and those in remote northern towns who do not. But, there are various stumbling blocks in implementing network infrastructure within the vast, rugged landscape of the north, which require the ingenuity of engineers who are doing the planning.

I'd also like to point out the 2019 Ontario Professional Engineers Awards call for nominations on page 22. These prestigious awards showcase Ontario professional engineers who have contributed to their profession and community and, notably, a team of engineers that has executed an outstanding project or achievement. If you know an engineer or engineering team whom you think is deserving of recognition, you can find the nomination forms at www.peo.on.ca, or email awards@peo.on.ca. [e](#)

2019 EDITORIAL CALENDAR

Below are the themes we will be featuring in upcoming issues of *Engineering Dimensions*. If you can lend your expertise or opinions on any of these topics, don't hesitate to get in touch.

January/February: Infrastructure

March/April: Waste

May/June: Acoustical Engineering

July/August: Illegal Practice

September/October: Entrepreneurship

November/December: Innovation

THIS ISSUE Ontario's north is a vast, sparsely populated land mass with unique challenges that often go unnoticed by people living in southern Ontario, where the population density rivals those of many European countries. In this issue we explore the challenges engineers face delivering equitable internet and broadband services to northern Ontario. And in a haunting tale of despair and tragedy, we profile a First Nations community in Ontario's far north as they attempt to improve their community's infrastructure with the help of three engineers.



CHARTING A COURSE THROUGH STORMY WATERS

By David Brown, P.Eng., BDS, C.E.T., IntPE, MCSCE



I won't sugarcoat it: With a projected \$2.5 million deficit in 2019, increased scrutiny from government and the public and conflicting priorities, PEO is facing troubled waters. But these challenges also present an opportunity to make some much-needed course corrections to put us back on track to focus on our core mandate of regulating the engineering profession.

THE CHALLENGES: FINANCES, PUBLIC SCRUTINY, GOVERNANCE

Let's start with the bad news: PEO is facing a potential \$2.5 million deficit for the 2019 budget (this figure is subject to revisions during Council's November 16 meeting)—a financial position I've yet to see during my time with the association. But it's easy to see how we got here. Our annual P.Eng. licence fee of \$220 hasn't increased in more than 10 years, meaning the fee hasn't even kept pace with the inflation rate. At the same time, PEO Council continues to maintain and add new programs, which add costs to our budget. I'm an engineer, but I'm also a business person, and it's very clear that you cannot continue charging the same amount for a service while costs increase. Something must give.

In my last two columns, I've discussed how professional regulators both in Canada and globally are coming under increased scrutiny by governments and the public. This was underscored recently at a Council on Licensure, Enforcement and Regulation (CLEAR) governance workshop I attended with President-elect Nancy Hill, P.Eng., LLB, FEC. The facilitators discussed the growing public skepticism of self-regulators' ability (and willingness) to police their own and how governments in many jurisdictions are increasing oversight—and sometimes taking over regulation outright—of professional regulators. In the United Kingdom, all health regulators are annually audited by the Professional Standards Authority (more on them later); in Ireland, all health regulators must have a majority of public members on their boards; and in Australia, complaints and discipline processes are now independent of some regulators.

This creeping government oversight is also coming to Canada—and the engineering profession. This year, the British Columbia Ministry of Environment and Climate Change released a report recommending the government establish an independent Office of Professional Regulation and Oversight that would oversee professions involved in the province's natural resource sector, including Engineers and Geoscientists BC (see *Engineering Dimensions*, September/October 2018, p. 10). The body would develop and dictate governance best practices related to investigations and codes of conduct, incompetent practice and sanctions; and standardize governance elements including the authority to regulate firms, council authority to pass certain bylaws and continuing

professional development. The legislation would also specify new rules for council and committee composition, with the oversight body vetting and appointing council and committee members, potentially eliminating council elections.

And PEO is not immune, as the Office of the Fairness Commissioner recently announced that it would soon be auditing Ontario regulators looking for potential barriers to entry into professions and issuing compliance orders to correct identified barriers.

Finally, PEO needs a culture shift between Council and staff. Essentially, there needs to be clear division between "church and state" and strong leadership on both sides to ensure Council is focused on the high-level policy work of governing the profession while providing clear direction to staff. Effective boards focus exclusively on strategy and policy, leaving operations to management and staff. PEO needs a strong registrar who can proactively protect and enhance the culture of the staff while bringing relevant, timely information to Council that allows us to focus on our board work and fiduciary responsibilities. To that end, our search for a permanent registrar is ongoing.

THE OPPORTUNITIES: REGULATORY REVIEW AND RENEWAL

Now the good news: In September, PEO Council passed a motion to commission a regulatory performance review by the aforementioned Professional Standards Authority. In my last column ("The value in regulatory performance reviews," *Engineering Dimensions*, September/October 2018, p. 6), I examined the results of a similar review undertaken by the BC engineering regulator and how the audit helped them to bridge regulatory gaps to make them more effective as a regulator.

Given our challenges, this is exactly what PEO needs—an unbiased evaluation of our performance. We need an honest appraisal of our effectiveness in carrying out our core regulatory activities and the costs required to ensure we perform them well. This may result in a serious review of our annual P.Eng. licence fees to determine if we can adequately support our operations at the current rate or if an increase is required. Such an evaluation will also help point out programs that don't necessarily align with our core mandate and will help guide us through the tough job of trimming activities—and costs—to get us back to strong financial health.

Ultimately, an independent review will provide us with the foundation required to develop a rational approach and business plan to get our house in order. Only then can we devote ourselves solely to regulating and advancing the engineering profession to protect the public interest. **e**

INSTITUTE FOR CANADIAN CITIZENSHIP RELEASES REPORT ON BARRIERS FACED BY INTERNATIONAL ENGINEERING GRADUATES

By Marika Bigongiari

In September, the Institute for Canadian Citizenship (ICC) released a report on the barriers faced by international engineering graduates (IEGs). The ICC is a national charity co-founded by former governor general Adrienne Clarkson that delivers programs and special projects and publishes reports on citizenship and inclusion. Its new report, *Closed Shops: Making Canada's Engineering Profession More Inclusive of International Engineers*, was unveiled at an event at the Art Gallery of Ontario in Toronto, Ontario, during which PEO Acting Deputy Registrar of Licensing and Registration Moody Farag, P.Eng., participated in a panel discussion. PEO Interim Registrar Johnny Zuccon, P.Eng., FEC, also attended on behalf of PEO. Other panelists at the event included report author Lauren Heuser, fellow of the Centre for International Governance Innovation; Katrina de Asis, EIT, an IEG who recently immigrated from the Philippines; Aarthi Vig, program manager at the Ontario Society of Professional Engineers (OSPE); and host Scott Young, director of ideas and insights at the Institute for Canadian Citizenship.

The report examines Canada's immigration system and reviews the licensure process, with an aim to identify ways IEGs might face unique barriers, and makes recommendations for change. Its recommendations are aimed at Engineers Canada, provincial engineering regulators, immigration officials, policy-makers, fairness commissioners, employers, universities, settlement support agencies and IEGs. In its examination of licensure and employment processes, the report's findings suggest a systemic bias and suggests this is due to an overly complex and misunderstood system that is not consistent from province to province. Finally, it suggests streamlining processes and reducing information gaps.

The report made the following observations and recommendations:



Panelists discuss potential barriers faced by international engineering graduates. From left to right: Moody Farag, P.Eng., Katrina de Asis, EIT, Aarthi Vig and Scott Young. Photo: Institute for Canadian Citizenship/Alyssa Faoro

REPORT OBSERVATIONS

- IEGs face higher unemployment rates and persistent wage gaps;
- IEGs face systemic barriers that are the result of disconnects between various stakeholders—government, regulators, employers and other agencies—that have a hand in shaping their outcomes as opposed to problems endemic to any one system;
- The engineering profession should not relax its standards; however, standards should be equal for all, regardless of where applicants received their education;
- Most IEGs do not obtain a licence when they come to Canada, quoting Engineers Canada's *Monitoring Report on the Educational Credential Assessment Project* (2015), which states only 15 per cent of IEGs apply for licensure in Canada;
- Employers have a bias in favour of native talent;

continued on p. 8

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Panelists at the session hosted by the Institute for Canadian Citizenship (from left to right): Lauren Heuser, Moody Farag, P.Eng., Katrina de Asis, EIT, Aarthi Vig and Scott Young. Photo: Institute for Canadian Citizenship/ Alyssa Faoro

- The path to licensure is long and frequently opaque;
- A disconnect exists between Immigration Canada's Educational Credential Assessment (ECA) for Express Entry applicants ranked by a points system and a licensure process that doesn't recognize it; and
- IEGs may or may not receive information about licensure, nor do they have access to internship and co-op opportunities, which, in concert with potential employer bias, makes the one-year Canadian experience requirement difficult to achieve.

REPORT RECOMMENDATIONS

- Engineers Canada should conduct ECAs for Immigration Canada and share that database with regulators for licensing purposes rather than having IEGs undergo a separate credential assessment with regulators;
- Immigration Canada should inform IEGs about support services and licensing procedures when they arrive and work with settlement service providers to ensure IEGs are aware of career opportunities in related fields;
- Provincial assessments standards should be harmonized, with a national standard for assessing IEGs' credentials and competence, and specifically suggesting Engineers Canada, which was consulted for the report, take on this role;
- Regulators should develop more systematic methods for disseminating information about licensing and its benefits to IEGs;
- Regulators should employ dedicated IEG managers to support them;
- All provinces and territories should introduce fairness commissioners, and they should be empowered to receive complaints;
- Statutory maximums regarding processing time for licensure should be imposed;
- Bridging programs should be made available across Canada (Ontario and Manitoba have them);
- Competency-based assessment processes like Engineers and Geoscientists BC's pilot program, the Canadian Environment Experience Requirement Project, should be adopted by regulators across Canada to satisfy the Canadian work experience requirement;
- Standalone advocacy organizations like OSPE should advocate for IEGs and should be established across Canada;

- Regulators and employment agencies should create discipline or region-specific mentorship programs to help IEGs navigate the licensure process and form professional networks;
- Regulators should create a credentials database for employers; and
- Employers should be encouraged to diversify their workforce.

At the launch event, harmonization of licensure processes was the main topic of discussion. During a question-and-answer segment, Zuccon spoke to why the provinces and territories have their own systems and how harmonizing processes across Canada is challenging because every province and territory has its own act to adhere to. Farag addressed questions regarding perceived lengthy timelines, noting several factors that come into play, such as that PEO often waits years for the requisite supporting documents.

When PEO's approach of assessing the competency of individuals versus institutions was questioned, Farag explained: "It's not just about the education, it's about the application of knowledge. At the end of the day, it's the individual who gets the licence." Farag also explained that PEO's provisional licence was put in place to assist IEGs with employment and that it lets employers know their education has been vetted.

Concern was expressed by all over a statement made by de Asis, who is frustrated by the licensure process, saying she came to Canada because she thought it was a "land of opportunity." Vig of OSPE suggested the immigration process needs to be more honest during its application process and give a more realistic picture of what immigrants can expect regarding employment.

The full report is available at www.6degreesto.com/wp-content/uploads/2018/09/6Dii-Engineering-Report-Digital-Preview.pdf.

BITS & PIECES



The first Canadian electric car was made by Frederick Fetherstonough, a Toronto patent lawyer, in December 1896. At 350 kilograms, the car was lighter than its competitors and was propelled by a four-horsepower motor at a top speed of 25 kilometres per hour. Its battery lasted from one to five hours, depending on the model, and could be recharged by attaching wires to overhead streetcar power lines.

PRACTICE ADVISORY SERVICES REVIEW PROJECT UNDERWAY

By Adam Sidsworth

What are the challenges for practising professional engineers working for certificate of authorization (C of A)-holding firms? How is the business environment for professional engineering changing? How do firms solve their engineering project problems over the project's lifecycle? How do C of A firms make use of PEO's practice advisory services and tools? These are some of the questions being addressed in PEO's practice advisory services review project, which started in July by PEO's policy and professional affairs department.

The project aims to improve the effectiveness of PEO's practice advisory services and tools for the approximately 5600 engineering firms holding a PEO-issued C of A—which allows firms to offer professional engineering services to the public and assures that a P.Eng. can assume responsibility for its engineering work. All engineers, clients and members of the public can also access the practice advisory services, which are available on PEO's website (www.peo.on.ca/index.php?ci_id=30386/la_id=1) and include guidelines, standards, webinars and presentations.

PEO's policy and professional affairs department began working with Overlaps Associates, a Kitchener, Ontario-based consultancy firm, on intensive ethnographic research to determine—using design thinking—the needs and values of firms and practitioners who access the services.

The impetus behind the research began two years ago, according to PEO Policy Manager Jordan Max. "As we recognize the importance of company values, policies and practices on how engineers practise professional engineering in a C of A firm, we wanted to complement the earlier research by talking to the professional engineer assuming responsibility for the engineering work at the firm," Max says. "We're now looking more closely at individual engineers and how they practise. In the first round, we explored how individuals working in C of A firms operated." He adds that other Ontario

regulators, notably the Law Society of Ontario, have also studied the influence of firms in determining the decisions and behaviours of licensed individuals and have introduced entity regulation to address those issues.

Max adds that the project finished its ethnographic research stage—studying and interpreting the behaviour of people in specific social situations and understanding their interpretation of their behaviour—in August to better understand their practice needs and then conducted an online validation survey of their results in September to assist with prioritizing practice needs and identifying solution opportunities.

Based on the findings from these sessions, the team conducted a series of sessions in October with members of PEO's Professional Standards Committee and its subcommittees, PEO practice advisors and other staff, and interviewed participants from the summer session to review the research findings, generate ideas and rapidly prototype new solutions for tools and services. The team used activities, such as empathy maps, feedback grids and journey maps, to build around the needs of PEO's stakeholders. "It's not your typical report, with data, peer reviews and closed-room analysis," Max says, noting the team is building out and testing new formats, products and services. "When you build a prototype and do iterative testing and feedback improvements, you know that when it's ready to launch, you're much more certain [of what you'll be doing]," Max notes. "It's informed doing instead of informed planning."

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CEO HEAD URGES PROVINCIAL GOVERNMENT TO PRIORITIZE INFRASTRUCTURE SPENDING

By Adam Sidsworth



The chief executive officer of Consulting Engineers of Ontario (CEO) is calling on the newly elected provincial government to reaffirm the province's commitment to plan its \$100 billion infrastructure deficit.

CEO head Bruce Matthews, P.Eng., met with the premier's office and other ministries in late July, less than two months after this year's provincial election, and was encouraged by what he heard. Yet, as Matthews noted in an interview with *Engineering Dimensions*, it is still too early to grasp the direction of the new government, as ministries are still hiring their staff and performing internal audits. Matthews plans to meet with the minister of infrastructure later this fall.

"Our interest is in what the government is going to do," Matthews says. "Infrastructure spending and planning [spans] across the political spectrum. Some kind of statement of intent will help our members understand where their businesses will be. The previous government had a plan in place close to two years ago; it may not have been the perfect plan, but it was a plan of intent that coordinated with the federal government."

The Wynne government had committed to spending \$190 billion over 13 years to improve hospitals, schools, public transit, roads and bridges and had developed the province's first-ever inventory to describe the condition, age and value of provincial infrastructure. The plan also considered

climate change considerations and linked infrastructure investments to social policy initiatives.

Matthews, who served as deputy registrar of regulatory compliance at PEO until 2010 before taking on a deputy registrar position at the Real Estate Council of Ontario, took over the head position at CEO this past February (see *Engineering Dimensions*, March/April 2018, p. 14).

CEO was founded in 1975 to advocate for the business interests of the province's estimated 200 consulting engineering firms, which employ 20,000 people; nationally, consulting engineering firms annually contribute over \$28 billion to the Canadian economy. "There are a lot of things about Ontario being open for business," Matthews continues, "and from that perspective, if the government's not going to spend on infrastructure, in terms of transit and water and waste management and the whole nine yards, it's not going to get the traction to develop growth."

Matthews encourages the new government to think outside fiscal constraint. "Politicians get nearsighted in [upfront] cost and not the ongoing cost of what it'll be to maintain the piece of infrastructure," he says. "If you spend time and effort in your design, in terms of innovation, you'll have a piece of infrastructure that will reduce the overall maintenance costs by virtue of its engineering. Is it going to cost a little more at the beginning? Yes, but the overall lifecycle savings will be huge." Matthews would like to see the province and its municipalities shift their requests for tenders from a cost-focused approach to qualifications-based selections (QBS). With QBS, Matthews notes, firms are chosen primarily on qualifications, with cost being negotiated after. If the client and vendor are unable to agree on a price, the client moves on to the next most-qualified candidate. "Our members should be chosen on qualification, not on price," he says. "If you're talking about the bulk purchases of road salt, salt is salt. But it's not the same thing as the knowledge of trained experts like our engineers. Is it scoped correctly? Are you getting fair market prices? QBS assures that."

Matthews notes that QBS has been widely adapted in the United States, and some Ontario municipalities—notably London and Waterloo—have used it in the past. QBS is far from perfect, though, and the decision can still come down to cost.

Additionally, Matthews sees liability as a bigger obstacle for consulting engineering firms. "We have concerns about insurance requirements being put into contracts," he says. "From our perspective, risk needs to be properly apportioned [between the client and engineering consulting firm]. It's not fair to put things on that are outside the consultant's control."

PEO RESPONDS TO THE FAIRNESS COMMISSIONER ON MANDATORY CANADIAN EXPERIENCE

By Adam Sidsworth



While acknowledging that PEO's 12-month Canadian work experience requirement for all applicants for licensure may not strictly comply with the provisions of the *Fair Access to Regulated Professions and Compulsory Trades Act*, the association expressed confidence to the Office of the Fairness Commissioner (OFC) that the requirement is necessary when considering its legislated mandate to protect the public interest.

Currently, all applicants wishing to obtain their licence to practise engineering in Ontario must have a minimum one year of Canadian experience under the supervision of a licensed professional engineer.

The OFC conducts annual reviews of the registration practices of all regulatory bodies in Ontario, including PEO.

In a March 15, 2018, letter to PEO—and in subsequent face-to-face meetings in April and July—Fairness Commissioner Grant Jameson stated that PEO's mandatory Canadian experience fails to meet an Ontario Human Rights Commission policy requiring "regulatory bodies to show that a requirement for prior work experience in Canada is a bona fide requirement." As a result, Jameson stated that PEO is not living up to its duties in the Fair

Registration Practices Code of the *Fair Access to Regulated Professions and Compulsory Trades Act*.

In an August 2, 2018, letter to Jameson, PEO Interim Registrar Johnny Zuccon, P.Eng., FEC, responded to Jameson's concern, noting that PEO has a mandate to protect public safety, and pointed out that:

- To assure public safety, applicants must demonstrate their professionalism and competency under the supervision of an experienced licensed engineer, providing assurance that they meet PEO's high standards;
- All applicants, regardless of their country of origin or education, must meet the one-year Canadian work experience;
- The *Professional Engineers Act* allows any adult to practise professional engineering so long as a licence holder assumes responsibility for their work;
- A provisional licence was developed in 2003 to assist applicants who meet all licensing requirements except the Canadian experience to find Canadian engineering employment; and
- All 12 Canadian engineering regulators have universal licensing requirements to ease inter-provincial mobility.

Jameson, who became fairness commissioner in 2017, noted that PEO's rationale behind the one year of Canadian experience under the supervision of a licensed engineer—reaffirmed in a 2015 PEO Council statement—is "insufficient," as "it focuses on the importance of an applicant receiving validation from an individual already licensed by PEO and does not demonstrate openness to alternative methods for applicants to prove they are fully competent to practise in Ontario." Jameson also expressed disappointment that PEO's involvement in an Engineers and Geoscientists British Columbia-led competency initiative has yet to produce an alternative.

continued on p. 12



“I believe with a head start like mine in life, I owe a duty to give back to the communities and industries I work in.”

- **Jeff Westeinde**, investor, entrepreneur and President of Zibi Canada

The Faculty of Engineering at Western University is proud to honour **Jeff Westeinde, BESC'89, P.Eng.** with the **2018 L.S. Lauchland Engineering Alumni Medal** for his contributions to business leadership, the community and the engineering profession.

Find out more at eng.uwo.ca



continued from p. 11

The initiative is a competency model that Zuccon noted integrates eight competencies directly related to Canadian engineering into the licensing framework. These competencies can be partially demonstrated by 60 hours of online training and augmented by supervised experience. However, the project is ongoing, and Zuccon informed Jameson that “more work must be done before alternative assessment methods can be considered...PEO staff is currently researching alternatives, including a structured internship requirement and replacing the fixed, 12-month experience with a flexible one.”

OTHER CONCERNS

The fairness commissioner also raised concerns regarding the review process of PEO’s Academic Requirements Committee (ARC); principally, Jameson expressed that internal reviews of applicants’ files should not be completed by the same assessor who completed the initial review. According to Acting Deputy Registrar, Licensing and Registration Moody Farag, P.Eng., PEO currently makes every effort to have each review conducted by a different assessor.

The fairness commissioner also requested that PEO’s Experience Review Committee (ERC) develop clear guidelines relating to situations of potential biases and conflicts of interest. Pauline Lebel, P.Eng., PEO’s manager of licensure, noted the ERC has long had an unwritten policy to deal with potential biases and conflicts of interest, but they have now been written and formalized.

At the request of the fairness commissioner, PEO is consulting with a psychometrician to confirm the validity of the professional practice examination, which all PEO applicants must pass to qualify for a licence. PEO is currently in the process of hiring a consultant to do the validity work. The fairness commissioner also requested that PEO allow non-engineer, public members on its committees, similar to the practice of other regulatory bodies. In response, Zuccon noted that some committees, such as the ERC and ARC, require members to have engineering knowledge to perform peer-based assessments of technical materials. However, Zuccon noted, “Through our Equity and Diversity Committee, work is being done to ensure that fair and inclusive values and principles are always integrated into the general policy and business operations of the association.”

REGULATORS DISCUSS PUBLIC CONFIDENCE, GOVERNMENT OVERSIGHT

By Duff McCutcheon

In Canada and around the world, professional regulators are facing increased scrutiny by both the public and governments for perceptions they’re doing too little to protect the public and too much to guard their own. Such was the warning delivered to delegates of an interactive governance training workshop on September 17 and 18 in Toronto, Ontario, hosted by the Ontario College of Pharmacists and organized by the Council on Licensure, Enforcement and Regulation (CLEAR). PEO President David Brown, P.Eng., BDS, C.E.T., and President-elect Nancy Hill, P.Eng., LLB, FEC, participated on behalf of the association.

