

WINTER 2024

ENGINEERING DIMENSIONS



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¹ Statistics Canada, "Survey of Household Spending in Canada," 2022.

² ctvnews.ca, "How much money does it take to raise a child in Canada?" July 2022.

³ clhia.ca, "A guide to disability insurance," 2021.

⁴ Canadian Cancer Society, "Cancer Statistics at a Glance," 2023.

* For complete details, see [manulife.ca/newmember](https://www.manulife.ca/newmember).

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WHAT DO YOU THINK?

Send your letter to the editor to editor@peo.on.ca.
Published letters may be edited for length and clarity.

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Mandatory CPD...Updates Ready

By Nicole Axworthy



We often see the new year as an opportunity for change, a fresh start, a blank slate or a new commitment. Whether it's adopting healthier habits, pursuing personal growth or tackling that long-standing dream, setting goals for the new year represents our innate desire for positive change and self-improvement.

Despite our best intentions, change can be challenging due to our brain's genetic makeup. Our natural fight-or-flight response can sometimes interpret new experiences as threats. However, we can transform an intimidating

process into a manageable and rewarding journey with the right strategies to calm those survival instincts. The key is to break down the larger goal into smaller, achievable steps. This makes it less daunting and opens possibilities for those willing to take that first small step.

Incorporating continuing professional development (CPD) into your life could be seen in much the same way. PEO's mandatory CPD program, PEAK, was designed to support licence holders in maintaining or enhancing their professional engineering skills and competence. The program is broken down into three simple steps to help you achieve this requirement in a manageable way. And, importantly, completing the program shows that you are committed to continually improving your practice and keeping the public safe. It also helps PEO ensure its licence holders are practising competently and ethically. It's a win-win.

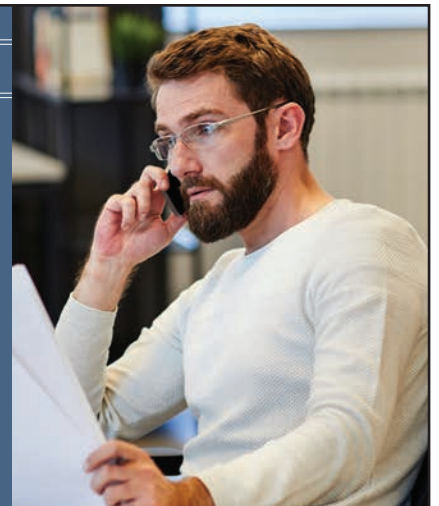
In "2024 PEAK Updates, Explained" (p. 28), Associate Editor Marika Bigongiari provides insight into program improvements rolling out this month, including expanded applicable learning activities in areas such as project management, non-engineering communications and leadership. Plus, the PEAK team is working on new resources to further guide you through the program.

In this issue, we also reveal plans for PEO's upcoming annual general meeting (p. 9), which will be held in person for the first time since 2019 with an online participation option for those who prefer to join from the comfort of their home or office. Plus, we delve into survey results on the current state of engineering practice in Ontario (p. 10) and Council's decision to examine PEO's four-year experience requirement for licensure (p. 44).

Now that it's elections season, you'll find the candidate statements for PEO's 2024 Council elections in this issue's pop-up. I encourage you to support your fellow engineers who are running this year. Head over to peovote.ca for more elections-related resources. Voting closes on February 16, so be sure to count yours in. [e](#)

LET US KNOW

To protect the public, PEO investigates all complaints about unlicensed individuals or companies, and unprofessional, inadequate or incompetent engineers. If you have concerns about the work of an engineer, fill out a Complaint Form found on PEO's website and email it to complaints@peo.on.ca. If you suspect a person or company is practising engineering without a licence, contact PEO's enforcement hotline at 800-339-3716, ext. 1444, or by email at enforcement@peo.on.ca.



Developing PEO's Vision Statement

By Roydon Fraser, PhD, P.Eng., FEC



Where is engineering headed over the next 25 to 50 years? What is your future vision for PEO?

For example, does your vision have PEO's focus and continue to be on the traditional engineering disciplines and their variants—such as civil, structural, building, environment, mechanical, electrical, chemical, mining, materials and industrial engineering—which make up 92 per cent of P.Eng. applicants in Ontario? A future PEO P.Eng. distribution heavily dominated by these traditional engineering disciplines is often referred to as the “small tent” future. Or should PEO pursue becoming relevant and of value to more recently emerged and emerging applied science disciplines—for example, software, biomedical, nano, cybersecurity, physics, artificial intelligence and autonomous vehicle disciplines—in order to better protect the public? More inclusion of emerging disciplines is often referred to as the “big tent” future.