The solution for regulators, according to workshop facilitators, is to create trust by building competence in their governance and processes, and being honest, accountable and consistent in their regulatory decisions—especially around discipline.

Skepticism around professional regulators gained public prominence in both the United Kingdom and the United States in the 2000s. In the UK, it was prompted by the public’s horror around serial killer doctor Harold Shipman, who killed at least 250 patients with lethal doses of morphine, according to Deanna Williams, a CLEAR instructor and former registrar with the Ontario College of Pharmacists. The fact that Shipman’s deadly actions continued for years without drawing any legal or regulatory attention prompted the UK government to create the Professional Standards Authority (PSA)—an arm’s length “regulator of regulators” that now oversees the UK’s health professions.

In the US, several massive corporate frauds—Enron, WorldCom and Tyco—cast doubt on the public accounting profession and ultimately brought passage of the *Sarbanes-Oxley Act* that set new requirements for public accounting firms.

More recently, in Canada, there have been several media reports questioning regulators’ perceived ability—and will—to protect the public. Workshop participants reviewed recent headlines about Ontario regulators of doctors, dentists and pharmacists issuing secret cautions to practitioners that were hidden from the public, as well as about the College of Nurses of Ontario, who came under fire for their dealings with serial killer and former nurse Elizabeth Wettlaufer.

These and other stories raise questions about all self-regulated professions: Who are they protecting? The public or themselves?

The key to building trust, according to Williams and her co-facilitator Jan Robinson, registrar and CEO at the College of Veterinarians of Ontario, is competent regulation and honesty and transparency in regulatory decision making.

“The principles of good regulation include proportionality, accountability, consistency, transparency and being targeted,” Robinson said. “Proportionality—is intervention necessary? And what kinds of interventions lead to desired outcomes? Accountability—justifying decisions and telling the public how it serves and protects the public. Consistency—implementing frameworks and templates that guide decision making and make them defensible. Transparency—being as

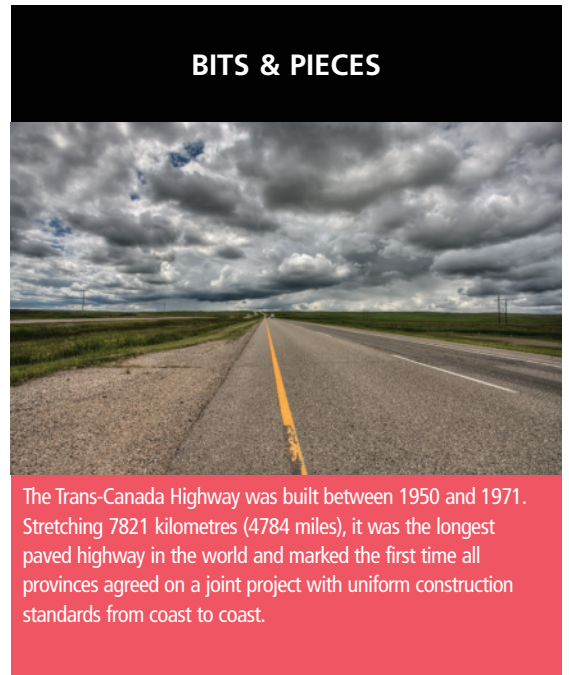
open as you can to build trust. And targeted—focusing only on what you’re trying to solve.”

The facilitators pointed to the PSA’s concept of right-touch regulation as an ideal model in regulation:

- Identify the problem before the solution;
- Quantify and qualify the risks;
- Get as close to the problem as possible;
- Focus on the outcome;
- Use regulation only when necessary;
- Keep it simple;
- Check for unintended consequences; and
- Review and respond to change.

In demonstrating regulatory trustworthiness—especially when it comes to questions from the public and media—regulators are often constrained by their legislation in providing full complaints and discipline details. “But we can be open and honest about our decisions and explain the reasons why we can’t disclose certain things,” Williams said.

An external review of PEO’s regulatory performance will be conducted in 2019 by Harry Cayton, an international consultant to the Professional Standards Authority, to identify the gaps between the association’s current practices and the process, procedures and policies exhibited by the most effective regulators (see p. 6).



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RETIRED MANITOBA ENGINEER FACES DISCIPLINARY HEARING OVER AMBER LIGHTS COMMENTS

By Adam Sidsworth



A retired Manitoba engineer has gained national media attention after being charged with professional misconduct over comments he made about the timing of Winnipeg amber traffic lights to two Manitoba newspapers.

David Grant, P.Eng. (Manitoba), who attended his first disciplinary hearing with the province's engineering regulator, Engineers and Geoscientists Manitoba (EGM), in July, was charged with seven allegations, including bringing his profession into ill repute, expressing opinions without being qualified, and practising while retired. He faces a potential loss of licence, \$25,000 fine and assignment of EGM's legal costs. Grant's hearing was indefinitely adjourned by EGM.

The charges stem from comments Grant made to two Winnipeg-area newspapers in 2016 and 2017 regarding the legal battle of a now-deceased Manitoba man, James Aisaican-Chase, who challenged his red-light ticket. Grant told the newspapers that Winnipeg's four-second amber lights are ideal only in good weather conditions and on lower-speed roads. He believes a four-second amber light often is not enough time for a vehicle to completely clear the intersection before the light turns red.

In a statement to *Engineering Dimensions*, David Driedger, manager, corporate relations for the City of Winnipeg, declined to make a statement about Grant's ongoing disciplinary hearing. However, he confirmed that "the city uses four seconds as a standard amber-light duration for all signalized intersections."

Michael Gregoire, P.Eng., director of professional standards for EGM, declined to speak in detail about Grant's case, citing the regulator's bylaws; however, he stated, "We are confident the panel of peers reviewing these charges will afford Mr. Grant a fair hearing." He also noted that some of the additional charges, notably divulging confidential information and making false statements, are not related to the comments about amber lights.

In his role as chair of EGM's appeals committee, Grant investigated and reported on a wide variety of traffic and road conditions, using the industry's Institute of Transportation Engineers equations, safety rules imposed by insurance companies, and his 50 years of experience as a motorsports safety official and analogous situations considered by airplane and airport designers.

Grant, who earned his degree in chemical and materials engineering from the University of Windsor, worked for 15 years as a PEO-licensed engineer in southwestern Ontario, most notably in Port Hope and Sarnia, where he worked in both the uranium and petroleum industries. He relocated to Winnipeg in 1986, after accepting a position with Manitoba Hydro, which required an engineer to supervise their then-new process of removing trace PCB contamination from transformer oil.

RAMPING UP FOR NATIONAL ENGINEERING MONTH 2019

By Michelle Cochrane



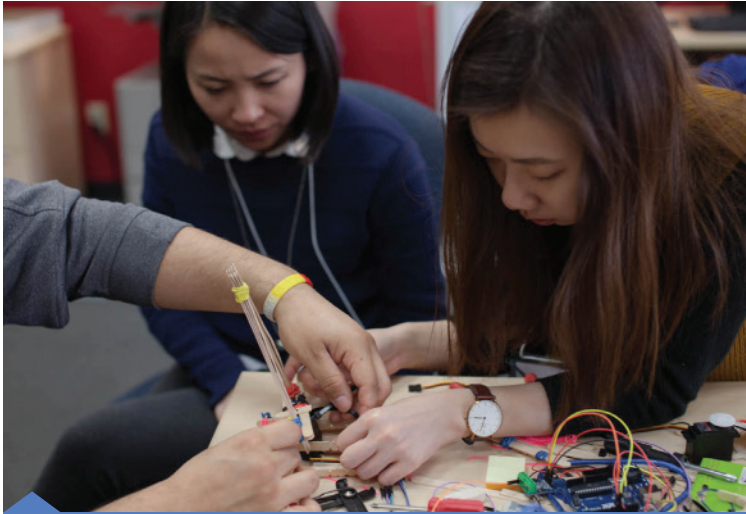
Are you passionate about engineering and technology? We invite you to help us inspire the next generation of young professionals during National Engineering Month (NEM) in March 2019.

NEM is an annual celebration of engineering and technology. Occurring annually in March, this unique initiative provides professionals and students with the opportunity to engage a diverse audience of young people in learning about engineering and technology through interactive and informative events, workshops and activities around the central theme of "There is a place for you!"

This theme reflects a shared vision for increasing diversity and inclusion in engineering and technology. As global challenges grow in complexity and urgency, it's more important than ever to encourage creative and collaborative solutions, and this requires diversity in the groups leading those solutions. NEM seeks to encourage a variety of young people to choose a career in engineering and technology by conveying a sense of belonging and inclusion and by showcasing these fields as being rewarding, meaningful and influential for solving pressing 21st-century problems.

As one of its founding partners, PEO has been a meaningful contributor in making NEM a success for the past 26 years in collaboration with the Ontario Association of Certified Engineering Technicians and Technologists (OACETT) and the Ontario Society of Professional Engineers (OSPE). Last year was no exception: Through a series of more than 600 events across Ontario, we collaborated with partners, sponsors, event organizers and volunteers to engage more than 12,000 young people. PEO chapters contributed 75 events, and nine events jointly hosted with OACETT. From robotics demonstrations to fun and creative challenges, PEO members generated curiosity and interest in engineering and technology.

We would like to invite all PEO members to join us again in March 2019 in creating an unforgettable NEM experience.



George Brown College students in Toronto collaborate at a National Engineering Month workshop, "Hack Your Life: Intro to Hardware Hacking."

It is easy to get involved. If you have an idea for an event, we'd like to hear from you! Please complete the Event Registration and Funding Application Form (form.jotform.com/82633748384265) by Friday, November 16, 2018. If you need some inspiration, visit nemontario.ca to read about examples of creative activities such as workshops, speaker series, hackathons and more. If you're new to event organizing, don't worry; we have activity ideas, funding and swag available to support you in delivering your event. PEO chapters can each receive up to \$700 to organize events.

Don't forget to follow us on Facebook, Twitter and Instagram @NEMOntario and visit nemontario.ca for regular updates. We look forward to working with you to make #NEM2019 bigger and better than ever before!

Michelle Cochrane is project manager for the National Engineering Month campaign at Groundswell Projects. You can reach her at michelle@groundswellprojects.org.



AWARD FOR ENGINEERING PROJECT OR ACHIEVEMENT

Do you know an engineering team that has led a successful engineering project or achievement?

The Ontario Professional Engineers Awards (OPEAs) are now considering submissions for the 2019 Award for Engineering Project or Achievement, which pays tribute to an endeavor that has made a significant, positive impact on society, industry and/or engineering, and that was conceived, designed and executed with significant input by Ontario engineers.

Previous recipients of the award include Hands-Free Mooring by the St. Lawrence Seaway Management Corporation, the Dual Education Program by Siemens Canada and the 2nd Concession Project by The Regional Municipality of York.

For more information, see the OPEA call for nominations on page 22.

The OPEAs showcase Ontario professional engineers who have made outstanding contributions to their profession and community. Recipients are honoured annually in November at a black-tie gala hosted jointly by the Ontario Society of Professional Engineers and Professional Engineers Ontario.

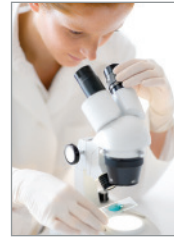
November 2018



NOVEMBER 4-7
National Water and Wastewater Conference, Montreal, QC
nwwc2018.ca

NOVEMBER 5-6

The Canadian Council for Public-Private Partnerships Conference, Toronto, ON
pppcouncil.ca

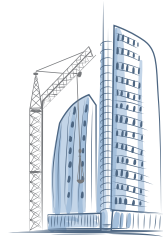


NOVEMBER 5-7

Mirror Technology SBIR/STTR Workshop, El Segundo, CA
spie.org/conferences-and-exhibitions/mirror-technology-sbir/sttr-workshop

NOVEMBER 6-8

Global MilSatCom 2018 (conference and exhibition), London, UK
smi-online.co.uk/defence/uk/global-milsatcom



NOVEMBER 7-9

Design-Build Conference & Expo, New Orleans, LA
<https://dbia.org/conferences/design-build-conference-expo>

NOVEMBER 8-9

Electric & Hybrid Aerospace Technology Symposium, Cologne, Germany
electricandhybridaerospacetechnology.com



NOVEMBER 9-15

International Mechanical Engineering Congress and Exposition, Pittsburgh, PA
asme.org/events/imece

NOVEMBER 11-14

Canadian Technical Asphalt Association, Regina, SK
ctaa.ca/conference



NOVEMBER 13-14

Future of Utilities: Water 2018, London, UK
new.marketforce.eu.com/future-of-utilities/events/water

NOVEMBER 14-16

Greenbuild International Conference and Expo, Chicago, IL
greenbuildexpo.com



NOVEMBER 17

Ontario Professional Engineers Awards Gala, Mississauga, ON
opeawards.ca

NOVEMBER 20-21

Machine Learning Summit, Toronto, ON
torontomachinelearning.com/summit

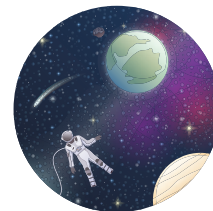


NOVEMBER 24-26

Renewable Energy and Power Engineering, Toronto, ON
repe.net

NOVEMBER 28-30

The Buildings Show, Toronto, ON
thebuildingsshow.com



NOVEMBER 27-29

Canadian Space Summit, Ottawa, ON
css.ca/summit/canadian-space-summit-2018

December 2018



DECEMBER 4-5

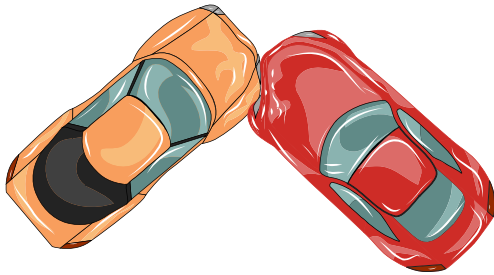
Energy from Waste (conference), London, UK
smi-online.co.uk/energy/uk/energy-from-waste

DECEMBER 17-19

IEEE Conference on Decision and Control, Miami Beach, FL
cdc2018.ieeecss.org

AN ENGINEER'S DUTY TO PROVIDE INDEPENDENT OPINIONS

By José Vera, P.Eng., MEPP



Consider this scenario: After a collision between a red vehicle and an orange vehicle, the following potential clients can choose to engage an engineering firm:

- The driver of the red vehicle,
- The driver of the orange vehicle,
- The different lawyers of the drivers,
- The police,
- The insurance companies, and
- The provincial court.

In this specific scenario, the driver of the orange vehicle engages ABC forensic engineering firm to prepare a forensic report of the automotive accident. This raises a few interesting questions:

Question:

Should the engineers at ABC write a forensic engineering report that is intentionally favourable to their client, the driver of the orange vehicle?

Answer:

No, since "expert witnesses have a duty to the court to give fair, objective and non-partisan opinion evidence...The acid test is whether the expert's opinion would not change regardless of which party retained him or her." This quote is taken from the Supreme Court of Canada judgment *White Burgess Langille Inman c. Abbott and Haliburton Co.*, [2015] 2 SCC 182. For more information, read the judgment at scc-csc.lexum.com/scc-csc/scc-csc/en/item/15328/index.do.

Note the above requirement mirrors PEO's Code of Ethics: "The practitioner shall...not express publicly, or while the practitioner is serving as a witness before a court, commission or other tribunal, opinions on professional engineering matters that are not founded on adequate knowledge and honest conviction."

The key lesson learned is that ABC forensic engineering must provide a non-partisan report, regardless of which client engaged them.

Q:

Does the duty to give non-partisan opinions apply only to forensic engineers? In other words, engineers who apply "professional engineering principles and methodologies to investigating failures and incidents, usually to determine causation. Normally, it involves preparing a report of findings, which may form the basis for testimony in legal proceedings as an expert witness." This definition is taken from the PEO guideline *Forensic Engineering Investigations*, which is available at www.peo.on.ca/index.php/ci_id/29496/la_id/1.htm.

A:

Recall PEO's Code of Ethics, which states, "A practitioner shall act in professional engineering matters for each employer as a faithful agent or trustee." Furthermore, the national guideline on the code of ethics notes, "Being a faithful agent or trustee...means being accurate, objective and truthful in making public statements on behalf of the client or employer when required to do so, while respecting the client's and employer's rights of confidentiality and proprietary information." From the above, it follows that all practitioners have a duty to give non-partisan opinions. For more information, read the *National Guideline on the code of ethics*, written by Engineers Canada, at engineerscanada.ca/publications/national-guide-line-on-the-code-of-ethics.

Q:

Is it professional misconduct to give partisan opinions?

A:

Recall that professional misconduct, which is under Regulation 941/90, section 72(2)(i), states that professional misconduct means, among other things, "carrying out any of the following acts without making such a prior disclosure: ...5) Expressing opinions or making statements concerning matters within the practice of professional engineering of public interest where the opinions or statements are inspired or paid for by other interests." The above indicates that the professional misconduct is in the failure to disclose situations where opinions were inspired by other interests. Nonetheless, it could also be argued that a reasonable and prudent practitioner under similar circumstances would act out of caution and provide only independent opinions, since the Code of Ethics clearly notes that practitioners shall act as a faithful agent or trustee and shall not express opinions that are not founded on honest conviction.

Finally, PEO's practice advisory team is available by email at practice-standards@peo.on.ca and is happy to help practitioners looking for more information on their duty to provide independent opinions. However, practitioners looking for assistance on resolving legal problems occurring in specific, concrete situations should always contact their lawyer.

Further reading: *The Professional Engineer as an Expert Witness*, available at www.peo.on.ca/index.php/ci_id/22088/la_id/1.htm. [e](#)

José Vera, P.Eng., MEPP, is PEO's manager of standards and practice.

P.ENGs AND STUDENTS HONOURED WITH AWARDS

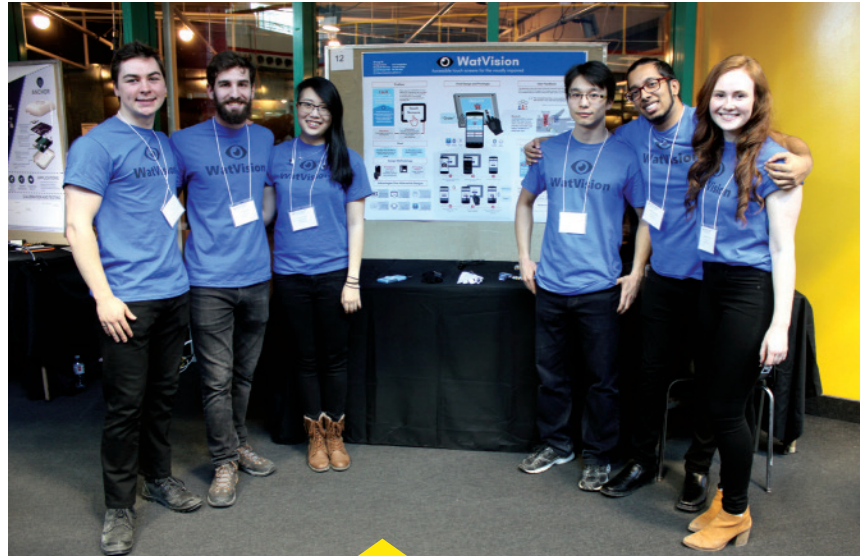
By Marika Bigongiari

University of Waterloo engineering professor **Keith Hipel, PhD, P.Eng.**, has been named to the Order of Canada. Hipel is an esteemed leader in systems design engineering who has worked tirelessly on finding solutions for climate change. He was president of the Academy of Sciences of the Royal Society of Canada from 2013 to 2015 and has received numerous awards over the course of his career, including an Engineering Medal for Research and Development from Professional Engineers Ontario and the Ontario Society of Professional Engineers in 2010. The Order of Canada recognizes outstanding achievement, dedication to community and service to the nation and is one of Canada's highest honours.

Ralph Haas, PhD, P.Eng., a professor emeritus in the University of Waterloo's civil and environmental engineering department, received the Doctor of Science, honoris causa, the University of Alberta's highest honour, at its spring convocation in June. Haas, who is affectionately known as the father of pavement asset management, has authored numerous books and technical articles on the subject. He's been recognized for pioneering work in civil infrastructure asset management and related fields, such as highways and pavement.

Engineering firm **mcCallumSather** was named to the 30th annual Growth 500—a highly respected and influential ranking of entrepreneurial achievement—by *Canadian Business* and *Maclean's* magazines. The company made 395 on the list, which ranks Canada's fastest-growing companies. mcCallumSather is an integrated architectural, mechanical engineering and interior design firm and is regarded as a leader in sustainable design.

McMaster University honoured five first-year engineering students with scholarships: **Jared Levy**, a materials science and engineering student, received the \$32,000 HATCH entrance scholarship (over four years) and \$5,000 undergraduate summer research award; **Maddison Conway**, an engineering physics and chemical engineering student, received the \$32,000 HATCH entrance scholarship, \$2,500 president's award and \$5,000 undergraduate summer research award; **Sanjula Ganepola**, a software engineering student, received the \$10,000 Joseph Ip entrance scholarship, \$2,500 president's award, and \$5,000 undergraduate summer research award; **Lauren Rotz**, a chemical engineering student, received the \$1,500 Ontario Professional Engineers Foundation for Education entrance scholarship, \$2,500 president's award, and \$5,000 undergraduate summer



The University of Waterloo engineering student team, whose project, WatVision, captured a national James Dyson Award: (from left to right) Craig Loewen, Lior Lustgarten, Jennifer Kim, Joseph Lundy, Jake Rampertab and Elizabeth Morrow. Photo: Isabella McKenzie

research award; and **Jonathan Que**, an engineering student, received the \$7,500 Dalvi family entrance scholarship, \$2,500 president's award and \$5,000 undergraduate summer research award.

University of Waterloo engineering student project **WatVision** captured a national James Dyson Award, an international design award that celebrates, encourages and inspires the next generation of design engineers. Each year, the judges look for product designs that solve real-world problems, and WatVision does exactly that. Inspired by a visually impaired fellow student's difficulty with using a touch-screen-operated coffee maker, the team, including Craig Loewen, Jennifer Kim, Joseph Lundy, Lior Lustgarten, Elizabeth Morrow and Jake Rampertab, created an app that makes touch screens accessible to the visually impaired. The technology works by pointing a smartphone camera at a touch screen, upon which the app reads the words on the screen—detected by a ring the user is wearing—aloud. The James Dyson National Award is worth \$3,000, which the team plans to use towards maintaining server access subscriptions and computing time. Two national runners up were also chosen: **Printem**, a University of Toronto project involving a smart film that reduces the time between circuit board design and prototype; and **Revertome**, another University of Toronto project, this time improving the treatment of severe burn injuries via a surgical instrument that uses bioink and a compact handheld bioprinter. All three teams will move onto the next stage of the competition, where a panel of Dyson engineers will select a top 20 international shortlist. [e](#)

PEO NORTHERN REGION CHAPTERS MAKE A DIFFERENCE

By Howard Brown

Northern Ontario is home to many important infrastructure projects, especially in the transportation and resources sectors. Engineering is critical to these projects, so effective relationships between engineers and elected officials can only serve to benefit our province.