To answer these questions in part, PEO has embarked on fulfilling its strategic goal to “refresh PEO's vision to ensure all stakeholders see relevance and value in PEO.” Towards this strategic goal, for the past several months, 10 advisory groups composed of PEO members who volunteered last summer have been working hard to help

develop a new PEO vision statement and interpretive document. Keep your eyes out as the fruits of this labour will be shared this year with all members and additional stakeholders for feedback as part of the vision development process.

WHAT IS A VISION STATEMENT?

Vision statements guide organizations into the future. They should provide guidance not only for long-term planning but also for reacting to immediate situations such as the recent *Fair Access to Regulated Professions and Compulsory Trades Act* requirement changes. A good vision statement captures an organization's goals, provides an ambitious and inspiring future-looking perspective and is widely accepted. Most importantly, a good vision statement guides an organization as it strives to achieve its mission.

For PEO, its mission is given in the principal object of the *Professional Engineers Act*, which, in summary, is “...to regulate the practice of professional engineering and govern its members...in order that the public interest may be served and protected.” Two key words in the principal object of the act are “regulate” and “govern” as they provide the mechanism available to achieve the purpose of serving and protecting the public interest.

However, there are choices to be made in “how” to regulate and govern, and it is in these choices where a good PEO vision statement plays its mission statement umbrella role. For example, a vision statement may prioritize PEO's image and reputation through a carrot or stick (i.e. reward or punishment) approach, such as through profession enhancement or enforcement, respectively; or it could give equal priority or no enhanced priority to profession enhancement or enforcement.

I am very much looking forward to the results of the vision statement and interpretive document work currently being undertaken by the advisory groups. I do not know if the resulting vision statement will support a big tent or small tent view, what it will say about how chapters fit within the vision or whether it might support some form of advocacy overlap between PEO and the Ontario Society of Professional Engineers, but whatever it supports, if it is widely accepted, it will provide PEO with decision-making guidance and hopefully set PEO on a path to ensure all stakeholders—in particular the public we are entrusted with protecting—see relevance and value in PEO. [e](#)



Professional Engineers
Ontario

Mandatory continuing
professional development
for licensed engineers



PEO's mandatory Practice Evaluation and Knowledge (PEAK) program is designed to help licence holders maintain their professional knowledge, skills and competence as engineers and is in keeping with PEO's regulatory, public protection mandate as set out in the *Professional Engineers Act*.

Licence holders must comply with the annual program unless they are automatically exempt (those enrolled in PEO fee remission, like retirees). Not complying with PEAK obligations could lead to an administrative licence suspension. For more details, visit www.peopeak.ca.

PEAK
REACHING NEW HEIGHTS

Building on Past Progress

By Jennifer Quaglietta, MBA, P.Eng., ICD.D



As we begin a new year, I find myself reflecting on PEO's extraordinary accomplishments throughout 2023. Staff, Council and volunteers progressed PEO's organizational culture and services while delivering on our commitment to the public. Importantly, our licence holders and other stakeholders provided valuable feedback. Together, we have created a high-performing team. I extend my gratitude to the entire PEO team for their dedication and enthusiasm; together we are continuing our journey towards enhanced regulatory excellence.

FOCUSING AHEAD IN 2024

I'm happy to report that we have completed 23 deliverables under the 2023 Operational Plan. Our operational plan stems from the 2023–2025 Strategic Plan, guiding PEO's transformation to becoming a more effective professional regulator and providing a means for staff to focus on delivering key operational results under the direction and oversight of Council. As a result, PEO is better equipped to consider the potential impacts of its decisions. We will be more effective at leveraging data-driven analysis to understand more about whom we are serving and how we might better serve the public interest.

This year, our operational plan includes 21 key deliverables, which are extensions of the work initiated in 2023. These deliverables align with PEO's strategic goals of improving our licensing processes, optimizing our organizational performance, implementing a governance improvement program and ensuring stakeholder value. Among this year's deliverables, I would like to highlight

our Event Engagement Model. The goal of this program is to advance our engagement efforts with each chapter and to dialogue with as many licence and certificate holders as possible in their communities.

REFINING IMPORTANT INITIATIVES

Another focus for this year is to continue monitoring, and enhancing where necessary, our mandatory continuing professional development program, PEAK, which was introduced one year ago. Throughout 2023, we communicated with licence holders about the program and their experience and incorporated much of their feedback as part of our commitment to continuous improvement.

Thanks to the impressive work of staff, we are implementing some changes this year. Most notably, licence holders enrolled in PEO's fee remission program—mostly retired licence holders—will not be required to participate in PEAK. Council unanimously agreed with this recommendation, recognizing that those on fee remission pose a comparatively low risk to public safety because they agree not to practise professional engineering.