This makes the work of PEO's Government Liaison Program (GLP) in the Northern Region particularly vital as they reach out to local members of provincial parliament (MPPs) in their ongoing activities. Chapter GLP members reinforce PEO's legislative mandate to regulate the practice of professional engineering in the public interest to MPPs.

However, the vast distances covered by northern ridings create a unique challenge for PEO's Northern Region chapters, as they must often work harder to get the attention of public officials and to bring engineers together. But their work organizing local outreach events has helped them to create some especially close relationships with MPPs. One great example is the PEO Lakehead Chapter Annual Engineering and Technology Conference. The 56th annual conference on November 3, 2017, in Thunder Bay, ON, attracted nearly 170 engineers and students and received cabinet-level attention as Bill Mauro, then-MPP for Thunder Bay-Atikokan and minister of municipal affairs, provided greetings. Another example is the 2012 GLP Academy and Congress in Sudbury, ON. It included MPPs like Vic Fedeli (Nipissing), Michael Mantha (Algoma Manitoulin) and John Vanthof (Temiskaming).

The North Bay Chapter's symposium also has a long history. Its 48th Annual Professional Engineers Day Symposium was hosted on January 26, 2018, along with the Ontario Association of Certified Engineering Technicians and Technologists (OACETT). Public figures in attendance included Anthony Rota, MP (Nipissing-Timiskaming), and North Bay Mayor Al McDonald, who is a former MPP. Vic Fedeli would have also been there but was at Queen's Park assuming the interim leadership of the Ontario Progressive Conservative Party. He has been a regular participant in past symposiums, but he now has bigger responsibilities as minister of finance and chair of cabinet. As a former North Bay mayor, Fedeli had worked closely with North Bay's chief engineer and former PEO Northern Region Councillor David Euler P.Eng.

In 2014, Fedeli made remarks in the legislature showing his respect for the profession and PEO: "It gives me great personal pleasure to stand today to pay tribute to a friend, David Euler, who will be recognized as a Companion of the Order of Professional Engineers Ontario on April 28 in Niagara Falls," he said. This is one of many examples of northern MPPs demonstrating the relationships they have built with engineers when they are back in Toronto for the legislative sessions.

The extra efforts of Northern Region chapters complement the year-round plan of chapter GLP events like Take Your MPP to Work Day, licence ceremonies and National Engineering Month activities. These accomplishments are proving to be a productive combination. [e](#)

Howard Brown is president of Brown & Cohen Communications & Public Affairs Inc., and PEO's government relations consultant.

BUILDING RELATIONSHIPS WITH KEY MPPs

The long-term relationships PEO Northern Region chapters are building with their local MPPs are particularly valuable because so many of these legislators have important responsibilities at Queen's Park. Key northerners in the legislature include:

ALGOMA CHAPTER:

- Michael Mantha, MPP (Algoma-Manitoulin), NDP critic for northern development and mines
- Ross Romano, MPP (Sault Ste. Marie), parliamentary assistant to the minister of energy, northern development and mines, and the minister of indigenous affairs

LAKEHEAD CHAPTER:

- Sol Mamakwa, MPP (Kiiwetinoong), NDP critic for indigenous relations and reconciliation
- Judith Monteith-Farrell (Thunder Bay-Atikokan), NDP critic for natural resources and forestry
- Michael Gravelle, MPP (Thunder Bay-Superior North), Liberal critic for northern development and mines, and natural resources and forestry

LAKE OF THE WOODS CHAPTER:

- Greg Rickford, MPP (Kenora-Rainy River), minister of energy, northern development and mines, and indigenous affairs

NORTH BAY CHAPTER:

- Vic Fedeli, MPP (Nipissing), minister of finance and chair of cabinet

PORCUPINE/KAPUSKASING CHAPTER:

- Guy Bourgouin, MPP (Mushkegowuk-James Bay), NDP critic for francophone affairs, training and trades, and apprenticeships
- Gilles Bisson, MPP (Timmins), NDP house leader

SUDBURY CHAPTER:

- France Gélinas, MPP (Nickel Belt), NDP chief whip and health critic
- Jamie West, MPP (Sudbury), NDP labour critic

TEMISKAMING CHAPTER:

- John Vanthof, MPP (Timiskaming-Cochrane), deputy leader of the opposition and NDP critic for agriculture and food, rural development

IN MEMORIAM

THE ASSOCIATION HAS RECEIVED WITH REGRET NOTIFICATION OF THE DEATHS OF THE FOLLOWING MEMBERS
(AS OF SEPTEMBER 2018).

ASHRAF, Jamal S.
Mississauga, ON

BAGARIC, Stipan
Mississauga, ON

BAGHDASSARIANS, Razmik
Scarborough, ON

**BALASINGHAM,
Sivagurunathan**
Inglewood, ON

**BALDINELLI, Michael Joseph
Vincent**
London, ON

BALL, Frank Douglas
Mississauga, ON

BOND, Courtney Frederick
Brockville, ON

BRAUN, Lothar
Mississauga, ON

BURGESS, Arthur Ernest
Ottawa, ON

CAMPBELL, Noel Brooks
Penetanguishene, ON

CERESINO, Angelo John
Beeton, ON

CLEGHORN, William Leslie
Toronto, ON

COMELLO, Corrado
Scarborough, ON

COOPER, Sydney Charles
Toronto, ON

CORBACIO, Giacomo Anthony
Stoney Creek, ON

CROSBY, Douglas Lloyd
Nanaimo, BC

CROUSSETT, Eric
Saint-Jerome, QC

CUDDEN, Robert
North York, ON

CULINESCU, Teodor Neculai
London, ON

DE-SANTIS, Alberto
Mississauga, ON

**DESNOYERS, Guy Joseph
Rosial**
Ottawa, ON

DROPPO, Harold Earle
Winchester, ON

DROZD, John
London, ON

DUDLEY, Robert Stanley
Sarnia, ON

DUMBRILLE, Francis Kenward
Maitland, ON

DURAND, Marc Andre
Fonthill, ON

ERATOSTENE, Joseph John
Scarborough, ON

FELDMANN, Kari Jurgen
Waterloo, ON

FORSYTH, Edgar John
Burlington, ON

FOWLER, Raymond Arthur
Kitchener, ON

GIDDINGS, Kenneth
Mississauga, ON

GILLESPIE, Robert Douglas
North York, ON

GILROY, David Everett
Cedar Park, TX

GOSLING, Marlene Edith
Concord, MA

GREER, Glenn James Milton
Guelph, ON

GUPTA, Kamlesh Gopal
Orleans, ON

**HAMILTON, Gordon David
Stancer**
Oakville, ON

HAUCK, Andrew Richard
Gloucester, ON

HAYDOCK, Alfred Jack
Manilla, ON

HECKZKO, Zdzislaw
Peterborough, ON

HEYERICHS, Karl Albert
Sudbury, ON

HICKSON, Robert Douglas
Scarborough, ON

HOFFMAN, Raymond Ross
Stittsville, ON

HOUSE, Lawrence Thomas
Whitby, ON

HURLEY, Wayne Robert
Thunder Bay, ON

INGRAM, John Sidney
Richmond, BC

JADWANI, Narendra Singh
Brampton, ON

JORY, Daniel Bryan
Port Elgin, ON

KARNICK, Suresh Narayan
Pointe Claire, QC

KIKUCHI, Tom Tsutomu
East York, ON

KLAGES, Benjamin Matthew
Brampton, ON

KOT, Stephen Donald
Ottawa, ON

KYRYLIUK, Michael Dennis
Tecumseh, ON

LADESICH, Edward
Caledonia, ON

LANGILLE, Kevin Brian
Milton, ON

LARDNER, Willam Ernest
Toronto, ON

LEVICK, Edward Raymond
Toronto, ON

LUKASIEWICZ, Julius
Ottawa, ON

LUMSDEN, Howard Rice
Toronto, ON

MA, Henry Hung-Cheung
Richmond Hill, ON

MAHMUD, Qasem Hasan
Nepean, ON

MANSFIELD, Ronald Albert
Victoria, BC

**MARSH, George Frederick
Peter**
Kanata, ON

MASUDA, Tsotomu Richard
Scarborough, ON

MCFARLANE, Gary Graeme
Katrine, ON

MCLEAN, Robert William
Niagara Falls, ON

MCTAVISH, Robert John
Toronto, ON

MEHTA, Navin Rugnath
Mississauga, ON

**MELINYSHYN, Walter
Stephen**
Thornhill, ON

MENELEY, Daniel Allison
Lakefield, ON

MILLER, Jose David
Vanier, ON

MILLER, Walter Ernest
Barrie, ON

**MITCHELE, Richard John
Macaulay**
Aurora, ON

MITCHELL, Alfred Sylvester
Toronto, ON

MOIR, James Robert
Baden, ON

MORGAN, Charles William
Halifax, NS

MOSS, Larry Charlie
London, ON

**MOUSAVI AZAD KASMAEI,
Shahaboddin**
Westmount, QC

NICKERSON, Gary Allen
London, ON

**NORONHA, Frederick Caetano
Filip**
Mississauga, ON

O'MALLEY, Brian Frederick
St. Lambert, QC

ORBACH, Oded
Toronto, ON

ORR, Noel Henry
Ottawa, ON

PAPADOPOULOS, Nikiforos
Knoxville, TN

PARIC, Michael
North York, ON

PARKER, George Edward
Mississauga, ON

PIERCE, Kenneth Raymond
Magog, QC

PITTS, Joseph Franklin
North York, ON

PREDOIU, Gheorghe
Etobicoke, ON

PULLAN, Bernard Morton
Toronto, ON

RAISKUMS, Bruno Ziedonis
Oakville, ON

**REIFFENSTEIN, John
Christopher**
Oakville, ON

RICHARDS, Ronald Robert
Ottawa, ON

**RICHARDSON, William
George**
Guelph, ON

ROBINSON, David George
Ottawa, ON

ROERIG, Herbert Peter
Milton, ON

ROSE, Steven Vincent
Kingston, ON

RUFELDS, Carl Ernest
Fredericton, NB

SAINT, Everett Robert Russel
Victoria Harbour, ON

SCHAEFFER, Denis Matthew
Toronto, ON

SEBER, Maximilian Nicholas
Etobicoke, ON

SEIDEN, Jerzy
North York, ON

SHEW, Eugene Sow York
Ottawa, ON

SIMON, Theo
Fredericton, NB

**SIMPSON, Thomas James
William**
Cornwall, ON

SINDEN, David Brian
Ottawa, ON

SMITAS, Leo Eugen
Burlington, ON

SNEDDEN, William Robert
Carleton Place, ON

SOBKOW, Michael John
London, ON

SORBARA, Girolamo
Hamilton, ON

STRATHDEE, Barry Anderson
Burlington, ON

TALNARIU, Ernest Traian
Whitby, ON

THOMPSON, Douglas Wayne
Kingston, ON

THORNTON, Nadeszda
North York, ON

TOMSON, Richard Bruce
Kelowna, BC

TONEGUZZO, Joseph Paul
Etobicoke, ON

TURNER, John Brian
Peterborough, ON

**VAN HEESWIJK, Richardus
Gijsbertus**
Guelph, ON

**VILLENEUVE, Josee Marie
Julie**
Île Bizard, QC

VOZZA, Luigi
Sarnia, ON

WEIR, Robert Ormsby
Thornhill, ON

WESTERN, Donald Frederic
Simpsonville, SC

WHITEHEAD, Roger Wayne
Etobicoke, ON

WIELGUS, Edward
Etobicoke, ON

WILLIAMS, John Fenton
Mississauga, ON

WIRSIG, Ralph
Perth Road, ON

WITECKI, Andrew Achilles
Brampton, ON

WOLFF, Victor Cornel
North York, ON

WONG, Chau-Sheung Richa
Brampton, ON

YOUNGS, Charles Kenneth
Port Dover, ON

YU, Sun Ning
Mississauga, ON

**ZIADA, Samir Refaat Abd
Rabou**
Hange, ON

ZUCCHET, Norris Thomas Paul
Toronto, ON

OPEA CALL FOR NOMINATIONS

Nominations are being accepted for the 2019 Ontario Professional Engineers Awards (OPEA).

Now in their 72nd year, the OPEAs showcase Ontario professional engineers who have made outstanding contributions to their profession and community. Nominate an exceptional engineer or team of engineers who have led a successful engineering project. OPEA recipients are honoured annually in November at a black-tie gala hosted jointly by the Ontario Society of Professional Engineers and Professional Engineers Ontario.



THE AWARDS

GOLD MEDAL

The premier award, the Gold Medal recognizes commitment to public service, technical excellence and outstanding professional leadership.

ENGINEERING PROJECT OR ACHIEVEMENT AWARD

This award recognizes a team of engineers who have conceived of, designed and executed an outstanding project or achievement that has had a significant, positive impact on society, industry or engineering.

CITIZENSHIP AWARD

Those who earn this award have given freely of their time, professional experience and engineering expertise—to the benefit of humanity.

ENGINEERING MEDAL

The Engineering Medal recognizes professional engineers who have improved our quality of life through the ingenious application of their engineering skills, and whose achievements rise significantly above the normally high standards of the profession. It can be awarded in the categories of:

Engineering Excellence

Recognizes overall excellence in the practice of engineering, where the innovative application of engineering knowledge and principles has solved a unique problem, led to advanced products, or produced exceptional results

Management

Awarded for managing and directing engineering projects or enterprises, where innovative management practice has contributed significantly to the overall excellence of the engineering achievement

Research and Development

Awarded for using new knowledge in developing useful, novel applications or advancing engineering knowledge or applied science, or discovering or extending any of the engineering or natural sciences

Entrepreneurship

Awarded for applying new technologies or innovative approaches that have enabled new companies to get started, and/or assisted established companies to grow in new directions

Young Engineer

Awarded to outstanding young Ontario engineers who have made exceptional achievements in their chosen fields. Candidates must be no older than 35 as of December 31 in the year the nomination is submitted and have demonstrated excellence in their careers as well as in community and professional participation

ELIGIBILITY

More information about the awards, including selection criteria and nomination forms, is available at www.peo.on.ca, or by email at awards@peo.on.ca.

THE DEADLINE

Nominations are due by 4 p.m. EST on **Wednesday, February 27, 2019.**

THE IMPORTANCE OF VOTING IN COUNCIL ELECTIONS

By Ray Linseman, P.Eng.

Under the *Professional Engineers Act* (PEA), the principal object of PEO is to regulate the practice of professional engineering and to govern its members so the public interest is served and protected.

Under the PEA, Council is the governing body and board of directors of PEO. For PEO to effectively regulate the profession, it must have a strong and effective Council. This requires members to take the time to annually review the election material and to vote.

Consider this: In February 2010, Council passed a resolution that “each year, Council would select the PEO president to be the chair of Council from among the elected membership of Council.” This procedural change stemmed from recommendations from the Executive Committee after its review of PEO’s governance structure.

Further implementation details were laid out during the November and December 2010 Council meetings, and the first appointment of president was to take place immediately following PEO’s 2013 Annual General Meeting. However, in February 2011, Council ultimately decided to hold a series of town hall meetings with members to discuss the issue before enshrining anything into regulation.

At the town halls, many attendees felt the members should elect the president, forcing a referendum in conjunction with the balloting for the 2012 Council elections. The vote was 74 per cent in favour of direct election. The outcome corresponded with the survey carried out in July and August 2010, in which 57 per cent of members supported “the status quo, where members annually elect the president-elect and one vice president.” In that survey, members were able to provide comments, and the subsequent report it generated consisted of over 100 pages. One of several main points to come out of that survey was members felt that, with the limited material available, it was difficult to make an informed decision on how to vote.

ALL-CANDIDATES WEBCASTS

To address this issue, in January 2012, live all-candidates webcasts were started, with members submitting questions in advance of the webcasts. The webcasts were professionally recorded and made available to the members on PEO’s website shortly after the live event. For the 2019 PEO Council elections, live webcasts will take place the week of January 7.

Typically, webcasts take place each evening, with the regional councillor candidates first, then councillor-at-large candidates, followed by candidates for the positions of vice president and president-elect. Questions can be submitted for consideration, typically the week before the webcasts, with voting by the members to determine the selected questions.



For the last two years, webcast timelines of the recorded webcasts have been created and shared with PEO’s various chapters. The timeline allows a member to be selective in watching only portions of a webcast if, for example, they are only interested in the candidate’s position on a particular topic or if they only want to watch the opening and closing remarks of some of the candidates. An example of a timeline can be found on the Thousand Islands website: Go to www.thousandislands.peo.on.ca and click on 2018 Council Elections, then scroll down to “MSExcels versions” and select one of the options (e.g. councillor-at-large webcast).

MAINTAINING SELF-REGULATING STATUS

Several candidates running for Council have expressed concerns about losing our self-regulating status, given what has happened in Quebec and British Columbia. And, alarmingly, voter turnout has averaged 13 per cent over the last five years; for a professional organization, this is a low number and does not support our self-regulating status.

We’re working to encourage more members to vote. If you have feedback on the process, we’d like to know:

1. How long have you been a member?
2. Are you aware of the all-candidates webcasts?
3. Have you ever watched one or more webcasts? If so, did you find it beneficial?
4. Are you aware that each candidate has a half-page statement in the January/February issue of *Engineering Dimensions*? If so, do you read the statements?
5. Are you aware that there are three email blasts from the candidates during the election campaign?
6. Do you wait until after the three email blasts from the candidates before voting?
7. Did you find the all-candidates webcast timeline helpful?
8. Would having a short video (about two minutes) from each candidate on the PEO website be helpful?
9. Would you support reducing the voting period to the last week of the campaign?

Please send us your answers and any feedback to ThousandIslandsmail@peo.on.ca. [e](#)

Ray Linseman, P.Eng., is past chair of PEO’s Thousand Islands Chapter.

COUNCIL TO MOVE FORWARD WITH EXTERNAL REGULATORY REVIEW

By Nicole Axworthy

520TH MEETING, SEPTEMBER 21, 2018

At its September meeting, PEO Council approved a motion put forward by President David Brown, P.Eng., BDS, C.E.T., to move forward with an external review of PEO's regulatory performance, at a maximum cost of \$125,000. The review is to be carried out by an independent consultant to the United Kingdom-based Professional Standards Authority, who has developed expertise in assessing the practices of regulatory bodies around the world; his recommendations are expected to be received by Council in June 2019. The external review should both assist Council in identifying gaps between the association's current practices and those of other top regulators and demonstrating to the Ministry of the Attorney General that PEO is committed to regulatory excellence. President Brown pointed out that it is preferable to undertake this review voluntarily than to have it imposed by the provincial government, as has happened in other provinces.

The review is expected to commence in January 2019 and will include reviewing PEO documents, observing meetings of Council and select regulatory committees and interviewing key staff and volunteers.

REVISED 30 BY 30 TASK FORCE TERMS

Council has approved a revised version of the terms of reference and action plan for PEO's 30 by 30 Task Force, which were originally approved at the February 2, 2018, Council meeting. The 30 by 30 Task Force was created to coincide with Engineers Canada's 30 by 30 initiative, a commitment to raising the percentage of newly licensed engineers in Canada

who are women to 30 per cent by 2030, and to develop and act on a plan for PEO to help resolve the inequity.

When the original terms of reference were written, it was believed the task force would be working jointly with Ontario's engineering advocacy body, the Ontario Society of Professional Engineers (OSPE) (see *Engineering Dimensions*, November/December 2017, p. 46). Since then, it has been determined that PEO will be working on a separate but complementary action plan to the one developed by OSPE, and each organization will inform the other of their progress.

EIR PROGRAM TRANSFER

At its September meeting, Council approved transferring the ownership of PEO's Engineer-in-Residence (EIR) program to Engineers of Tomorrow, which has been managing the program as a service provider since August 2014. The EIR program, PEO's flagship education outreach program, matches professional engineers with Ontario schools to provide hands-on engineering presentations. When the EIR program service provider contract ended on July 31, 2018, Engineers of Tomorrow expressed an interest in taking over the program as an external organization rather than as a service provider to PEO.

With the motion to transfer ownership, Council also approved donating the remaining \$22,000 that was approved in the 2018 budget for the EIR program to Engineers of Tomorrow in support of the program and, as part of the motion, that PEO is willing to consider future requests for sponsorship. **e**

Our print edition is still available, but to receive it instead of the digital edition, you must change your subscription preference in PEO's online member portal.

GO TO WWW.PEO.ON.CA, log in to the portal (be sure to have your licence number handy) and change the *Engineering Dimensions* delivery method back to the print edition through the *Dimensions* tab.

IN ADDITION, you will be asked to choose your subscription preference as part of the annual renewal process.



MINING A POLITICAL CAREER

How Steven Black's engineering roots and his deep passion for a northern Ontario community led him to become mayor of Timmins, Ontario

By Marika Bigongiari



Steven Black, P.Eng., has been the mayor of Timmins, Ontario, since 2014.

When Steven Black, P.Eng., came to Timmins, Ontario, on a university co-operative assignment to round out the final year of his mining engineering degree at Queen's University, he couldn't have known he'd be mayor one day. But by the time Black completed his 12-month internship at Kidd Creek Mine in 2005, he'd accepted a full-time position at Kidd Operations and his love affair with the city had begun.

Pursuing engineering studies was a natural fit for the Oshawa, ON, native, who excelled in math and science in high school and sought a prudent career path. "An engineering career seemed like one with a lot of opportunity," Black says. Unsure of which area to specialize in, he entered a general first year in engineering at Queen's and soon settled on mining as his area of focus. At Kidd, Black eventually became a superintendent of production engineering, but his passion for the local community soon led him to join Timmins city council in 2010—when he was only 28 years old—and ultimately to become mayor in 2014.

AN ENGINEER AT THE TABLE

As an engineer with a background in mining, Black has a unique perspective to offer at the bargaining table. "It makes discussions with some of our community employers and partners—as well as with government, for policy issues affecting our region—easier to understand and take an active role in," Black explains. "When we go down to conferences with industry partners around the region, it's helped to be able to relate to the discussion and let them know that as a mining engineer you know what you're talking about."

Timmins is one of two northern Ontario cities (the other is Sault Ste. Marie) currently shortlisted to win Noront Resources' much-coveted \$1-billion ferrochrome smelter. Noront, a Canadian-based mining company with a vision to work in partnership with northern Ontario communities, boasts the largest land position in the Ring of Fire—an emerging multi-metals camp in the James Bay Lowlands of northern Ontario—and either ownership or a controlling interest in all major discoveries to date in the region. Four northern Ontario cities submitted bids for the project, and Black has been an active member on the proposal from the beginning. "It's a project that definitely has a lot of interest in our community," Black says. He and his team have worked tirelessly to convince Noront that Timmins is the right place and that it not only has the support of the community but has the infrastructure and site required. "I think it's a fantastic opportunity for Timmins," he says. "When you look at the project they're proposing and the resources they're talking about in terms of longevity—considering a deposit that could be around for a hundred years—and you're talking hundreds of jobs, that's a significant impact for any community, and Timmins is no different. The backbone of our economy has always been the natural resources industry—forestry and mining—and having that next generation of operations that will sustain us through the next hundred years is a key aspect of our future, especially as some older operations wind down."

MEETING CHALLENGES

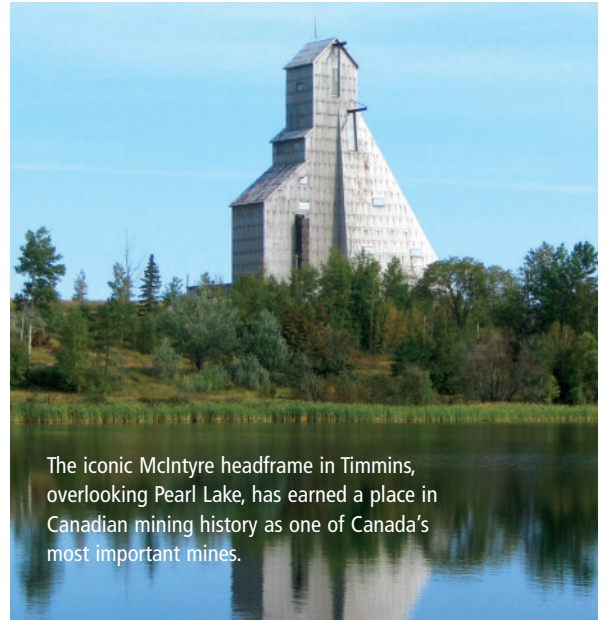
Black's love for Timmins and the people within it is clear. He has his finger on the pulse of the city and what it needs to meet the challenges many northern Ontario communities face. Jobs and the economy are important for any community, and Black outlines how the city is working to attract new industry and business to support residents and ensure there's gainful employment in the area. He's mindful of the challenges surrounding the lack of services and infrastructure that face many communities in the north. "When you look at infrastructure in the north—whether it be broadband (see p. 41), natural gas, highways and roads—when you get into smaller rural communities, there's definitely an issue with services. When you look up the coast into the indigenous communities (see p. 35), there's an even bigger issue with access to those services," he explains.

Black offers the example of a \$120-million highway reconstruction project in Timmins—a provincial highway that was subsequently downloaded to the municipality—that has yet to be completed. "That's one of our significant challenges: trying to work with the government to get some funding to complete that—because there's no way the municipality can fund the reconstruction on its own," he says. "Infrastructure in the north is a challenge, and when you have declining populations, it's hard to make progress in those areas, unless you have willing provincial and federal partners."

Also of concern are some serious social issues that afflict the region surrounding addiction and mental health. "It's not just a



An aerial view of Timmins, where Steven Black lives



The iconic McIntyre headframe in Timmins, overlooking Pearl Lake, has earned a place in Canadian mining history as one of Canada's most important mines.

northern Ontario issue, but one affecting all of Ontario and our country," Black says. "We need to see some serious action plans and partnerships with the upper levels of government to address these issues in all our communities. It's a sad topic to discuss, and I don't think many people fully appreciate how large the issue is across the province. But it's going to be a growing concern going forward."

Fully cognizant of the issues, Black says the city's answer has been to focus on quality of life—something Timmins is uniquely positioned to offer: "Population decline is one of the most challenging things facing almost all of northern Ontario. In southern Ontario, you have the reverse, where some cities are growing so fast they can't keep up with service demands. In northern Ontario it's a little different, so we're trying to look at unique ways to make the community more attractive and focus on recreational infrastructure, festivals and events to retain and attract people to our community. We've really tried to put an emphasis on quality of life and the enjoyment of the community for residents, as well as continuing to focus on bringing in new jobs and diversifying the economy."

A PASSION FOR COMMUNITY

Black's passion for showcasing all Timmins has to offer is clear. A sportsman himself, he expounds the virtues of the city's easy access to a wide array of outdoor recreational activities. Taking that a step further, the city has devised a strategic plan for the community, which led to a feasibility schedule for a new recreation centre. "We've completed geotechnical studies and we've just finished the detailed engineering design for it," Black says. He's enthusiastic about what it would mean for the community to have such a facility, which would include a new aquatic centre, various indoor

sporting courts and a track. He's optimistic that between the provincial and federal government there will soon be funding opportunities to allow the project to go forward.

To that end, and with an eye towards attracting new blood, the city has also put a big emphasis on festivals and events. "We just finished celebrating the 10th anniversary of our great Canadian Kayak Festival, which is a completely free festival," Black says. "We also have Rock on the River Festival, which is organized by a local non-profit group. We have snow-cross races in winter. And then we have our big summer festival, Stars and Thunder, an eight-day international music and fireworks competition. So, we've really tried to provide the region with a lot of unique opportunities to come out and enjoy themselves and bring new people to the area...There's a lot of opportunity in northern Ontario. And we think the more we bring people to the region through some of these events, the more exposure we'll get and that will attract some new people to the region. It's been a pleasure and honour to serve the people of Timmins on the municipal council over the last eight years, and I'm optimistic and looking forward to continuing some of the great work we've started." **e**

SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act*, R.S.O. 1990, c. P.28; and in the matter of a complaint regarding the conduct of WALDEMAR M. WIDLA, P.ENG., a member of the Association of Professional Engineers of Ontario, and FULTON ENGINEERED SPECIALTIES INC., a holder of a certificate of authorization.

The panel of the Discipline Committee met to hear this matter on the 6th of June 2018 at the offices of the Association of Professional Engineers of Ontario at Toronto.

At the hearing, counsel for the association, the member Waldemar M. Widla (Widla) and FULTON ENGINEERED SPECIALTIES INC (FESI), the holder of the certificate of authorization, submitted an Agreed Statement of Facts, including an admission by Widla and FESI that they were guilty of professional misconduct under section 28(2)(b) of the act.

The panel conducted a plea enquiry and was satisfied that Widla's and FESI's admissions were voluntary, informed and unequivocal.

THE ALLEGATIONS

The Statement of Allegations against Widla and FESI, as stated in the Statement of Allegations referred by the Complaints Committee, was dated September 20, 2017.

SUMMARY OF AGREED STATEMENT OF FACTS

1. The respondent Widla is a professional engineer licensed pursuant to the *Professional Engineers Act* (the act). Widla has little to no training or experience in the field of structural engineering.
2. The respondent FESI is an Ontario corporation. At all material times, FESI held a certificate of authorization (C of A) and Widla was the individual taking responsibility for engineering services provided under the C of A. According to the C of A, FESI's business operations included the design and fabrication of custom pressure vessels and heat exchangers.
3. FESI was the tenant/occupant of a building located at 13908 Hurontario, Road in Caledon (the building) from before 2010 to on or about January 5, 2016.
4. In or about 2010, Sino-Can Energy (Sino-Can) entered into an agreement with 952496 Ontario Inc. (952), the owner of the building, to install a solar panel array on the roof of the building. At that time, 952 was wholly or partly owned by Widla.
5. Under the agreement with 952, Sino-Can obtained a building permit for the solar panel project, hired Arash Niaki & Associates Ltd. to do the structural design, looked after re-roofing the building, and also looked after providing and installing the solar panel racks on the exterior of the roof of the building.
6. FESI was responsible for providing and installing the attachment plates for pull-out force that were supposed to be bolted on the underside of the roof from the inside of the building in accordance with the structural design done by Arash Niaki & Associates Ltd.
7. The building was sold by 952 in a private sale to Armando Tallarico (Tallarico) in or about May 2014.
8. In or about August 2015, Tallarico sold the building to the complainant, Sam Boumitry (Boumitry).
9. In or about September 2015, Tallarico notified Widla that the building permit obtained by Sino-Can remained outstanding. The Town of Caledon's inspector, Frank Marra (Marra), advised Widla that the town required a letter from a professional engineer confirming that the work required to be done was done in accordance with the structural drawings.
10. Widla signed and sealed a letter from FESI to Marra dated September 14, 2015 (the letter), regarding Permit BA/10/563, stating:

ENFORCEMENT HOTLINE Please report any person or company you suspect is practising engineering illegally or illegally using engineering titles. Call the PEO enforcement hotline at 416-224-1100, ext. 1444 or 800-339-3716, ext. 1444. Or email enforcement@peo.on.ca. Through the *Professional Engineers Act*, Professional Engineers Ontario governs licence and certificate holders and regulates professional engineering in Ontario to serve and protect the public.

We are the contractor who modified the roof structure at the subject property with respect to the subject Permit #. The details of the work to be performed were specified on engineering drawing SE-1 issued by Niaki & Associates Ltd. dated Aug. 13, 2010.

We hereby confirm that all work was performed by our company in full compliance with the drawing issued.

11. Widla had not inspected the work for which FESI was responsible at the time of construction of the solar panel project, nor did he inspect the inside of the roof to see if the attachment plates were actually installed at any time prior to writing the letter.
12. As a result of receiving the letter, the town closed the building permit and the sale closed.
13. In or about late September or early October 2015, Boumitry advised Widla that the work performed by FESI was not in compliance with the associated structural drawing, contrary to Widla's assertions in the letter. In fact, approximately 50 of the 100 attachment plates required by the drawings had not been installed.
14. Despite being advised that the work had not been completed as required, Widla took no steps to correct, amend or retract the letter, nor to advise the town.
15. PEO retained Daria Khachi, P.Eng., as an independent expert. He prepared a written report dated August 16, 2017 (the report). The report concluded, among other things:

The roof joist reinforcing specified on Arash Niaki & Associates Ltd.'s drawing SE-4 is necessary for the performance of the roof joists. The connecting plate locations specified on drawings SE-2 and SE-3, and the connection details specified on drawing SE-5 are critical to the performance of the W150x14 beams used to support the photovoltaic panels.

The absence of approximately 50 per cent of these connector plates will result in the overstressing of the W150x14 beams in

bending under full uplift wind loads and will also create excessive deflections of the members.

It was noted that approximately 50 per cent of these connector plates had not been installed. It is not clear as to which plates were missing—connector plates at the ends of the W150x14 beam span or in the middle of the beam span, or two missing connector plates adjacent to each other. Missing connector plates at the ends of the W150x14 beams will result in a cantilever length of approximately 19 feet. Under full wind loading conditions, the W150x14 beams with a 19 ft cantilever will be overstressed in bending by over 330 per cent and their deflections will be extreme to a point of damaging the photovoltaic panels. Missing connector plates in the middle span of the W150x14 beams will result in a longer than anticipated span of approximately 38 feet (assuming no two adjacent connectors are missing, thus increasing the span even further). Under full wind loading conditions, the W150x14 beams with a 38 ft span will be overstressed in bending by 100 per cent and their deflections will exceed the recommended allowable deflections by over 280 per cent.

The missing connection plates noted above will not distribute the wind uplift reactions to the supporting roof joists below. Instead, the adjacent connection points will receive greater reaction forces, which affects the design of the supporting roof joists. Depending on the location of the missing connection plates, the supporting roof joists may or may not be overstressed.

Based on my review of the details noted on Arash Niaki & Associates Ltd.'s drawings, failure to provide these details are critical and a potential risk to public safety. As these deficiencies are a building code violation and a potential risk to public safety, a proper installation review would be expected of a reasonable and prudent practitioner.

16. Widla and FESI accepted as correct the findings, opinions and conclusions contained in the report. Widla and FESI admitted that they failed to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances.
17. By reason of the aforesaid, the parties agreed that the respondents, Widla, and FESI, are guilty of professional misconduct under section 28(2)(b) of the act, by reason of:
 - a. Signing and sealing a letter to a building official that failed to meet the standard of a reasonable and prudent practitioner, amounting to professional misconduct as defined by section 72(2)(a) of Regulation 941;
 - b. Signing and sealing a letter to a building official that failed to make reasonable provision for the safeguarding of life, health or property of a person who may be affected by the work, amounting to professional misconduct as defined by section 72(2)(b) of Regulation 941;

- c. Failing to correct an incorrect certification of the completeness of structural work that he knew or ought to have known was not complete, thereby endangering the welfare of the public, amounting to professional misconduct as defined by section 72(2)(c) of Regulation 941; and
- d. Signing and sealing a letter to a building official that was prepared in an unprofessional manner, amounting to professional misconduct as defined by section 72(2)(j) of Regulation 941.

The respondents had independent legal advice, or had the opportunity to obtain independent legal advice, with respect to their agreement as to the facts, as set out above.

PENALTY

The parties submitted a written Joint Submission as to Penalty and association counsel provided oral submissions as to the appropriateness of the Joint Submission as to Penalty. In support of the penalty agreement, counsel for the association referred to two previous decisions: *Association of Professional Engineers of Ontario v. Bruce D. Crozier, P.Eng.* and *Association of Professional Engineers of Ontario v. Jiri Krupka, P.Eng.*

In both cases, the penalties were similar to the penalty agreement before this panel, except the previous penalties had

invoked a two-month suspension of licence, rather than the one month proposed here. However, in both previous cases, the members had denied guilt and hearings took place. In the present case, the member has admitted guilt, avoiding the cost of a full hearing.

The panel was concerned whether the attachment plate deficiencies have been corrected, given the potential for impact on public safety. It was advised that corrections have been made by the current owner of the building and that public safety is now protected.

The panel accepted the Joint Submission as to Penalty and accordingly, ordered:

- a) Pursuant to s. 28(4)(f) of the act, Widla and FESI shall be reprimanded, and the fact of the reprimand shall be recorded on the register permanently;
- b) Pursuant to s. 28(4)(b) of the act, Widla's licence and FESI's certificate of authorization shall be suspended for a period of one (1) month, commencing on June 7, 2018;
- c) Pursuant to sections 28(4)(i) and 28(5) of the act, the finding and order of the Discipline Committee shall be published in summary form in PEO's official publication, with reference to names;
- d) Pursuant to s. 28(4)(d) of the act, it shall be a term or condition on Widla's licence that he shall, within fourteen (14) months of the date of the Discipline Committee's decision, successfully complete PEO's professional practice examination (PPE);
- e) Pursuant to s. 28(4)(b) and (k) of the act, in the event Widla does not successfully complete the PPE within the time set out above, his licence shall be suspended pending successful completion of the examination; and
- f) There shall be no order as to costs.

The panel concluded that the proposed penalty is reasonable and in the public interest. Widla has co-operated with the association and, by agreeing to the facts and proposed penalty, has accepted responsibility for his actions and has avoided unnecessary expense to the association. There was no apprehension that Widla intended to practice structural engineering in future and thus no reason to place a limitation on his professional licence in this regard. The panel considered that the two previous DIC decisions referred by counsel for the association were similar to the current matter and provide reasonable guidance with respect to penalty. In the present case, a suspension of one month rather than two is reasonable given the cooperation given by the member in this case.

The Decision and Reasons was signed on July 5, 2018, by the panel chair, Albert Sweetnam, P.Eng., on behalf of the panel, which included Michael Chan, P.Eng., Robert Willson, P.Eng., Lew Lederman, QC, and William Walker, P.Eng.

SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act, R.S.O. 1990, c. P.28*; and in the matter of a complaint regarding the conduct of a member of the Association of Professional Engineers of Ontario and a holder of a certificate of authorization.

The panel of the Discipline Committee met to hear this matter on the 19th of July, 2018 at the offices of the Association of Professional Engineers of Ontario at Toronto.

At the hearing, counsel for the association, the member and the holder of the certificate of authorization, submitted an Agreed Statement of Facts, including an admission by the member and the holder of the certificate of authorization that they were guilty of professional misconduct under section 28(2)(b) of the act.

The panel conducted a plea enquiry and was satisfied that the member's and the holder of the certificate of authorization's admissions were voluntary, informed and unequivocal.

THE ALLEGATIONS

The Statement of Allegations against the member and the holder of the certificate of authorization, as referred by the Complaints Committee, was dated December 14, 2017.

SUMMARY OF AGREED STATEMENT OF FACTS

1. The respondent is a professional engineer licensed under the *Professional Engineers Act* (the act). The respondent is the president and the engineer taking responsibility for the professional engineering services provided by the respondent, who holds a certificate of authorization under the act.
2. In the summer of 2015, the respondents were retained by a vendor to provide heating/cooling load calculations for a solarium that the vendor had been retained to construct for the complainant. The original plan was for the exterior wall of the complainant's home to be removed so that the solarium would be continuous with the interior of the house.
3. The member signed and sealed the heating/cooling load calculations on August 24, 2015 (the original calculations). The original calculations were submitted to the city as part of the permit process, and the city relied upon them in granting the permit. The original calculations erroneously used R-40 values for the solarium's glass ceiling. The correct value for all the glass was R-4. The original calculations called for a minimum of 39,404 BTU/HR for cooling.
4. The complainant decided to retain the home's original exterior wall, and to have the solarium built as a separate (attached) structure. No new building permit was required, and no new calculations were done. After the solarium was built, the complainant complained to the city about, among other things, significant underperformance of the HVAC unit, including excessive heat gain in the solarium.
5. In the context of the city's review of the complaint, the member provided new load calculations to justify the design as built (the revised calculations), under cover of a letter dated June 30, 2016, in which he stated, among other things:
 - That he "reviewed" the calculations, which had been done by his CET.
 - That "all factors used in calculating solar gain are reasonable."
 - That "there is no ceiling consideration in the detached sunroom. It was considered in the extension."
 - That "the load calculations are reasonable and the design is in compliance with the OBC."
6. The revised calculations assigned an R-4 value to the glass. However, the revised calculations included significantly lower (incorrect) cooling factors and did not account for some of the surface area of the solarium structure, including the ceiling. The revised calculations called for a minimum of only 15,487 BTU/HR for cooling, even though the dimensions of the solarium remained unchanged. This value matched the capacity of the unit that was installed by Florian.
7. The city wrote to the complainant on or about July 4, 2016, to advise her that the matter would be closed based on the explanations that had been provided by the member. The complainant filed her complaint in August 2016.
8. A copy of the complaint was provided to the member. In his initial response to the complaint dated September 8, 2016, the member asserted that the complaint concerning the respondents' work was "totally groundless."

9. PEO subsequently retained an independent engineer (the expert) to review and comment on the calculations submitted by the respondents. The expert concluded that both the original and the revised calculations contained significant errors. Among other things, the respondents had miscalculated the surface areas of the solarium structure and used incorrect cooling load factors. The expert concluded, among other things, that “by miscalculating the surface areas of the structure and using incorrect cooling load factors,” the respondents had not met the standard expected of a reasonable practitioner under the circumstances.
10. The expert’s report was provided to the member. In his response to the expert’s report, the member finally admitted that the revised calculations had overlooked a significant solar gain, with the result that the cooling load was underestimated. The member attributed the error to his CET, and stated that he had not checked his CET’s work before stamping the revised calculations, contrary to his assertions to the city in the June 30, 2106 letter referred to above.
11. In an email to the investigator dated May 29, 2017, the member stated that he contacted the homeowner to offer to come to the site to “inspect the situation.” He further stated that the solution:

“will involve installing a larger, 3-ton cooling unit to replace the 11/2 ton. This cost will most likely be absorbed by my technician as he was the one who made the error. It will be a lesson for him.”
12. The respondents admit that:
 - a) The original and the revised calculations were inaccurate and/or inappropriately calculated, in that they:
 - (i) reflected errors, omissions or deficiencies that a reasonable and prudent practitioner would not be expected to make; and
 - (ii) failed to meet the standards of practice; and further admit that
 - b) The member signed and sealed the heating/cooling calculations prepared by his CET, without checking them, and failed to take reasonable steps to verify the accuracy and/or appropriateness of the heating/cooling design plans, including the original and/or revised calculations, even after the issue was drawn to his attention, and the accuracy and/or appropriateness of those plans and/or calculations was being questioned.
13. By reason of the aforesaid, the parties agree that the respondents are guilty of professional misconduct under section 28(2)(b) of the act by reason of:
 - a) engaging in an act(s) or an omission(s) in the carrying out of the work of a practitioner that constitutes a failure to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances, amounting to “negligence” and, as such, engaging in professional misconduct as defined in s. 72(2)(a) of Ontario Regulation 941; and
 - b) signing or sealing a final drawing, specification, plan, report or other document not actually prepared or checked by the member and, as such, engaging in professional misconduct as defined in s. 72(2)(e) of Ontario Regulation 941.

The respondents stated that they had independent legal advice, or had the opportunity to obtain independent legal advice, with respect to their agreement as to the facts.

PENALTY

The parties submitted a written Joint Submission as to Penalty and association counsel provided oral submissions as to the appropriateness of the Joint Submission as to Penalty. In support of the penalty agreement, counsel for the association referred to two previous decisions: *Association of Professional Engineers of Ontario v. A Member* (March/April 2004 edition of *Engineering Dimensions*) and *Association of Professional Engineers of Ontario v. A Member* (March/April 2007 edition of *Engineering Dimensions*).

In both cases, the panels of the Discipline Committee considered various factors, including absence of subsequent incidents of misconduct and the member’s admissions and co-operation with the association and determined that both matters should be published without reference to names.

The panel accepted the Joint Submission as to Penalty, and accordingly, ordered:

- a) Pursuant to s. 28(4)(f) of the act, the respondents shall be reprimanded, and the fact of the reprimand shall be recorded on the register for a period of one (1) year;
- b) Pursuant to sections 28(4)(i) and 28(5) of the act, the finding and order of the Discipline Committee shall be published in summary form in PEO's official publication, without reference to names;
- c) Pursuant to s. 28(4)(d) of the act, it shall be a term or condition on the member's licence that he shall, within fourteen (14) months of the date of the Discipline Committee's decision, successfully complete PEO's professional practice examination (PPE);
- d) Pursuant to s. 28(4)(b) and (k) of the act, in the event the member does not successfully complete the PPE within the time set out above, his licence shall be suspended for a period of ten (10) months, or until he successfully completes the PPE, whichever comes first; and
- e) There shall be no order as to costs.