PEAK was mandatory but not enforced in 2023. This year, we will have the ability to impose administrative suspensions on those who are persistently non-compliant. We will also begin to develop a program for auditing compliance and validating the accuracy of what licence holders are claiming.

PEO also remains on track to meet specified decision-making timelines for processing new applications for licensure—one key requirement in the amendments to the *Fair Access to Regulated Professions and Compulsory Trades Act*. The legislation changes influenced the updates made to PEO's licensing process last spring. And we continue to refine our internal processes to better equip staff with the resources they need to ensure efficient processing of applications under the new system. Since our implementation last spring, we have identified a list of enhancements that will improve our overall licensing process, resulting in a better experience journey for our applicants.

CONTINUING PEO'S DIGITAL TRANSFORMATION

PEO continues to evolve to meet the needs of the public and to respond to an increasingly complex cybersecurity landscape. PEO's journey of digital transformation leverages technology as a key enabler and aims to enhance licence holder and staff experience, protect licence holder and staff data, streamline processes and ensure ease of use. Areas of focus include cybersecurity and compliance to protect against potential threats, application architecture changes to improve performance and data quality enhancements to ensure reliability, as well as infrastructure and operational augmentation to maintain stability. With these key changes, PEO strives to continue to serve the public and ensure we deliver optimal service as a regulator.

However, as I noted in one of my previous *Engineering Dimensions* messages, change is "a continuous cycle of reflection, goal setting and action that allows us to achieve excellence. This is important to keep in mind because professional regulation is not static." I still stand by these words. And as I reflect on the eventful and challenging past year at PEO, we can all be proud of what we accomplished. And I am even more energized by what we will accomplish in 2024. **e**

PEO to Host 2024 AGM in a Hybrid Format

PEO's 2024 Annual General Meeting will include virtual and in-person attendance options.

By Adam Sidsworth

For the first time since 2019, licence holders will be able to attend PEO's annual general meeting in person.

Council voted last September for a hybrid 2024 AGM, meaning this year, licence holders will have the option of attending either in person or virtually. This year's AGM will be held on April 20 in Barrie, ON.

From 2020 to 2023, all PEO AGMs were exclusively held virtually. This was a direct result of the COVID-19 pandemic, which restricted the gathering of people, including most PEO activities, such as Council and committee meetings and PEO conferences.

Additionally, PEO's offices were closed to most PEO staff and volunteers and the public. However, with the easing of restrictions in the spring of 2022, many PEO functions, including Council and committee meetings, have had both in-person and virtual attendance options; and PEO staff have returned to PEO's offices in a hybrid work environment.

Prior to the decision to host the AGM in a hybrid format, an environmental scan of Canada's other provincial and territorial engineering regulators and other professional regulators in Ontario was reviewed by the Governance and Nominating Committee. Of the 16 regulators that responded, two indicated that they no longer hold AGMs, seven indicated that they have hybrid AGMs, while the other seven indicated they hold solely virtual events.

"A hybrid AGM combines the functional benefits of both an in-person and a virtual AGM," says PEO President Roydon Fraser, PhD, P.Eng., FEC. "The hybrid allows for the virtual meeting advantages of higher participation and increased access for those who otherwise would be unable to attend in-person, while also accommodating the in-person meeting advantages of a far greater number of conversations and more flexible, more gesture-sensitive [and] generally more productive communication."

VIRTUAL AGMs WELL ATTENDED

PEO has held an AGM for most of its existence. Beginning in the 1920s, PEO AGMs were held in January, but by the mid-20th century, they had shifted to May. As far back as the 1950s, PEO AGMs had keynote speakers in addition to the business agenda of the AGM, and in the years leading up to the last in-person AGM in 2019, the AGM was a two-day event that also included a luncheon with a keynote speaker, the Order of Honour gala, the presentation of PEO awards and the Volunteer Leadership Conference.



Despite the plethora of events, the virtual AGMs introduced in 2020 proved to be better attended than the in-person AGMs, typically attracting twice the number of people, even though the virtual AGMs were delivered in listen mode only. However, the virtual AGMs had multiple benefits, including:

- Lower costs, with virtual AGMs costing PEO anywhere between 5.5 to 6.8 times less than in-person AGMs;
- Increased accessibility and inclusivity, with licence holders from across Ontario more easily able to attend a virtual AGM; and
- The anticipation that future virtual AGMs will be presented in a webinar mode, which can accommodate live video and audio form attendees, thus allowing for more direct interaction between PEO and attendees.