Although the panel had some concern with clause (b) of the Joint Submission as to Penalty that requires the publishing of the finding and order without reference to names, the panel acknowledges that this is a possibility that is provided for in the act, and that the panel's discretion to interfere with a joint submission on penalty is limited.

The panel concluded that the proposed penalty is reasonable and in the public interest. The member has co-operated with the association and, by agreeing to the facts and proposed penalty, has

accepted responsibility for his actions and has avoided unnecessary expense to the association. There was no apprehension that the member lacked technical competence or posed a danger to the public. The panel considered the two previous discipline decisions referred by counsel for the association, and found that they provide reasonable guidance with respect to penalty.

The Decision and Reasons was signed on August 28, 2018, by the panel chair, Albert Sweetnam, P.Eng., on behalf of the panel, which included Michael Chan, P.Eng., David Germain, JD, Kamal Elguidi, P.Eng., and Warren Turnbull, P.Eng.

FORMER PROFESSIONAL ENGINEER FOUND GUILTY OF USING PROFESSIONAL ENGINEER'S SEAL

On May 24, 2018, in Ottawa, Udo Boehme plead guilty to three counts of breaching the *Professional Engineers Act* by using an engineer's seal and the title professional engineer.

Licensed by Professional Engineers Ontario (PEO) in 1985, Mr. Boehme's licence was cancelled in 2007 and was not reinstated.

The matter came to PEO's attention when a building official received letters bearing Mr. Boehme's seal stating that he had reviewed and approved the structural elements of model homes. In the course of review by the city, it was found that Boehme was not licensed as a professional engineer and Boehme was reported to PEO.

His Worship Justice of the Peace Herb Kreling, of the Ontario Court of Justice in Ottawa, sentenced Boehme to a two-year period of probation.

Nick Hambleton, associate counsel, regulatory compliance, represented PEO in this matter. PEO thanks the Ottawa building department for their diligence and co-operation in its investigation.

DISCIPLINE COMMITTEE ACCEPTS REQUEST FOR WITHDRAWAL OF ALLEGATIONS

On January 22, 2018, a panel of the Discipline Committee granted a motion, brought on consent, to withdraw allegations against a member. The motion arose in the following circumstances:

- a) There had been extensive discussions between counsel for the parties, culminating in an agreement under which the member agreed to take specific steps to ameliorate the concerns underlying the allegations—in return, PEO agreed to withdraw the allegations, subject to Complaints Committee approval;
- b) Complaints Committee approved the agreement; and
- c) the complainant was notified, and did not object to the withdrawal of the allegations pursuant to the agreement.

The panel was satisfied that it had jurisdiction to hear the motion under sections 4 and 4.1 of the *Statutory Powers Procedure Act*, and that, in all the circumstances, the public interest was served by granting the motion. The panel requested that the profession be notified of the outcome of this motion.

NOTICE OF LICENCE SUSPENSION, SOTIROS KATSOULAKOS, P.ENG.

On June 8, 2018, Sotiros Katsoulakos' professional engineering licence was suspended pursuant to a February 7, 2017, order of the Discipline Committee. The order was issued following a finding of professional misconduct against Katsoulakos at a discipline hearing held on that date. Katsoulakos' licence was suspended because he failed to write and pass PEO's 98-CIV-B1 Exam (Advanced Structural Analysis), and 98-CIV-B2 Exam (Advanced Structural Design) within the 16-month timeframe prescribed by the Discipline Committee.

NOTICE OF LICENCE SUSPENSION, JOHNNY KIN NANG LEE, P.ENG.

On May 27, 2018, Johnny Kin Nang Lee's professional engineering licence was suspended pursuant to a March 27, 2017, order of the Discipline Committee. The order was issued following a finding of professional misconduct against Lee at a discipline hearing held on that date. Lee's licence was suspended because he failed to write and pass PEO's professional practice examination within the 14-month timeframe prescribed by the Discipline Committee.

NOTICE OF LICENCE SUSPENSION, GHOLAM-REZA SEKHAVATI, P.ENG.

On Sept. 25, 2018, Gholamreza Sekhavati's professional engineering licence was suspended pursuant to a July 24, 2017, order of the Discipline Committee. The order was issued following a finding of professional misconduct against Sekhavati at a discipline hearing held on that date. Sekhavati's licence was suspended because he failed to write and pass PEO's Advanced Structural Analysis (16-CIV-B1) and Advanced Structural Design (16-CIV-B2) examinations within the 14-month timeframe prescribed by the Discipline Committee.

PEO PUBLICATIONS AND RESOURCES

Professional Engineers Ontario has a number of resources, including practice bulletins, brochures, learning modules and fact sheets, available for free on its website at www.peo.on.ca/index.php?ci_id=1797&la_id=1. The following regulatory documents and practice guidelines are available in PDF form on PEO's website. To order a hard copy, please contact PEO at 416-224-1100, or fill out the publications order form at www.peo.on.ca/index.php/ci_id/22618/la_id/1.htm.

REGULATORY DOCUMENTS

- The *Professional Engineers Act*, R.S.O. 1990, Chapter P.28
- Ontario Regulation 260/08
- Ontario Regulation 941/90
- By-Law No. 1

PRACTICE GUIDELINES

General—Engineer

- Assuming Responsibility and Supervising Engineering Work Guideline (2018)
- Conducting a Practice Review (2014)
- Guideline on Human Rights in Professional Practice (2009)
- Professional Engineering Practice (2017)
- Professional Engineers Reviewing Work Prepared by Another Professional Engineer (2011)

Use of seal

- Use of Professional Engineer's Seal (2008)

Legal/Discipline

- Guideline on Forensic Engineering Investigations (2016)
- Making a Complaint: A Public Information Guide (2011)
- The Professional Engineer as an Expert Witness (2011)

Fees/Contractual

- Letter to Purchasers/Clients and Letter to Engineers
- Selection of Engineering Services (1998)

Fee Schedule Committee

- Agreement for Professional Consulting Services—Between the Prime Consultant and the Sub-consultant (1993)
- Professional Engineers Acting as Contract Employees (2001)
- Professional Engineers Acting as Independent Contractors (2001)
- Professional Engineers Providing Project Management Services (1991)
- Use of Agreements between Engineer and Client for Professional Engineering Services

Communications

- Professional Engineers Providing Communication Services (1993)

Construction/Building

- Professional Engineers Providing Commissioning Work in Buildings (1992)
- Professional Engineers Providing General Review of Construction as Required by the Ontario Building Code (Rev. 2008)
- Professional Engineers Providing Land Development/Redevelopment Engineering Services (1994)
- Professional Engineers Providing Mechanical and Electrical Engineering Services In Buildings (1997)

- Professional Engineers Providing Professional Services in Building Projects using Manufacturer-Designed Systems and Components (1999)
- Professional Engineers Providing Services for Demolition of Buildings and Other Structures (2011)
- Professional Engineers—Temporary Works (1993)
- Structural Condition Assessments of Existing Buildings and Designated Structures (2016)
- Structural Engineering Design Services for Buildings Guideline (2016)

Transport/Roads/Municipal

- Professional Engineers Providing Services for Municipalities (Rev. 1998)
- Professional Engineers Providing Services in Transportation and Traffic Engineering (1994)
- Professional Engineers Providing Services with Respect to Road, Bridges, and Associated Facilities (1995)

Software/Computers

- Developing Software for Safety Critical Engineering Applications (2013)
- Professional Engineers Using Software-Based Engineering Tools (2011)

Mechanical/Electrical/Industrial

- Professional Engineers Providing Reports for Pre-Start Health and Safety Reviews (2001)

Geotechnical/Environmental

- Engineering Evaluation Reports For Drinking Water Systems (2014)
- Professional Engineers Providing Acoustical Engineering Services in Land-Use Planning (Rev. 1998)
- Professional Engineers Providing Geotechnical Engineering Services (1993)
- Professional Engineers Providing Reports on Mineral Properties (2002)
- Professional Engineers Providing Services in Environmental Site Assessment, Remediation and Management (1996)
- Services of the Engineer Acting Under the Drainage Act (1998)
- Solid Waste Management (2017)

National Guidelines

- Principles of Climate Change Adaptation for Engineers



PIKANGIKUM

A northern Ontario First Nations community in transition

When three engineers learned of the tragic story of Pikangikum, a remote First Nations community near the Manitoba border, they volunteered their time and engineering services to help the community create solutions to the unique challenges of living in Ontario's vast, low-density north. **By Adam Sidsworth**

For Bob White, P.Eng., it began with the coroner's report. White, a retired engineer who has spent much of his career in consultation and risk management, teaches a mandatory two-day ethics class for engineering students at Ryerson University in Toronto, Ontario. In 2011, a student in his class mentioned to White that she had worked for then-Deputy Chief Coroner Bert Lauwers, who had recently released a report entitled *The Office of the Chief Coroner's Death Review of the Youth Suicides at the Pikangikum First Nation 2006–2008*. It's a haunting synopsis of epidemic suicide among children and teenagers—some as young as 12—in a small remote First Nations reserve in northwestern Ontario, close to the Manitoba border.

Pikangikum is accessible year-round by plane, by boat when the river is open and for a few months in the winter by ice road. The community, with a population of 2300, is young, with 75 per cent under the age of 25. It is located on the shores of Pikangikum Lake at Berens River, about 100 kilometres north of Red Lake, ON. Until this month, it has had no access to Ontario's power grid, instead relying on a decades-old diesel generator to power the whole town. This limited the community's ability to build new houses, resulting in families of 20 living in two- and three-bedroom houses. And, although the community has a water treatment plant and watermains, most houses lack access to indoor water, so families are forced to collect what they need from a water distribution centre. To make matters worse, the community was, until September 17, on a long-term boil water advisory.

Lauwers' report paints a picture of a community in crisis, caught between tragically ill-thought-of 19th-century government policies, conceived within a cloak of colonialism and expansionism and a desire for a 21st-century quality of life. Focusing on 16 youth suicides between 2006 and 2008, Lauwers notes: "The themes that emerged from a review of the circumstances of the deaths and the lives of the youth was not a story of capitulation to death, but rather, a story of stamina, endurance, tolerance and resiliency stretched beyond human limits until finally, they simply could take no more." Of the 16 suicides that Lauwers looked at in this two-year period, he noted:

- They were all between the ages of 12 and 18;
- All were by hanging;
- They happened in clusters (for example, three deaths in five days in January 2006);
- None of the youth had sought help from a trained professional in the month leading up to their deaths;

- Substance and domestic abuse were common in the youths' families;
- Many of the children were solvent abusers; and
- Over half the youth had had exposure to suicide in their families.

Most alarming, Lauwers cited statistics sourced from *The Canadian Press* stating that in 2000, Pikangikum's suicide rate was 36 times the national average, meaning that if a city of three million people shared this suicide rate, it would have had over 14,000 deaths by suicide that year.

A FOCUS ON SELF-RELIANCE

White, who identifies as Kitpu First Nation, grew up in Cape Breton, Nova Scotia, before coming to Ontario to earn his civil engineering degree from the University of Toronto. Although White never applied for his Indian status, he felt a great deal of compassion for the plight of the people of Pikangikum. One winter, when he was a child in Cape Breton, his family's house burned down, and they moved to a house with no indoor washroom. It was -50 C outside. "You don't want to be getting up [to use the outhouse]," White says. "Imagine how many times your mother and father have to get up during the night. Somebody has to take that galvanized bucket out in the morning and dump it in the outhouse."

White felt compelled to act and wanted to bring his background in international consultation in governance and risk management to help Pikangikum. "I would work with people in developing projects funded by the Commonwealth Secretariat or World Bank," White notes, "and I would come back to Canada and figure out how we would engage and mobilize the industry in that country to be more ethical and build capacity. All my projects would last for years. I would go to Brazil and meet with the government and say, 'You pick 10 consultants, and I'll train them.' And I would go in regularly to observe the changes in the company or government agency." White decided he would use the same focus on self-reliance when he founded the non-profit Pikangikum First Nation Working Group.

The focus on self-reliance is an ideology shared by Indigenous Services Canada (ISC), the federal department responsible for delivering infrastructure and social services to indigenous communities across the country, including Pikangikum. ISC acknowledges that the First Nations infrastructure deficit may be as high as \$30 billion; housing, water, health facilities, roads and broadband (see "The digital divide," p. 41) are critical areas that need to be developed. And although it admits there were 91 long-term drinking water advisories in indigenous communities in January 2018, ISC remains committed to lifting all advisories by March 2021 and has allocated \$173 million over the next three years to help accelerate the progress.

ISC is interested in "co-developing distinctions-based housing strategies [with] First Nations, Metis Nation and Inuit." After the National Indigenous Economic Development Board—led by First Nations, Metis and Inuit business and community leaders—stated that closing the productivity gap in economic outcomes between indigenous peoples and the rest of Canada would raise the GDP \$28 billion annually, ISC Minister Jane Philpott became a champion of public-private partnerships, with indigenous Canadians in leading roles.

It is an approach also championed by the Canadian Council for Public-Private Partnerships (CC3P), which asserts that the federal



Two kids play in the front yard of a house in Pikangikum, where two young girls, recent victims of suicide, were buried.

government has not prioritized infrastructure investments on First Nations reserves very far into the future. The partnership model was created to help build infrastructure faster, deliver better value for money, increase competition and expertise and deliver high-quality infrastructure to indigenous communities that desperately lack resources. This, CC3P notes, is crucial for First Nations communities, citing the Assembly of First Nations (AFN) assertion that indigenous communities' capital expenditures across the country were underfunded by between \$169 to \$189 million.

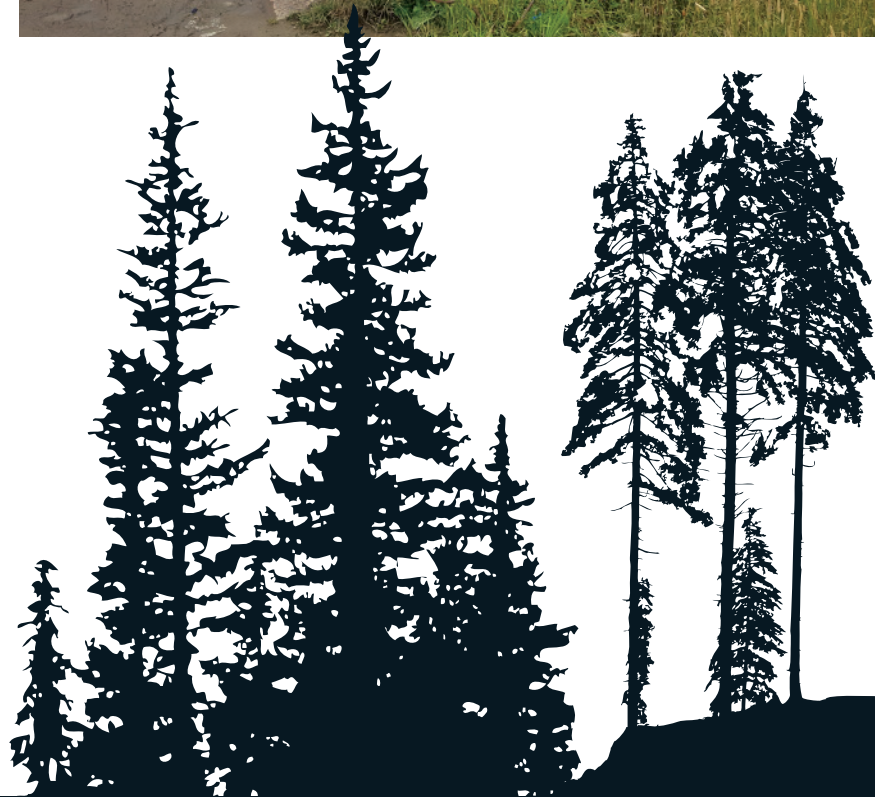
Irving LeBlanc, P.Eng., was one of the first people White contacted when he began his efforts to help the people of Pikangikum. LeBlanc is the director of housing, infrastructure and emergency services for AFN and previously worked as a project engineer for the Ontario First Nations Technical Services Corporation, which provides technical and advisory services to many of Ontario's First Nations communities to help foster technical self-reliance. LeBlanc first met White in 2009, when they were part of a water expert meeting. "Two billion people around the world don't have access to clean water, and a small portion of that is in Canada," LeBlanc notes.

LeBlanc is careful distinguishing his volunteer efforts with the Pikangikum First Nation Working Group and his advocacy role with AFN, which has given LeBlanc permission to work at Pikangikum. In his role as advocate, LeBlanc compared First Nations communities from both northern and southern Ontario: "There's a difference, but not by much. Even in Six Nations (near Brantford, ON), the big communities, only the core of that community has distributed water. When you get out to the town lines, [they're] on cisterns. Once you step on a reserve, it's a whole different world."

But LeBlanc is quick to point out that First Nations communities in northern Ontario have unique challenges, notably no access to the power grid, the communities' remoteness and climate



A standpipe, where people of Pikangikum must collect their water for all purposes and in all weather.





One of the retrofitted homes, complete with a kitchen sink, which local youth installed, made possible with the help of the Pikangikum First Nation Working Group.



change. They rely on hydrocarbon generators that are maxed out in the winter, partially due to age; the winter roads aren't lasting as long as they once were; and when communities run out of fuel in August, they have to fly it in at huge costs. "The cost of food up there is extraordinary. If you can't afford the bottle of juice, you go for pop. And not being able to drink the water!" LeBlanc notes. "My unit [at AFN] is focusing on a strategy that will identify housing needs. Right now, we're not getting sufficient money to address the severe overcrowding. Same with water; we're advocating for better water regulations. At the same time, we don't want to put First Nations in jeopardy by putting regulations on them that they can't meet."

The Ontario Clean Water Agency (OCWA) can attest to the challenges of delivering safe drinkable water to Ontario's First Nations communities. The provincial agency has partnered with over 50 First Nations communities to deliver, support, engineer and plan for delivery of safe, clean water services. "We provide ongoing support as needed throughout our partnership," says OCWA Vice President of Operations Richard Junkin. "We have a significant municipal operational presence across the province, with many facilities and operational teams in close proximity to the majority of Ontario First Nations communities."

Junkin observes that there are additional challenges to providing safe water to remote communities: "The challenging nature of source water in the north, combined with high electricity costs, can make solution options that are tested and recommended for facilities in southern Ontario unsuitable for northern climates," he says. "In many cases, there are often more effective—and more locally sustainable—treatment options available that will provide clean, safe water. OCWA looks at each community's individual needs...It's essential to create a balance between new technologies and standard treatment alternatives to protect public health and the environment, regardless of location." The remote northern locations are often challenged by lack of staff and lack of ease of access; however, OCWA recently partnered with two First Nations organizations to install remote monitoring systems that enable real-time, offsite monitoring. The response has been positive, and OCWA may expand it to other communities in the future.

Interestingly, OCWA has worked with Pikangikum in the past, notably in 2007, when the community's school burned down, severing two watermains and causing a potential crisis at the community's

treatment plant. OCWA partnered with Pikangikums to repair the watermains, restore the system integrity and disinfect the water plant. They then tested the distribution system. "Working side by side in partnership with this community over a period of time, what came through very loud and clear to our staff was the overall pride and resiliency of the people of Pikangikum, especially after the loss of a crucial meeting space," Junkin says.

WORKING TOGETHER

David Steeves, P.Eng., was the third engineer to join the Pikangikum First Nation Working Group. Reflecting on Pikangikum, Steeves observes: "You have a generation of youth growing up in a net world, and they see what kids have in southern Ontario and wonder, 'I'm Canadian, why don't I have toilets and showers and houses with more than one room for privacy?' You can see here how infrastructure issues can contribute to mental health issues. They feel left out. What we're trying to do in our own way is break the circle of despair. We're showing them they're loved by other Canadians, such as those in other parts of Ontario. Hopefully we'll help this community become self-sufficient."

Steeves is retired from IBM, where he began as a silicon designer and eventually rose to senior management. For the last seven years, he has spent much of his time teaching science, technology, engineering and math (STEM) at an inner-city school in Toronto, ON, and doing mostly pro bono consulting work, including developing business plans and fundraising strategies for non-profit organizations. In fact, White jokingly refers to Steeves as the bag man because of the money he's raised for the Pikangikum project.

Steeves often travels to Pikangikum using his own airplane and brings people and supplies with him. He's observed first-hand the lack of infra-



Ontario engineers who created the Pikangikum First Nation Working Group (from left to right): David Steeves, P.Eng., Bob White P.Eng., and Irving LeBlanc, P.Eng.

structure in Pikangikum. “We ran into power issues because, like most reserves, they weren’t on the power grid [at the time]. They were on generators that were running at 105 per cent capacity.” To accent this fact, Steeves notes that when they began retrofitting houses with water pumps, they couldn’t run because of the lack of power. “My background is electrical engineering from Waterloo, so I was able to determine that we could save [enough] power through switching to LED lights,” Steeves explains. “We received 3000 bulbs—donated by Siemens—and had the youth install them.”

White and Steeves split responsibility based on their respective strengths, with Steeves focusing on fundraising and White organizing a collection of non-profit social organizations, businesses and Toronto-area faith communities to mobilize their efforts to bring real change to Pikangikum. In the first phase of the project, completed in September 2014, they retrofitted 10 homes with a water and wastewater system, complete with 650-gallon holding tanks; and in the second phase, completed in September 2017, another 10 homes were retrofitted, this time with 1200-gallon holding tanks, thus reducing the need of emptying the tanks from three times a week to once a week.

“[We’re] three engineers who understand a project and what needs to be done. The main project is retrofitting the homes that don’t have running hot and cold water,” LeBlanc observes.

White adds: “[The government said it would be] roughly \$200,000 per house. You can build a new house for that. [They] didn’t give any options; it just gave a cost, \$80 million [for the entire community]. The government looked at that, and there was no option, there was no ‘This is the Cadillac option, and this is the Volkswagen option.’ So the government rejected [it].” White notes that they initially partnered with Frontiers Foundations—a non-profit organization that no longer operates—which was able to refurbish each house for just \$20,000. Frontiers also asked for an additional \$80,000 to train people from Pikangikum to work on the houses. The community’s leadership was involved in the process, choosing the houses to be retrofitted. “They picked the most vulnerable households,” White says. “In one, there were 11 people, and the elder had no legs due to diabetes, and her daughter had only one. And their toilet was outside.”

Working with the chief and council, the group’s achievements so far include:

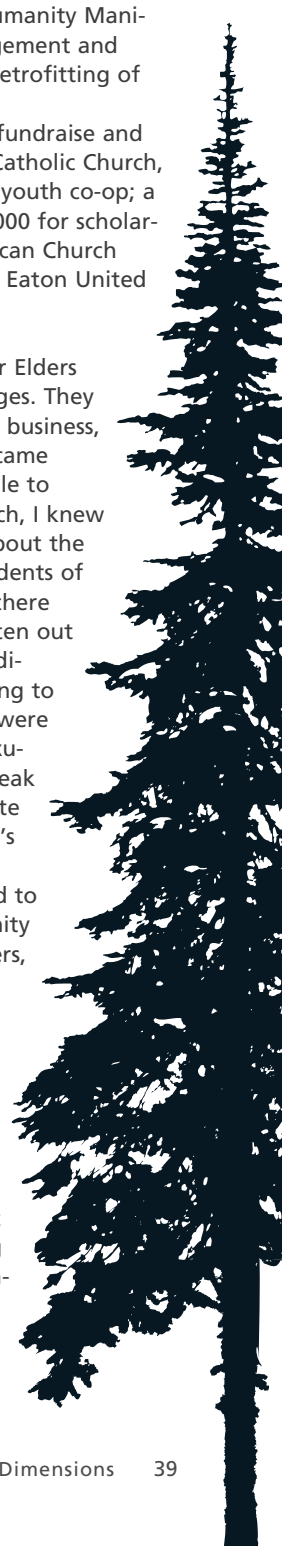
- Designing a self-contained water system, including a pump, bathroom and kitchen

fixtures, heater, 1200-gallon cistern and holding tanks, and providing running water for 50 houses;

- Providing a portable saw mill for a youth lumber co-operative project to generate income—this included successfully negotiating with Pikangikum’s White Feather Elders to agree to allow the youth to develop their own successful business;
- Purchasing chainsaws and safety equipment and training for Pikangikum’s youth, who have contracts to supply lumber and firewood;
- Partnering with Habitat for Humanity Manitoba to provide project management and training to local youth in the retrofitting of many of the houses; and
- Working with faith groups to fundraise and donate money, including the Catholic Church, which donated \$100,000 for a youth co-op; a Muslim temple that raised \$5,000 for scholarships; \$100,000 from the Anglican Church and \$50,000 from the Timothy Eaton United Church in Toronto, ON.

Working with the White Feather Elders was a challenge, White acknowledges. They had initially refused to support the business, partially out of a resentment that came from frustration. But White was able to put it in perspective: “In my research, I knew you needed four elders to speak about the spirits. Most of the elders were students of the residential schools. They were there for 15 years. Their culture was beaten out of them. They were called ‘dirty Indians.’ They were told they were going to become white and Christian. They were abused physically, mentally and sexually. It took a toll. They couldn’t speak about their spiritual outlook.” White thinks this may explain Pikangikum’s weariness to speak with outsiders. (*Engineering Dimensions* attempted to reach out to Pikangikum’s community members, including council members, but was unable to make contact.)

The ability of indigenous communities to determine and advance their economic and social prosperity is on the mind of ISC Minister Jane Philpott. “I think [infrastructure and economic development] are absolutely tied together with things like the right to self-determination and working respectively with First Nations communities, who have the solutions and have the vision of what they would like to see in their com-





Bob White, P.Eng. (top row, third from left), and David Steeves, P.Eng. (top row, second from right), with the Pikangikum chief and council.

munities," Philpott told *Engineering Dimensions*. Philpott is cognizant of the efforts of White, Steeves, LeBlanc and the Pikangikum community, and praised them: "There are huge infrastructure gaps in First Nations communities, and when we see that other partners want to work with these communities, we think these are good outcomes."

Philpott was in Pikangikum earlier this year with Prime Minister Justin Trudeau and met with Chief Dean Owen. Owen spoke to them about the overcrowding in many houses, including a woman on the council who was living with over 20 other people in a two- or three-bedroom house. "They had to sleep in shifts, and this is not uncommon in some of these communities," Philpott says. "Pikangikum, in particular, has had real challenges because of the infrastructure; a large number of the houses don't have indoor toilets or showers, so there is a tremendous amount that needs to be done to address these gaps and ensure these Canadians have a good quality of life."

Philpott is committed to using a public-private partnership where possible and cites Pikangikum's connection to the power grid this month by Wataynikaneyap (Watay) Power, a public-private partnership that is 51 per cent owned by 22 First Nations communities in northwestern Ontario, including Pikangikum; and 49 per cent owned by utility company Fortis Ontario. The federal government donated \$1.6 billion for the project, and 15 additional communities are scheduled to be connected by late 2020.

Noting the environmental savings of 16 communities phasing out their dependence on diesel fuel, Philpott notes that the economic self-reliability that comes with the grid is essential. "The economic gaps that have existed are deep in cause, but one of the challenges is the opportunity for economic prosperity," Philpott says. "Already at the start it's 51 per cent First Nations owned, with the eventual goal that it'll be 100 per cent owned. I think this is a fantastic model that will be used by many others."

Representatives from Watay Power and Fortis were unavailable for comment, but Watay Power's website (www.wataypower.ca) has an informative video about the opportunities that the connection to the grid should bring. In it, Watay Chair Margaret Kenequanash, who is also the executive director of Shibogama First Nations Council, states: "It will change the landscape and pave the way of how we do business with everyone in Ontario and Canada. Our communities want to invest in business opportunities for the coming generation." The video also shows the overcrowding in houses, stemming from the fact that diesel generators can power only a finite number of buildings.

Reflecting on the trio's work in Pikangikum, Steeves remained humble about the role engineers can play in Ontario's First Nations communities: "It was just by chance that we're P.Engs," he notes. "This is like no other engineering issue, so we were able to identify the stakeholder and develop a solution with partners and community leaders." There are lots of working opportunities for engineers in indigenous communities, Steeves further observes. "Next to immigration, indigenous peoples are the fastest-growing group in Canada, so the private sector, working with the communities, may find this a high-growth area of opportunity, including education and training. I feel what the government is attempting to do is develop partnerships with other organizations, given that government can't do it all. Although our primary focus is on water and sewage systems, there are many other major infrastructure issues to be addressed." Steeves says that many licensed engineers may want to take advantage of the new Indigenous Homes Innovation Challenge, launched this fall by ISC and Infrastructure Canada to help fund creative indigenous-led home and community innovations projects.

But Minister Philpott remains cautious: "There are business opportunities, but I would want to emphasize that you have to focus on the rights and expectations of the communities to speak for themselves and not have outsiders speak their ideas, so if people work in general partnership and operate together, there can be real success. We know that in the past, there have been Aboriginal communities that have been exploited for profits, so I wouldn't want the profits to be the driving factor for why people are getting involved. But what's good for indigenous peoples is good for the economic good for the country. Ignoring the social and economic gaps is detrimental to all Canadians. If you want to help with the economic disadvantages, the significance can be important."

The Pikangikum Working Group may be the model for the future. e



THE DIGITAL DIVIDE

ALTHOUGH MOST ONTARIANS take for granted the ease with which we can do almost anything online, there are technological gaps with far-reaching consequences for remote communities in northern Ontario that still don't have access to the internet. Implementing the infrastructure within the vast, rugged landscape of the north requires the ingenuity of engineers who are doing the planning.

By Marika Bigongiari



Most Ontarians reading this likely only think about their internet connection when there's a problem: when it's slow or—even more panic inducing—it disappears altogether. For most, being disconnected is a temporary annoyance: maybe your battery died on the train or the hydro went out, or you forgot your phone at home. Most of us can use the internet to complete a seemingly endless array of tasks ranging from the mundane to the critical. We can check the status of medical tests, for example, or take a course or earn a degree without leaving home. We can converse with a friend or colleague on the other side of the world, pay a bill, borrow a book, go shopping, find the nearest coffee shop or check the weather forecast without thinking much about how we're able to do any of that. The internet is ubiquitous, and using it is second nature. Often, when Ontarians in urban centres arrive at their destination, the first question is not "Where's the wash-room?" but "What's the Wi-Fi password?"

WHY IT MATTERS

The term "digital divide" has been used to describe social and economic inequalities that exist between those who have access to information and communication technologies, particularly broadband, and those who do not—and the impact of these technological gaps has far-reaching consequences for the communities that continue to go without.

The level of connectivity many of us take for granted is not the reality for every Ontarian, at least not yet. While northern Ontario has a landmass that represents most of the province, it only has a small fraction of its population, and both factors have complicated the expansion of broadband into the region. Like most remote rural communities, much of northern Ontario faces unique challenges when it comes to putting infrastructure in place, whether we're talking about roads and highways, natural gas or telecommunica-

tions—and broadband is no different. In urban centres, where residents generally have a 100 per cent connectivity rate, it's more about the level of service: that is, how fast can it be and how much bandwidth can one get. In the remotest parts of the province, it's about access; in other words, has it been implemented. Period.

If you're part of the percentage that does not have access to broadband, you're at a disadvantage. If you're cut off from the digital economy, the lack of access can be a hindrance to economic development and make businesses less competitive. How can a business be innovative or adopt modern technologies if its finger isn't on the digital pulse of the world?

With Ring of Fire development opportunities at stake in the mineral-rich region and northern Ontario communities working hard to retain and attract new and growing businesses, access to broadband is critical. Connection is a two-way street: If the north is going to attract—and keep—new residents and business, they need to both see and be seen. And, in a world where being on the internet means being connected, the lack of broadband further isolates already physically-isolated communities. While some may argue the opposite is true, being online can play a role in contributing to quality of life in the form of social networking, connecting with friends and family, entertainment and simply feeling connected to the rest of the world. The ramifications for mental health are real, along with skills development and economic opportunity.

Tori-Lea White, P.Eng., a geographical access network manager who works for Bell Canada, and lives near Parry Sound, ON, is familiar with the service gaps that often come with the territory. "I live in Kearney, Ontario, which has a population of about 800," White says. "Just as an example, natural gas is not available at all in Kearney. Even those who live in the urban centres of northern Ontario would experience gaps in certain types of services. Working at Bell, and living in a small town, I'm often asked when new services will be coming to the area or told about certain areas where telecommunications services could be expanded."

For White, who works out of Huntsville, ON, getting broadband implemented in the region is a big part of her job. She's responsible for the planning of fibre network infrastructure in a region that includes Simcoe County and the Muskoka and Parry Sound district, focusing on a three-to five-year strategic plan, and ensuring the fibre network is ready to handle any expansion of broadband services, both residential or commercial, throughout her territory: "I am responsible for ensuring we have sufficient capacity in our fibre network to meet the needs of future developments—new subdivisions, new businesses, etc.—as well as assisting with maintaining and enhancing our existing networks, both copper and fibre," White says. "I also work with Bell Mobility to plan new tower and cell site locations, including remote cell sites that are not linked by fibre today. I work very closely with our implementation teams who do the more detailed design work and build the networks."

MEETING THE CHALLENGES

The work is not without its challenges. Northern Ontario is home to an incredibly diverse, rugged landscape, and when it comes to running cable through numerous bodies of water and large expanses of solid rock, the geography

itself is a hindrance. There can also be a lack of incentive for internet service providers to put broadband infrastructure in place in remote areas due to the prohibitive costs associated with battling rough terrain to serve a disperse populace. When considering these factors, federal and provincial funding programs become especially critical.

"There are always significant challenges in deploying new network infrastructure in vast rural areas of the country from both investment and construction perspectives, and certainly into northern Ontario specifically," White explains. And when it comes to tackling the landscape, the ingenuity of engineers doing the planning is critical. "There are different degrees of remoteness that are fairly unique to northern Ontario," she continues. "Even though we're all on the Canadian shield, the geography across the region changes quite drastically. Here in Muskoka/Parry Sound, where there is a lot of water, we tend to place more submarine cable than in other parts of the province. And when we do come out of the water, there is a lot of rock, so we tend to place a lot of aerial cables on pole lines rather than bury the cables like we do in urban centres and less rocky parts of northern Ontario. In areas further north, we have

THERE ARE ALWAYS SIGNIFICANT CHALLENGES IN DEPLOYING NEW NETWORK INFRASTRUCTURE IN VAST RURAL AREAS OF THE COUNTRY FROM BOTH INVESTMENT AND CONSTRUCTION PERSPECTIVES, AND CERTAINLY INTO NORTHERN ONTARIO SPECIFICALLY

—Tori-Lea White, P.Eng.

very remote communities—places you can't drive to—where they use ice roads in the winter and supplies are flown in or brought in by train. Trying to build a fibre network to reach places like this is particularly challenging, and Bell and other companies have employed innovative construction techniques and types of machinery to bring fibre and broadband services to these communities."

White explains how, in urban areas, utilities tend to be buried within the city's road allowance, either in a concrete-encased duct structure with manholes, pulled through an incidental duct, or buried directly in the ground. In rocky terrain, cables are more often strung on pole lines. "Much of Bell's facilities in northern Ontario are on aerial structures, either sharing poles with the local hydro utility or alone on Bell-owned structures," White says. The terrain further dictates how those poles are installed, depending on the size required and how accessible the location is to machinery.

Placing cables in water may seem like a much simpler operation but there are other factors to consider, like determining if the water is on public or private property and obtaining any necessary easements. Boat traffic and weather must also be considered. "Propellers can damage cables, so it's important to stay away from boat launches, docks and marinas," White explains. "Ice can also damage cable, so extra protection is needed at the shoreline, especially if the

cable enters the water on bald rock." Bell must also adhere to the instructions of the ministries and governmental groups from which they need permission before they can place cables in any body of water. "We receive a window of time when we're allowed to place cable based on fish spawning seasons—usually July to September in this area," she continues. "We must take care not to damage any spawning grounds or disturb fish habitat. Assessments are sometimes required by biologists who will provide other requirements. Submarine cable isn't always the optimal solution, but when this type of installation is required, you have to ensure you are protecting the environment, minimizing the effect the construction will have on the ecosystem and building a network that will be maintainable for years to come."

These and other factors make implementing broadband in northern Ontario not only challenging, but quite different from what one would see in more urban installations. In areas too remote for physical cable, other technologies must be used to bridge the gap. "Many of these remote communities are serviced by radio technology," White says. "Although there are copper cables throughout the community itself, the link back to other communities is by radio or microwave transmission. There is no existing pole line to follow when bringing fibre to these communities—just a large expanse of beautiful wilderness to try to plan and build a fibre network through." And, once service has been established, quality and reliability can be an issue. "There are challenges presented by the technology itself," White says. "All telecommunications services are distance-limited to some extent. Copper line transmission degrades over distance, and although fibre cables can certainly go much farther, they too have distance limitations, as do wireless options. We always try to find the best technology to optimize network infrastructure in a particular area."





STRIDES ARE BEING MADE WITH BROADBAND IMPLEMENTATION IN NORTHERN ONTARIO DUE TO NUMEROUS GOVERNMENT-FUNDED INITIATIVES, PRIVATE SECTOR EFFORTS AND THE TECHNICAL KNOW-HOW OF INTERNET SERVICE PROVIDERS ON THE GROUND

KEY PARTNERSHIPS

Strides are being made with broadband implementation in northern Ontario due to numerous government-funded initiatives, private sector efforts and the technical know-how of internet service providers on the ground—key partners working together to bridge the divide. And it's a long game: "These are huge undertakings that take years to build," White points out.

All levels of government agree broadband is an essential service that should be available to all Ontarians no matter where they live. Connect to Innovate is a federal program that aims to promote innovation and enable Canadians in every region of the country to participate fully in the digital economy by providing remote and underserved communities with internet access. With plans to invest \$500 million by 2021 to bring high-speed internet to 300 rural and remote communities in Canada, the plan—which was introduced as part of the 2016 budget—recognizes the challenges these communities face with respect to geography and population and how this presents barriers to private sector investment. The program focuses on building the digital backbone of high-speed internet networks—the main arteries carrying the enormous volumes of data essential for schools, hospitals, libraries and businesses to function in a global digital world.

The provincial government is also onboard. In a statement to *Engineering Dimensions*, Minister of Infrastructure and Communities Françoise-Philippe Champagne says: "I recognize that broadband connectivity supports jobs and economic growth in Ontario's communities. I also understand the challenges in rural and remote communities when it comes to getting connected. We are looking at Ontario's current broadband landscape to identify gaps and will work with municipalities and the private sector to support the expansion of broadband infrastructure to our rural and remote communities." Champagne points out that the Northern Ontario Heritage Fund (NOHFC) includes cellular/broadband expansion as an eligible category within its Strategic Economic Infrastructure Program. Under that program, NOHFC has been able to extend basic broadband to 97 per cent of northern Ontario. The most recent NOHFC investment is anticipated to connect 40,000 more homes with

high-capacity broadband. It is estimated that 93 per cent of homes will be connected to high-capacity broadband once existing projects are completed. Additionally, the NOHFC has helped to connect 26 First Nations communities in the far north through approximately 2000 kilometres of high-speed fibre-optic cable.

In recognition of its importance, in 2016, the Canadian Radio-Television and Telecommunications Commission (CRTC) declared broadband internet access and mobile wireless service are basic telecommunications services that should be available to all Canadians. Further to that declaration, in September, the CRTC announced a \$750-million fund aimed at improving broadband internet access services in underserved areas such as parts of northern Ontario. In its first five years, the Broadband Fund will support projects to build or upgrade infrastructure to provide fixed and mobile wireless broadband internet service to underserved Canadians. It is designed to complement existing and future private investments and public funding and aims to close the gap in connectivity between rural and urban areas. The CRTC set a target that Canadians should have access to speeds of at least 50 mega bits per second (Mbps) for downloads and 10 Mbps for uploads, as well as access to mobile wireless services, including when traveling on major transportation roads—because it's only fair that all Ontarians be able to grumble about bandwidth speed. [e](#)



MINUTES OF THE 96TH ANNUAL BUSINESS MEETING

SATURDAY, APRIL 21, 2018

PRESIDENT AND CHAIR: BOB DONY, PHD, P.ENG., FIEE, FEC

The 96th Annual General Meeting of Professional Engineers Ontario was held at the Westin Harbour Castle Hotel, Toronto, Ontario, on Saturday April 21, 2018.

President Bob Dony advised that PEO was webcasting the business meeting to increase the accessibility of PEO information to more members, no matter where they are located.

The president thanked the participants and attendees of Friday's Volunteer Leadership Conference. He then acknowledged the 13 inductees into PEO's Order of Honour, as well as the President and Sterling Award recipients, all of whom were honoured during a gala ceremony the prior evening.

President Dony announced that the keynote speaker during the AGM luncheon would be Mark Abbott, executive director, Engineering Change Lab; and that the 518th meeting of PEO Council would be held following the luncheon. The president invited delegates of the AGM to participate in social media conversations using #PEOAGM.

CALL TO ORDER

The president advised that because proper notice for the meeting had been published in *Engineering Dimensions*, as provided for under section 20(i) of By-Law No. 1, and because a quorum was present, the meeting was officially called to order.

INTRODUCTION OF COUNCIL

The president introduced the members of the 2017–2018 PEO Council:

David Brown, P.Eng., BDS, C.E.T., president-elect; George Comrie, P.Eng., CMC, past president; Regional Councillors Ishwar Bhatia, M.Eng., P.Eng., and Guy Boone, P.Eng. (Eastern Region), Thomas Chong, MSc, P.Eng., FEC, PMP, and Noubar Takesian, P.Eng., FEC, BScME, GSC (East Central Region), Michael Wesa, P.Eng., and Dan Preley, P.Eng., who was unable to attend (Northern Region), Lola Hidalgo, P.Eng., PMP, and Gary Houghton, BEng, P.Eng., FEC, who was unable to attend (Western Region), Danny Chui, P.Eng., and Warren Turnbull, P.Eng. (West Central Region); vice president (elected) Nancy Hill; vice president (appointed) Marilyn Spink; Councillors-at-Large Christian Bellini, P.Eng., FEC, Roydon Fraser, PhD, P.Eng., and Kelly Reid, P.Eng., IACCM CCMP; Lieutenant Governor-in-Council Appointees (LGA) Michael Chan, P.Eng., Lorne Cutler, MBA, P.Eng., Tim Kirkby, BEng,

P.Eng., FEC, who was unable to attend; Qadira Jackson Kouakou, barrister and solicitor; Lew Lederman, QC, Tomiwa Olukiyesi, P.Eng., and Nadine Rush, C.E.T., and himself as chair. President Dony also introduced Interim Registrar Johnny Zuccon, P.Eng., FEC.

PEO's directors to Engineers Canada for 2017–2018 are: Annette Bergeron, P.Eng., FEC, David Brown, Danny Chui, Chris Roney, P.Eng., BDS, FEC, and Rakesh Shreewastav, P.Eng., AVS, FEC.

ORDER OF BUSINESS

President Dony welcomed the special guests attending the meeting and introduced representatives from provincial and national engineering associations from across the country:

- Gerard McDonald, P.Eng., CEO, and Annette Bergeron, MBA, P.Eng., FEC, president-elect, Engineers Canada;
- Bob McDonald, executive director and registrar, and Stormy Holmes, president-elect, Association of Professional Engineers and Geoscientists of Saskatchewan; and
- Len White, CEO and registrar, and Rosalie Hanlon, outreach officer, Engineers Nova Scotia.

He also welcomed representatives of PEO's partners in the Ontario engineering community and allied professions:

- Jonathan Hack, president and chair, and Sandro Perruzza, CEO, Ontario Society of Professional Engineers (OSPE);
- Jane Welsh, president, and Aina Budrevics, executive director, Ontario Association of Landscape Architects;
- Kathleen Kurtin, senior vice president and treasurer, Ontario Association of Architects;
- Marisa Sterling, president and chair, Ontario Professional Engineers Foundation for Education;
- Bruce Matthews, CEO, Consulting Engineers of Ontario;
- Boris Martin, CEO, Engineers Without Borders Canada;
- David Thomson, CEO, and Greg Miller, president, Ontario Association of Certified Engineering Technicians and Technologists (OACETT); and
- Andrew Cook, president, Engineering Student Societies' Council of Ontario.

IN MEMORIAM

The president asked all present to stand for a moment of silence in remembrance of those PEO members who had passed away in 2017.

ADOPTION OF MINUTES

President Dony referred members to the minutes of the 2017 AGM.

It was moved by Thomas Chong and seconded by Roger Jones, P.Eng., that the minutes of the 2017 AGM, as published in the November/December 2017 issue of *Engineering Dimensions* and as distributed at the meeting, be adopted.

Motion carried

BUSINESS ARISING FROM THE MINUTES

The president reviewed the actions taken by Council on submissions discussed at the 2017 AGM. Members made two submissions to the meeting, both of which were passed.

The first submission requested that PEO engage an external governance expert to advise Council independently on how to modernize the governance of the organization to ensure self-regulatory status and that the principles of the new governance model be presented to Council for approval before the next AGM.

Since the last AGM, Council has made the following decisions on this submission:

1. That Council directs the registrar to immediately issue a call for volunteers for appointment to a seven-member Phase 1 Governance Working Group for Council approval at a future date, comprised of the following:
 - Four current councillors with at least one lay LGA, plus three additional members at large; with preference for members at large who have formalized governance education;
2. That Council directs the Council chair to develop terms of reference for the phase 1–working group;
3. That Council directs the working group to provide to Council prior to or shortly thereafter the 2019 AGM a progress report, which will include timing for delivery of their final report to Council;
4. That Council approves a budget of \$40,000 for the working group to complete their work and deliver a report to Council by the 2020 AGM; and
5. At the March 23, 2018, meeting, Council appointed members to the Phase 1 Governance Working Group.

The second submission requested that PEO expand the Financial Credit Program to include legally recognized refugee international engineering graduates.

Since the last AGM, Council directed the Licensing Committee to expand its review of the Engineering Intern Financial Credit Program to include the issue of refugee international graduates in their review.

FINANCIAL REPORT

The president then referred members to the auditors' report and financial statements, which were published to PEO's website prior to the meeting. They were distributed as part of the meeting registration package and will be printed in the May/June 2018 issue of *Engineering Dimensions*. He advised that an abbreviated version of the statements appear in the 2017 Annual Review, which was included in the registration package as well as being available on the publications table.

He also noted the *Questions and Answers on PEO Operations* booklet, which addressed common questions on PEO operations, was included in the registration package.

With no questions from the floor regarding the financial statements, it was moved by Rob Willson, P.Eng., and seconded by Noubar Takessian that the financial statements, as presented, be received.

Motion carried

APPOINTMENT OF AUDITORS

President Dony advised that the Audit Committee recommended the firm of Deloitte LLP be reappointed.

It was moved by Thomas Chong, seconded by Alourdes Sully, P.Eng., that the firm of Deloitte LLP be appointed auditors of the association for the 2018 financial year.

Motion carried

Responding to queries, President Dony advised that the annual cost for the auditor is approximately \$42,000 and the selection of an auditing firm is done on a five-year RFP cycle.

REGISTRAR'S REPORT

Interim Registrar Zuccon stated that during his time at PEO, he could not recall such a close finish in the financials with revenues almost equal to the expenses. The \$26k deficit includes \$35k in Council discretionary expenses. Although the revenues were down significantly from budget, there was an increase of nearly \$700k from the 2016 figures. Similarly, the expenditures were significantly less than budgeted, but \$1.1M higher than 2016.

Contributing to this increase were:

- The approved increase salaries and benefits costs (\$480k);
- Unforeseen increase in legal costs for prosecution, tribunals and corporate (\$299k);
- A cost overage in the APTIFY database launch (\$127k);
- The added costs associated with external hosting of the ethics module for the Practice Evaluation and Knowledge (PEAK) program, additional monies for the 70th anniversary Ontario Professional Engineers Awards event and added task forces (\$163k); and
- Advertising costs (\$49k).

These items totalled \$1.118M.

PEO's cash reserves were up \$1.16M from 2016 (cash and marketable securities).

Interim Registrar Zuccon advised that more detailed information was included in the registrar's financial report as well as the operations Q&A booklet, both of which were included in the delegate package.

Interim Registrar Zuccon discussed the yearly statistical information by advising that 2220 new licences were issued, compared to 1880 in 2016, an increase of 340 year over year. There was an increase of 1375 P.Engs, bringing the total to just under 82,000. The percentage of females was just over 11 per cent. There was also an increase of 799

EITs, bringing the total to 13,900. The percentage of females of the total engineering interns is just over 21 per cent.

There was an increase of 131 certificate of authorizations (C of As), including the issuance of seven C of As supported by a licensed engineering technologist limited licence. Despite an increase of nine new consulting engineer designations last year, there was a net loss of 28, which was attributable to a higher number of non-renewals. There was an increase of 30 limited licences; contributing to this increase were the issuance of 16 licensed engineering technologist limited licences (LET LL) and 14 limited engineering licences (LEL) under the regulations. Twenty-eight provisional licences were issued, one more than in 2016, and 83 temporary licences, an increase of 14 from 2016.

PEO's senior management team recently completed a review of the association's 2015–2017 Strategic Plan and confirmed that 95 of the 130 strategies have been completed. This was followed by a review of the remaining strategies to see which could be dealt with operationally and which should carry over into the new strategic plan. Strategies that will make their way into the new plan include those associated with:

- the PEAK program, now into the start of its second year with a new ethics module and the first opportunity for members to report on their continuing professional development activities;
- the public information campaign;
- the online licensing project;
- the website redesign; and
- enforcement enhancements (criteria for prioritization, training modules).

Strategies that dovetail into the operations include those related to:

- guidelines, new and/or revised;
- IT upgrades; and
- Experience Requirements Committee interview training.

At its November meeting, Council approved PEO's 2018–2020 Strategic Plan: Protect Engage Advance. Hard copies were provided in the AGM packages.

The new plan builds on the success of its predecessor and focuses on nine strategic objectives covering three priority areas:

- protecting the public interest;
- engaging stakeholders; and
- advancing PEO's mission.

Interim Registrar Zuccon indicated that staff, along with committees and task forces, are currently engaged to develop appropriate strategies to advance the nine strategic objectives. It is anticipated that a short list of strategies, including budget and resource allocations, will be provided to Council for approval as part of the 2019 PEO budget process.

Interim Registrar Zuccon extended a special thanks to all those who contributed to the plan and for those who are now assisting with developing appropriate strategies.

A significant regulatory highlight for PEO was the Ontario government's passage of Bill 177, the *Stronger, Fairer Ontario Act, 2017* as it brought about nine amendments to the *Professional Engineers Act*. Interim Registrar Zuccon reviewed the amendments that enhance the transparency of PEO's regulatory framework:

1. The removal of the requirement for elected councillors to be part of every Discipline Committee (DIC) hearing panel provides additional flexibility for the DIC chair's selection process;
2. The public registers can now be made publicly available on the PEO website and/or electronically provided;
3. The ability for members of the public to have access to Discipline Committee hearing evidence and transcripts (previously limited to only the parties); and
4. Added powers permitting the registrar to release information to other regulatory bodies, if there are reasonable grounds to believe there may be a risk of harm to any person or property or to the public welfare.

On March 31, 2017, PEO launched the PEAK program, the product of the work from two Council-appointed task forces. The program is based on the principles that the requirements for individual licence holders must be relevant to their practice and proportional to its risk to the public, and that it recognizes the diversity of practice and individual's need for continuing knowledge.

PEAK is currently designed as an annual program. All licence holders are requested to voluntarily complete the program as part of their licence renewal process. There are three elements to it: (1) practice status declaration; (2) practice evaluation questionnaire; and (3) ethics module, which is viewed online.

Although participation is not mandatory, the completion status for each of the elements is publicly noted on PEO's online directory under each licence holder's profile.

A one-year progress report with participation rates and other analysis, along with recommendations on next steps, will be brought to Council's June meeting.

Interim Registrar Zuccon reported that after one year of operation, of the 26,170 that participated, 19,958 (76 per cent) indicated they are practising (Element 1).

The questionnaire was completed by 92 per cent of the practising group (18,405) (Element 2).

The ethics module was completed by 15,774 licence holders, either practising or non-practising because that is a requirement for everyone (Element 3).

PEO has been actively communicating with licence holders to ensure they understand the program and how to participate.

PEO staff have conducted over 60 on-site presentations at chapter meetings, technical asso-

ciations, consulting firms, and other organizations employing professional engineers.

Eight PEAK-dedicated articles have been published in *Engineering Dimensions*, and a wide range of information about the program is available on the PEO website. Over 1000 licence holders have contacted the PEAK program through email and phone to ask questions and provide comments.

On April 1, year two of the program began and a new ethics module has been added. In addition, a brief survey is included for those who declare non-practising status, to assist PEO to understand more about why they consider themselves not practising.

Interim Registrar Zuccon expressed his appreciation to all of those who participated and continue to assist in this endeavour.

On November 27 attendees were honoured at PEO's Discipline Committee meeting to have Ontario's attorney general as a guest speaker, a first for PEO. The Honourable Yasir Naqvi discussed current issues facing the profession.

PEO's 11th Queen's Park Day reception was held on October 4, when PEO's 95th anniversary was celebrated. More than 40 Members of Provincial Parliament and almost 200 attendees participated, including Premier Kathleen Wynne and Attorney General Yasir Naqvi.

There was an increase in the number of enforcement files opened in 2017, from 403 to 488 files. Over 90 per cent of files opened involved unauthorized use of the engineer title or use of "engineer" or "engineering" in a business name without permission from PEO. PEO filed eight charges with Ontario courts in relation to matters. The three title violations were subsequently withdrawn, as compliance was achieved. Of the other five related to practice violations, one was successfully prosecuted in September and the remaining four are scheduled for 2018.

At Council's February 2018 meeting, the *Assuming Responsibility and Supervising Engineering Work* guideline was approved. This was originally slated to be a performance standard to address how a licence holder can assume responsibility for engineering work performed by unlicensed individuals as permitted under the *Professional Engineers Act*, section 12(3)(b), as well as the supervision required under section 17(2) for the C of A regime. The new guideline provides some best practices for those who are confronted with these situations.

The *Solid Waste Management* guideline was revised to reflect best practices in consideration of recent changes to the legislation affecting this industry.

Interim Registrar Zuccon then responded to questions as follows:

Randy Walker, P.Eng., requested clarification regarding the \$2.4 million budget for building operations, noting that the building expenditures are equal to the amount of money received from tenants. If a tenant(s) is lost, members' fees do not cover building expenses, so he asked if there was a plan to cover expenses should this occur. Interim Registrar Zuccon replied that this would be monitored through the Finance Committee. Councillor Bhatia noted that even the expenses and revenue for building operations is almost the same, the principle owing on 40 Sheppard Avenue West is being paid down by approximately \$1 million a year.

Ross Judd, P.Eng., professor emeritus, McMaster University, stating that inasmuch as engineering education is not an act of engineering in the province of Ontario, asked if he was practising or non-practising, according to PEAK. Bernard Ennis replied that those who teach engineering are considered non-practising. It was the decision of the Council-appointed task force that the act be followed in determining practising vs. non-practising.

Raymond Chokelal, P.Eng., asked about PEAK participation levels, noting that while raw numbers had been provided, it would be helpful to also have this information shown in percentage form. Interim Registrar Zuccon noted that this was a good point. As required as part of the PEAK directive from Council, a one-year report will be coming forward at the June Council meeting and, once this is done, the information will be made available on PEO's website.

Nick Mansour, P.Eng., a PEO past president, referred to solid waste management. He noted that in some communities, of which Lampton county is one, there is difficulty finding places to dispose of waste coming from factories, communities, etc. This would be a challenge for the engineering profession to find the solutions. The engineering profession should develop a committee or activity to deal with this.

Virendra Sahni, P.Eng., advised that there is some concern expressed that it just takes too long for new applicants, especially the international applicants, to have their applications processed through the system. Are there any statistics to show that, out of the new applications, how many are international students? It sometimes takes five years or more. They must be treated with respect and with due professionalism.

Interim Registrar Zuccon replied that on a broad policy level, PEO Council is aware of the situation and has taken steps to address some of the setbacks. In his view, there were no process changes that would be disrespectful to any applicant. There is an opportunity for everyone to call in to find out where their application sits at any given time. PEO is looking at an online licensing process that would help with more advanced tracking. He noted every case that is brought across his desk is looked at and a response is provided. It takes time to process the necessary information, such as approving academics, conducting an experience assessment, etc.

Wayne Kershaw, P.Eng., asked about the cuts to chapter budgets as a result of PEO's overall budget deficit and what steps have been taken other than asking chapters to reduce their funding. Interim Registrar Zuccon replied that the reduction in chapter allotments were part of the 2018 budget approved by Council in 2017. Going forward, the same process will be followed, receiving requirements from the Regional Councillors Committee through the Finance Committee for Council approval. Kershaw stated that chapter budget requests were significantly decreased insofar that some chapters only received a third of what was requested and asked what other steps

were being taken by PEO to reduce the budget. Interim Registrar Zuccon noted that the revenues for 2018 were significantly underachieving the forecasted budget. Some projects were deferred and other avenues for money savings were explored, such as less face-to-face meetings; however, there are limitations on what can be done. Kershaw noted that his concern was if chapter budgets are being reduced to a point where a chapter can no longer function, PEO is losing a communication vehicle to its members. Interim Registrar Zuccon advised that he met with the RCC in early April to review chapter allotments.

GREETINGS FROM ATTORNEY GENERAL YASIR NAQVI

A recorded greeting from the attorney general of Ontario, the Honourable Yasir Naqvi, was aired as follows:

“Thank you to Professional Engineers of Ontario for inviting me to speak to you. I am sorry that I cannot join you in person, but I am glad I can take part in some small way. Engineers have an important role to play in Ontario, from making our province a leader in technical innovation to contributing to the infrastructure that enhances a quality of life today and for the future. The engineering industry is an economic driver. Our government wants to continue seeing the engineering field thrive, which is why the recently released 2018 Ontario budget outlines investing \$132 million to support innovative post-secondary programming, part of which will increase the number of science, technology, engineering and mathematics graduates by 25 per cent. With your help, these new graduates can get the experience they need to become professional engineers. I know it takes a lot of work to hold that title and our government is committed to increasing the pathways for new graduates to get there. Our government is proud to support the important work of engineers and to collaborate with the Professional Engineers of Ontario Council to ensure safety, competitiveness and governance within the engineering community. Your trusted leader will offer sustainable solutions to make Ontario a safe place to live, play and work. As you know, March 1 marked the first Professional Engineers Day in Ontario. This is a great milestone for the industry and the first day of its kind in Canada, and while people benefit daily from your work as engineers, each year we can now recognize and truly appreciate your contributions to our communities and the economy. Thanks to your profession, Ontario is and continues to be one of the best places to live. Congratulations to last night’s winners and I wish you all a productive and enjoyable meeting.”

INTRODUCTION OF ASSOCIATION GUESTS— ENGINEERS CANADA

The president invited Engineers Canada to provide an update.

Engineers Canada President-elect Annette Bergeron congratulated outgoing President Bob Dony for a successful year. She stated that having sat in the PEO hotseat herself, she has a better appreciation than most of how challenging the president’s role can be. Engineers Canada directors attend all PEO Council meetings and President Dony met the challenge and excelled at it.

Bergeron also extended her warmest best wishes to David Brown, noting that, in his coming time as president of PEO, he will provide the same degree of leadership and dedication that he has in all his previous endeavors, such as current director of Engineers Canada.

Bergeron stated that these are pivotal times for the regulation of engineering in Canada and, by extension, for the work done by Engineers Canada in support. Much time over the past year has been spent on governance and on the Engineers Canada Strategic Planning Consultation project. The past year has brought regulators across the country together to define a more focused, purposeful shape to the work done by Engineers Canada for the regulators. She acknowledged the dozens of council members and others who had input into this process. A nationwide collaboration is no small accomplishment.

Bergeron advised that she was personally looking forward to spearheading this project to move from the realm of strategy into that of execution. At the Engineers Canada upcoming annual general meeting, it is hoped that the regulators will formally approve both the new purposes and the new strategic plan. One year from now she hopes she can come back to PEO’s annual general meeting and report on what was changed, what was improved, and the plan for the next two years.

Engineers Canada visited PEO on March 29, 2018, to determine how the work laid out in Engineers Canada’s strategic plan to support PEO as a regulator. She thanks all of those at PEO for their good work in the regulation of engineering to protect the public interest.

Engineers Canada, through its accreditation board, accredits engineering education programs across Canada. In this area, there are two strategic undertakings:

- Firstly, the Accreditation Unit (AU) Task Force, chaired by President Dony. The AU Task Force has proposed some improvements, which were presented to the board on February 28. The accreditation board will be consulting with higher education institutions and with all reg-

ulators about these recommendations through this spring;

- Secondly, the Accreditation Improvement Program was launched. It focuses on the operational improvements to accreditation.

It is hoped that these two items should make a very big difference to accreditation in Canada while fostering innovation in higher education institutions.

In the area of regulatory excellence, Engineers Canada offers its support. Whether it is providing access to national and international research and networks, working together will help position the engineering profession in Canada as world leaders in innovation and high standards.

Engineers Canada is working to help expand excellence in regulatory practices by identifying promising practices in use within Canada and introducing them to regulators across the country.

Engineers Canada also has a role to play in promoting the engineering profession, ensuring that it remains highly regarded in the eyes of government, decision makers and the public.

Engineers Canada provided expert testimony to both the House of Commons and Senate transportation committees on the transportation modernization act and recommendations to involve professional engineers in the entire life cycle of railways, and the need for climate vulnerability assessments on railways. Engineers Canada also provided expert testimony to the Senate Standing Committee on Energy, the Environment and Natural Resources on their study on the effects of transitioning to a low carbon economy, and to the House of Commons Standing Committee on the Status of Women regarding the economic security of women. These have happened due to ongoing public affairs efforts in raising the profile of the engineering profession across the federal government.

Bergeron stated that Engineers Canada is also monitoring Finance Canada's recent proposed tax changes and are involved in providing comments to Global Affairs Canada to the existing North American Free Trade Agreement Professional Services Annex as it relates to engineering services.

True leadership requires decisiveness, but it also requires knowing what's needed in a given context. So much of what has been accomplished as a board in the past few years can be attributed to a leader who both paid attention to problems that existed and then took action: Chris Roney. She noted that as he steps down as past president of Engineers Canada this May, his wisdom and tenacity should be celebrated as he has done so much

to revitalize the outlook and purpose of Engineers Canada. It was a source of pride that PEO recognized Roney's accomplishments at the 2018 Order of Honour by making him a Companion of the Order of Honour, the highest accolade that PEO bestows. Bergeron stated that, as she assumes her role as incoming president of Engineers Canada, she will be standing on the shoulders of such a giant and that she was humbled to be given the task of moving forward on his legacy.

In closing, Bergeron thanked PEO and the PEO Engineers Canada board directors for their contributions to the Engineers Canada organization. PEO is critical to its success and Engineers Canada is there to serve the regulators in promoting and maintaining the interests, honour and integrity of the Canadian engineering profession.

INTRODUCTION OF ASSOCIATION GUESTS— ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS (OSPE)

The president invited OSPE to provide an update.

OSPE President and Chair Jonathan Hack, P.Eng., expressed his appreciation for the opportunity to attend and bring greetings on behalf of the society. He stated that OSPE's mandate is to elevate the role of engineering in Ontario and to ensure the engineering profession is consulted on policy issues relating to complex science, engineering and infrastructure development. OSPE is the advocacy body for professional engineers in Ontario, and PEO is the regulatory body, working together with governments and other stakeholders on behalf of engineers in the province.

For this past year, Hack has had the pleasure of working with the PEO executive team and President Bob Dony. He has appreciated working with President Dony on the Joint Relations Committee (JRC) and establishing regular communications on important issues facing both organizations. He indicated that he also appreciated the spirit of cooperation experienced at the JRC meetings, which provided the opportunity for candid conversations about issues, and how both organizations have demonstrated a consistent desire to work together.

He believes we should, as engineers in Ontario, come together to provide input and expertise to create and real change must continue. He believes it is engineers who drive economic prosperity in Ontario by creating efficiencies, patenting inventions and perfecting new technology applications that benefit everyone.

OSPE has accomplished much over the year; in fact, 2017 saw its members lead the advocacy charge on substantive issues that affect all, such as energy policy, climate change, innovation invest-

ment, pay equity, diversity and inclusion in the engineering profession, including championing the 30 by 30 goal. OSPE was able to gain unanimous consent from all three political parties at Queen's Park for the creation of the first-ever Professional Engineers Day in Ontario on March 1. Hack noted that the successful public awareness initiatives with OSPE's "Change the World" campaign and the recent launch of the Engineering Ally program to ensure engineers are heard in the upcoming provincial election.

OSPE is able to engage in raising the profile of engineering in Ontario because engineers are getting involved. Membership numbers are increasing steadily, but more needs to be done. Technology is advancing faster than the government's ability to comprehend it so engineers must be involved in guiding the development of technology to ensure it is done in the best interests of society.

The advocacy space at Queen's Park is increasingly crowded, as other professions seek support on their key initiatives. Hack stressed the need to work together to ensure the voice of engineers is clearly heard and understood on vital issues. Although much has been accomplished in 2017, there is no room for complacency. He encouraged those in attendance to become a member of OSPE, if not already, and to get involved with its task forces or political action network.

In closing, Hack expressed his best wishes for a successful meeting and in the upcoming year and that he looked forward to continuing to work together in the months ahead.

PRESIDENT DONY'S OUTGOING REPORT

President Dony indicated that he would like to take the opportunity to provide an update on Council's work over the past year. He said that when he stood for election two years ago, he ran on the platform of "moving forward for a stronger profession" to sum up his thinking on how he wanted to focus his efforts as PEO president. As he reflected on Council's work over the past year, he thinks much was accomplished to further this goal.

President Dony noted that perhaps the biggest accomplishment over 2017 was passage of important amendments to the *Professional Engineers Act* that strengthen PEO's regulatory role.

Passed at Queen's Park on December 14, 2017, as part of the *Stronger, Fairer Ontario Act* (Bill 177), the amendments address recommendations from the Elliot Lake Commission of Inquiry.

As a result of three years of work with the Ministry of the Attorney General, the changes improve public safety protection and transpar-

ency in PEO's regulatory work and made several improvements, including:

- Broad regulation-making authority to establish a continuing professional development program for engineers;
- Changes to confirm PEO's continued oversight of suspended, cancelled and revoked licence holders;
- Powers to suspend or revoke licences where warranted by past conduct; and
- An amendment requiring licence holders' disciplinary histories to be published on the PEO website.

With the passage of Bill 177, PEO can make these changes to improve its transparency, accountability and effectiveness in regulating professional engineering.

President Dony stated that, in December, PEO introduced its new 2018–2020 Strategic Plan. Developed after two years of stakeholder consultation and approved by Council at its November meeting, the new plan focuses on nine strategic objectives covering three priority areas: protecting the public interest, engaging stakeholders and advancing PEO's mission.

The plan's strategic objectives include:

- Refining the PEAK program;
- Heightening delivery of PEO's enforcement efforts;
- Enhancing PEO's public image;
- Engaging PEO chapters as a regulatory resource;
- Increasing influence in regulatory matters;
- Augmenting the applicant and licence holder experience;
- Redefining the volunteer leadership framework;
- Creating a seamless transition from student member to EIT to licence holder; and
- Enhancing PEO's corporate culture.

The complete plan is available at www.peostratplan.ca

Now in its 96th year, PEO faces many challenges as it approaches a century of regulating the engineering profession in Ontario. The new plan will provide a guide on how PEO meets these challenges and ensures PEO is doing its utmost to fulfill its mission of advancing the practice of engineering to protect the public interest.

Turning to PEO's ongoing goal of building a more inclusive profession, more reflective of society, President Dony advised that, in September,

Council formally endorsed Engineers Canada's national 30 by 30 initiative—a commitment to raising the percentage of newly licensed female engineers in Canada to 30 per cent by 2030.

Working with OSPE, PEO committed to establishing a two-year, 30 by 30 Task Force to ensure PEO's responsibilities are appropriately assigned.

While OSPE will maintain its role as the advocacy body in this important work, PEO, as a regulator, can undertake tracking of gender-based licensure statistics to mark progress, as well as ensuring women are represented in PEO regulatory activities and leadership and volunteer opportunities.

President Dony referred to Council's work creating Council term limits and a succession-planning framework, stating that, in June, the Council Term Limits Task Force's revised recommendation for term limits and succession planning were approved.

Going forward, outgoing councillors who have reached their term limit will require a six-year hiatus before running for Council again. The limits include a maximum consecutive limit of six years on Council, as well as a one-term lifetime limit for the president and once per 10 years for vice president.

At Council's February meeting, changes to Regulation 941 were approved to support these policy directions. The new regulation takes effect on July 1, 2018, in advance of the upcoming 2019 PEO elections nominations.

President Dony said that more information about the Council Term Limits Task Force's report and recommendations can be found on PEO's website.

Similarly, Council looked at succession planning among PEO staff to ensure the organization has resilience to effectively deal with unexpected challenges, such as long-term absences as well as succession planning for key management positions.

President Dony noted that a topic near and dear to his heart as an engineering educator related to PEO's work with Ontario's engineering faculties. PEO and the National Council of Deans of Engineering and Applied Science held a workshop in May 2017 with Ontario engineering deans and PEO representatives, including senior staff, Council and members of the Academic Requirements Committee.

The Academic Requirements for Licensure: Beyond 2022 workshop was held at McMaster University and was a great opportunity for both deans and PEO to discuss the academic requirements to licensure—topics such as the internalization of the profession and education, teaching and learning methods, and curriculum content measurements.

It is important for regulators and educators to have more such face-to-face discussion in order to evolve the accreditation process and adapt to the innovations in engineering education already in the classroom. President Dony stated that such discussions are already bearing fruit, as there is now a national proposal to modify the accreditation criteria to accommodate such innovations.

President Dony advised that in order to help the public better understand PEO's role, a potential public information campaign to educate the public on the value of licensure and the role of PEO as Ontario's engineering regulator is being investigated.

In September 2016, Council directed the registrar to develop terms of reference and proposed members for a task force to investigate initiating a marketing campaign related to protecting and expanding licence holders' rights to practise. This directive led to the creation of the Public Information Campaign Task Force.

After developing a work plan and request for proposal to engage a vendor to assist with message development, the task force and the chosen agency have been busy with the discovery phase of the project, conducting interviews with executives and stakeholder focus groups, including students, unlicensed engineering graduates, employers of engineers, engineers and regulators.

Based on these consultations, several positioning platforms and key messages exploring PEO and the qualities that differentiate the P.Eng. licence holders were developed.

In October, preliminary research was shared with the Executive Committee.

Surveys were conducted in late 2017 with professional engineers, business executives and the public to test three alternative approaches to communicating the value proposition of licence holders. Based on these survey findings, the creative concept development and message strategy is now being prepared, including recommendations on positioning PEO's goals and change initiatives, and which key messages are most persuasive with key audiences. The task force is scheduled to provide its final report to Council in spring 2018.

President Dony stated that Gerard McDonald, PEO's former registrar, announced in December that he was stepping down as registrar to take on a new role as CEO of Engineers Canada. On behalf of PEO Council, President Dony thanked McDonald for his inspiring and effective leadership over the past four years. Under his watch, several milestone achievements were accomplished, including the aforementioned amendments to the engineers act and the introduction of the PEAK program. He

wished McDonald well in his new endeavours and indicated that he looked forward to continuing to work with him in his new role.

President Dony remarked that it had been his great pleasure and honour working with everyone to lead the engineering profession over 2017–2018. He thanked Interim Registrar Zuccon, staff and the volunteers.

Lastly President Dony thanked his three children, Greg, John and Lynn, all of whom are engineers; as well as his wife, Lisa, for their inspiration and support.

MEMBER SUBMISSIONS

President Dony stated that, as noted in section 17 of By-Law No. 1, PEO's annual general meeting is held:

- to lay before members reports of the association's Council and committees;
- to inform members of matters relating to the affairs of the association; and
- to ascertain the views of the members present on matters relating to the affairs of the association.

He noted that submissions presented to the AGM are a way for members in attendance to express their views on matters relating to the affairs of the association. Member submissions are not binding on Council, he continued, but Council considers the issues raised at AGMs to be very important and will be addressed expeditiously.

President Dony asked the proponent of the first submission to introduce their motion.

Juwairia Obaid, P.Eng., stated that building high-performance leadership is more important than ever since many senior volunteers are subject to the new term limits discussed earlier in the meeting, creating a vacuum because current and future volunteers will be replacing these senior volunteers and fulfilling these roles. She noted that for a self-regulated profession to progress effectively, it is important to ensure that current and future volunteers have the knowledge to be able to take PEO forward in an effective and visionary manner by having the necessary tools and knowledge available to them.

Moved by Juwairia Obaid, P.Eng., seconded by Hasan Akhter, P.Eng.

WHEREAS Volunteers are the lifeblood of our self-regulated profession and are expected to adhere to PEO's core values, regulations and policies;

WHEREAS Many volunteers engage directly with members at large on an ongoing basis, organize and facilitate engineering-specific events and programs, promote and enhance understanding

within society of the profession and the importance of licensure, and participate in PEO's policy development;

WHEREAS For the future of our self-regulated profession, it is essential that PEO's volunteers be given the opportunities and tools to develop and enhance the skills required to become visionary and progressive leaders. These skills may include conflict resolution, strategic analysis, negotiation, chairing effective meetings, public speaking and an understanding of PEO's governance structure, policies and Wainberg's rules;

WHEREAS Building high performing leadership capacity within PEO is becoming increasingly important considering the succession planning and term limits provisions that have been adopted by Council;

WHEREAS As per objective 7 of PEO's 2018–2020 Strategic Plan, PEO-specific leadership values will be consistently practised by volunteers, and promoted through recruitment, training, mentorship, term limits, succession planning and evaluation;

WHEREAS As per PEO's committees and task forces policy, the role of Council includes ensuring the provision of appropriate training for committee chairs and members. In addition, this policy states that the role of the Advisory Committee on Volunteers includes maintaining and providing tools and training to committees;

THEREFORE BE IT SUBMITTED THAT PEO Council form a task force to develop a comprehensive Leadership Development Program (LDP) to support the succession planning and term limits provisions adopted by Council, and make this program available for all practitioners with a focus on PEO's current and future volunteers. This LDP should be designed to effectively build high performing leadership capacity as volunteers advance in their volunteer careers with PEO.

Motion carried

President Dony asked the proponent of the second submission to introduce their motion.

Ray Linseman, P.Eng., advised that the Canadian Anti-Spam Legislation (CASL) was introduced and assented in 2010, with the primary purpose being to prevent unsolicited emails coming to the general public. He noted that when the legislation was introduced, it did not come into force immediately: There was a Privy Council order, and the legislation was to be implemented in three stages. PEO's main concern related to implied consent. Section 6, paragraph (c) of the legislation states that, "The person to whom the message is sent has disclosed, to the person who sends the message, the person

who causes it to be sent or the person who permits it to be sent, the electronic address to which the message is sent without indicating a wish not to receive unsolicited commercial electronic messages....” There are penalties for violation of these rules, which were to come into force on July 1, 2017; however, this clause has now been rescinded, so this concern should no longer be valid.

Linseman went on to say chapters have been directed not to send emails to members unless they have explicit permission to do so. He shared the following excerpt from the legislation wherein 6.(1) states that, “It is prohibited to send or cause or permit to be sent to an electronic address a commercial electronic message unless (a) the person to whom the message is sent has consented to receiving it, whether the consent is express or implied.” He wished to pay particular attention to the word “implied.” He stated there are exceptions to this rule. He then referred to “requirements and prohibitions” in the legislation, which reads, in part, “(6) paragraph (1)(a) does not apply to a commercial electronic message that solely (d) provides notification of factual information about (ii) the ongoing subscription, membership, account, loan or similar relationship of the person to whom the message is sent.” It was his interpretation that because of membership in PEO, members are exempt.

Linseman stated his motion is to request that Council revisit this issue since this legislation is affecting the attendance at many chapter events, which sometimes requires the event to be cancelled. He indicated it was his understanding that PEO was looking at obtaining explicit consent from members during membership renewal, however, this would cause delays wherein he wanted this matter dealt with as quickly as possible.

Thomas Chong, P.Eng., advised that this matter has had a negative impact on the operation of chapter events and asked if implied consent was restricted to emails, and if that is the case, all members should be asked to provide their email address if that is the primary consent. This could be expanded to social media.

Greg Wowchuk, P.Eng., stated that this has been a real obstacle for the chapters. There are many ways to address the issue and resolve it because every non-profit in the country deals with this as well. The easiest way to deal with this matter would be to ask all PEO members by email for their explicit consent, which would resolve the issue of implicit consent and whether it applies.

Leon Wasser, P.Eng., congratulated the elected members and currently serving members of PEO, the executive and staff of PEO, who do a fabulous job. PEO is one of many not-for-profit organiza-

tions and agreed that members should be asked by email for explicit consent.

Chokelal advised that since PEO members pay, it is implied that they want to hear from PEO, however, legal advice may be required. He asked for verification: If an appeal by PEO is put forward, does that not stay the application of the law?

Interim Registrar Zuccon replied no, it is a statute that came into force when the three-year preparation period was proposed. There was a lot of talk about implied consent. This is probably under the domain of express consent. He agreed this is a legal issue.

Susana Toma, P.Eng., suggested an unsubscribe option for emails so members would not be bothered if they do not wish to receive emails.

Linseman stated a legal interpretation of the legislation is required. Background information has been provided to Council and chapters.

Moved by Ray Linseman, P.Eng., seconded by Ahmad Khadra, P.Eng.

WHEREAS Canadian Anti-Spam Legislation was assented to on December 15, 2010, as the Statutes of Canada 2010 Chapter 23;

WHEREAS Privy Council order number 2013–1323 set the coming into force states of the various sections of SC2010 chapter 23 and paragraph (c) stated July 1, 2017, is the day on which sections 47 to 51 and 55 of the act come into force stated;

WHEREAS The chapter manager on behalf of the former registrar directed the chapters not to send any email blasts to members that contained any cost information for attending events or links to chapter websites containing cost information unless they had explicit consent;

WHEREAS The wording in SC 2010 chapter 23 says explicit or implied consent;

WHEREAS It would seem reasonable from the fact the email addresses used are supplied by the members that there is implied consent;

WHEREAS Campaigner allows a recipient to unsubscribe;

WHEREAS This directive has caused many chapters to have difficulty organizing events and getting members to sign up;

WHEREAS Privy Council order number 2017–0580 amended privy Council order number 2013–3123 dated December 3, 2013, by repealing paragraph (c);

THEREFORE BE IN SUBMITTED THAT Council takes whatever steps necessary to allow chapters to be able to advertise chapter events with cost of attendance allowed in the email, including, if necessary, getting a second legal opinion or asking the CRTC for a ruling.

Motion carried

President Dony asked the proponent of the third submission to introduce their motion.

Linseman advised that the cost of providing webmail accounts for volunteers who request this would not be high.

Asif Khan, P.Eng., advised that this is a real issue because some volunteers are using email addresses from their primary employer, noting the use of PEO's domain would ensure emails being sent look professional.

Virendra Sahni, P.Eng., indicated that while he supported the motion in spirit, he had a concern for members who are on tribunal committees. A global format for an email address would pose a problem for members on such committees because they could get lobbied by the parties or the applicants. He stated that communication is currently filtered by the tribunal office.

Linseman advised that providing webmail accounts for volunteers would not be mandatory; it would just be for those who submit a request.

Moved by Ray Linseman, P.Eng., seconded by Ahmad Khadra, P.Eng.

WHEREAS At the 2015 AGM a submission was passed asking Council to allow active volunteers to be able to request a PEO webmail account;

WHEREAS At the September 2015 Council meeting a motion was referred to the ITEG committee under the Regional Councillors Committee;

WHEREAS The terms of reference for this group appear to be still only about 10 per cent complete;

WHEREAS The ITEG group has not met for well over a year;

WHEREAS Three years have not elapsed since the time of the AGM motion;

WHEREAS A webmail account would assist in member engagement and addressing member apathy by making it easier for volunteers to communicate among themselves and with PEO staff;

WHEREAS A webmail account should be treated similar to staff email accounts and not be subject to privacy legislation for use within PEO, such that email addresses could be put in the carbon copy area and not have to go in the blind copy area, such that recipients are aware of who else is being copied within the PEO organization;

WHEREAS Webmail accounts would allow volunteers to find other volunteer email addresses, sometimes with little information using the search facility, would allow finding staff email addresses, phone numbers, proper job titles and reporting structure information;

THEREFORE BE IT SUBMITTED THAT PEO Council pass a motion allowing PEO volunteers to be able to request and receive webmail accounts.

Motion carried

President Dony congratulated Nick Monsour, P.Eng., a past president of PEO, for receiving a volunteer service award from the Ministry of Citizenship and Immigration for 55 years of service.

PRESENTATION TO OUTGOING COUNCILLORS

President Dony congratulated retiring members of the 2017–2018 Council for their service to the profession during a very important year. He noted that they have worked diligently to move the profession forward and he expressed his personal appreciation to Council for their collaboration, support and encouragement and that it was a pleasure serving as president and chair.

In recognition of their service, he presented certificates, name badges, and desk plaques to retiring members of Council: Past President Comrie, Councillor-at-Large Christian Bellini, Northern Region Councillor Michael Wesa, East Central Region Councillor Noubar Takessian and West Central Region Councillor Danny Chui.

Outgoing Northern Region Councillor Dan Preley, who was unable to attend, was recognized as well.

INSTALLATION OF NEW PRESIDENT

Past President Dony administered the oath of office of president for the 2018–2019 term to David Brown and presented him with the president's chain of office, along with the gavel of office.

INTRODUCTION OF INCOMING MEMBERS OF COUNCIL

President Brown then introduced the 2018–2019 members of Council: Past President Bob Dony; President-elect Nancy Hill; Vice President Marisa Sterling, P.Eng.; Councillors-at-Large Roydon Fraser, Kelly Reid and Gregory Wowchuk, P.Eng.; Eastern Region Councillors Ishwar Bhatia and Guy Boone; East Central Region Councillors Thomas Chong and Keivan Torabi, PhD, P.Eng.; Northern Region Councillors Serge Robert, P.Eng., and Ramesh Subramanian, PhD, P.Eng., FEC; West Central Region Councillors Lisa MacCumber, P.Eng., and Warren Turnbull; Western Region Councillors Gary Houghton and Lola Hidalgo; and Lieutenant Governor-in-Council Appointees Michael Chan, Lorne Cutler, P.Eng., Tim Kirkby, Qadira Jackson Kouakou, barrister and solicitor, Lew Lederman, Tomiwa Olukiyesi, Nadine Rush and Marilyn Spink, P.Eng.

CLOSING REMARKS BY PRESIDENT BROWN

President Brown advised that before the meeting was concluded, he would be amiss not to thank those who have put their faith in him to act as PEO president for the year. He advised that he was truly thankful and that he would work to ensure this faith was indeed warranted.

President Brown stated that although evident, no one stands where he was currently standing without a huge amount of support behind them. He thanked his children, Kale, Dylan, Rachel

and Owen, who were with him; and his amazing wife, Liza.

President Brown indicated that he also owed much gratitude to his mentors George Comrie and Bob Dony, who have been instrumental in his education of all things PEO, as well as to the senior management team and incredible staff, who have given of themselves tirelessly over the years.

In addition, he thanked all of his current and past Council colleagues and, of course, the multitude of volunteers who have helped form who he is today. President Brown stated he would like to plant a few seeds for everyone in the room to consider. As past president George Comrie noted a couple of years ago, it is not the role of the president to impose his or her vision or agenda on the organization. Past President Comrie had further noted that history shows that those who have tried, have failed.

Recognizing from his own experience around the table that this statement is, in fact, quite true, President Brown indicated that what he was hoping for in the year ahead was to engage his Council colleagues in consideration of some of the bigger issues facing the association, such as the relevancy of the P.Eng. licence in the near future and PEO's role as a self-regulator in it.

As poet and Nobel Laureate Bob Dylan sang in the early '60s, "the times they are a-changin'," spoke to him in that nothing stays the same.

President Brown stated that he firmly believes PEO is on the cusp of being disrupted as the exponential development of technology changes the face of the world as it is now by what is being termed the Fourth Industrial Revolution. He noted that Annette Bergeron, Engineers Canada president-elect; as well as Jonathan Hack, OSPE chair and president, had similar themes in their messages.

The status quo is no longer acceptable for a regulator and, therefore, sticking collective heads in the sand and hoping for the best is far from a prudent course of action.

Engineering, as it is defined under the *Professional Engineers Act*, is being carried out all around and will continue to expand, yet PEO is almost powerless to put a rope around it and regulate it.

As time advances, the ability to encapsulate these evolving fields will be limited by the resources available and, as such, the fence around PEO's regulatory regime will continue to shrink.

Left unchanged, President Brown predicts only engineering associated with demand-side legislation will be left for PEO to regulate.

President Brown's big-picture question to everyone was: "Where is the relevancy of our licence going and what, if anything, do we plan to do about it?" He believes the association is at a crossroads where it must be decided whether to choose disruption from within while there is still the opportunity, or be externally disrupted without a choice. He stated that the evidence shows this is already happening.

President Brown stated this was the seed he wanted to plant with everyone to begin the conversation. The keynote speaker at the luncheon will expand on this further and he encouraged all to listen to him and consider the future.

President Brown expressed his appreciation for the opportunity to share his thoughts and for bestowing such a great honour upon him.

CONCLUSION

President Brown then declared the 96th Annual General Meeting of the Association of Professional Engineers of Ontario concluded.

Ralph Martin
Manager, Secretariat



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Dorothy Byers, chair, board of directors,
FIRST Robotics Canada

I want to thank you for the excellent article about STEM and STEAM education in Ontario in *Engineering Dimensions* ("From STEM to STEAM," September/October 2018, p. 26).

The article highlights the evolution that educators are witnessing in their classrooms at every level of learning, from kindergarten to university. You have brought forward a number of the challenges they face and have provided concrete solutions, like the unique experiential programming at various schools and opportunities for hands-on learning provided by FIRST Robotics Canada. Through FIRST programs, students face real-world challenges as they work together to find solutions. We know the family of programs that engage students from Grades 1 to 12 have a significant impact on their choices for their life's work; research shows that 90 per cent choose STEM-related fields. Clearly, FIRST promotes a focus on STEM that encourages a diverse group of students to pursue engineering as a profession—a desire we share!

Thank you for your coverage of our FIRST family of programs. Team mentors are always looking for professional role models for their students. Working side by side with an engineer has a profound impact on students' consideration of their future. We also know the mentors derive significant satisfaction from the experience. One mentor commented recently that she had not had as much fun since working with a team on the challenges of her summative project in fourth-year engineering! If you have any questions from readers about how to become a mentor, you can direct them to the FIRST Canada website at www.firstroboticscanada.org.

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PEO shouldn't overreach as a regulator

Richard J. Kind, P.Eng., FEC, Ottawa, ON

The article "Pushing the envelope" (*Engineering Dimensions*, July/August 2018, p. 28), which introduces PEO President David Brown and outlines his thoughts on challenges facing PEO, includes the sentence: "[Brown] shares a story about a group of newly graduating engineers who've designed and developed a product that's 100 per cent engineering, and how they're planning to build and sell this on the market—and none of them are licensed" (p. 33). Brown suggests the question: Should PEO's mandate include involvement in such situations?

I would argue it should not, providing none of those involved in the activity purport to be engineers, and the product does not fall into a category where supervision by a licensed engineer is already normally expected. In practical terms, it would simply not be feasible for PEO to carry out such a mandate. As Brown goes on to say in the article: "The first thing is, we can't even define what it is that's happening, and the second thing is, how the heck are we ever going to have the resources to regulate it in conformance with our act?" But most importantly, a mandated involvement by PEO in such activities would tend to stifle innovation, the lifeblood of a prosperous economy. Precisely because we are in the midst of a Fourth Industrial Revolution, novel ideas and products will continually emerge—often not from the domains of licensed engineers. PEO should not overreach in its role of regulation to protect the public interest. The onus of assessing the safety, usefulness, etc. of novel products based on emerging technologies must rest with the public itself, i.e. buyer beware.

In my view, PEO's role should be twofold: First, it should maintain and promote its register of licensed engineers, that is of persons assessed to have satisfied certain educational and experience requirements who are of good character and have not subsequently been found guilty of serious professional misdemeanours. Second, it should pursue anyone representing themselves as engineers but are not so registered. It may be appropriate to somewhat narrow the legislated scope of engineering work within the purview of PEO such that activities like those mentioned in the preceding paragraph are not included.

Certainly, I agree with President Brown that a thorough review is warranted in light of the rapid change that is taking place, and I wish him well in his efforts.

LETTERS TO THE EDITOR are welcomed, but must be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. Emailed letters should be sent with "Letter to the editor" in the subject line. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to naxworthy@peo.on.ca.



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