According to Fraser, councillors chose the hybrid delivery of the AGM as a viable compromise. "The benefits of a hybrid AGM were seen to outweigh the costs," notes Fraser. "The expectation is the same or more people [attending]. The learning and understanding that will be gained by many by the ability to directly interact in person with licence holders is going to be irreplaceable."

Further details about the 2024 AGM will be announced in the Spring 2024 issue of *Engineering Dimensions* and on PEO's website and social media channels as they become available.

Survey Reveals Engineers' Practice Challenges, Risks

A survey conducted by PEO shows the current state of engineering practice in Ontario.

By Nickesha Ayoade

PEO recently conducted a survey of licence holders that provided valuable insights into the current state of engineering practice in Ontario. Importantly, the survey revealed which challenges and risks PEO can help licence holders mitigate through the delivery of professional practice tools and resources.

The survey showed that technological challenges, risk mitigation and the utilization of advisory services are notable aspects of practice, along with supervision of unlicensed or inexperienced employees, quality control and licence holders attaining competency when transitioning to other practice disciplines.

EXPERIENCE AND DISCIPLINES

The survey uncovered diverse experience levels among the 1740 respondents. The majority, 58.1 per cent, have over two decades of experience. A substantial mid-career presence was observed, with 23.1 per cent of respondents accumulating 10 to 20 years of engineering experience, 10.9 per cent fell within the five to 10 years of experience bracket and 7.9 per cent of respondents were early-career engineers, having practised for less than five years.

Regarding self-identified engineering disciplines of competency, mechanical engineering topped the list with 29.9 per cent, civil engineering closely followed at 22.2 per cent, electrical engineering with 20.3 per cent and structural engineering with 14.1 per cent. Other notable discipline percentages included manufacturing engineering, environmental engineering, chemical engineering, industrial engineering, building engineering and geotechnical engineering, among others.

Because engineers are required to practise only in their areas of competency, the survey asked if respondents had changed their discipline since graduating. Forty-five per cent had done so, and we wanted to explore how they acquired their new competency.

The most common methods were more informal and unstructured: 36.5 per cent learned on the job through practical experience and 27.2 per cent relied on mentorship, while 18.2 per cent used internet resources. Only 13.5 per cent pursued university courses, 12.9 per cent joined relevant associations, 9.4 per cent consulted PEO practice guidelines, 7.1 per cent obtained external certifications and only 0.5 per cent referred to the Canadian Engineering Qualifications Board syllabus for that discipline. This suggests that methods for additional competency acquisition may warrant further policy attention.

EMPLOYMENT PROFILE

PEO also looked at respondents' current professional positions and employment situations, shedding light on the diverse roles and responsibilities within the engineering community. Senior engineers constitute a significant 31.5 per cent of respondents, with an additional 24.9 per cent holding management roles, collectively representing a substantial portion of the surveyed professionals.

Furthermore, the survey identified 12.7 per cent of respondents occupying project management positions, while others (6.9 per cent) identified as junior/intermediate engineers, owners (12 per cent) or currently unemployed (3.8 per cent). A considerable 33.2 per cent of respondents work for companies or organizations offering engineering services to the public in various capacities, and 12.4 per cent are designated as responsible professional engineers in engineering firms, holding a certificate of authorization. Additional employment statuses include sole practitioners (8.4 per cent), temporary contractors (4.1 per cent) and owners of non-engineering companies (2.5 per cent).

In terms of important work activities, the survey revealed that a majority, comprising 52.5 per cent, are actively engaged in project management, with engineering design closely following (50.3 per cent) and exercising professional judgment (39.8 per cent).

Most respondents (70 per cent) mentioned that their companies or organizations primarily undertake projects within Ontario. A considerable portion of the projects extends to other Canadian provinces or territories (22 per cent), and a noteworthy amount in the United States (23.6 per cent).

In terms of work structure, the survey participants reported that the structure of their project teams varies. The most common arrangement is interdisciplinary teams (39.9 per cent), followed by smaller groups of engineers (24.7 per cent) and multiple company teams or consortiums (17 per cent).

PRACTICE ISSUES

Next, PEO wanted to look at practice issues. Most respondents (79.1 per cent) have individuals other than their supervisors reviewing their work, such as other engineering colleagues (51.2 per cent) and clients (41.1 per cent). Government authorities, local building officials and prime consultants also play substantial roles in reviewing their work. And 45.7 per cent of respondents typically supervise or assume responsibility for one to three individuals concurrently when overseeing unlicensed personnel.

Similarly, 55.2 per cent of respondents usually manage or take responsibility for one to three licensed professional engineers. Respondents frequently collaborate with professionals from various fields, including project managers (64.2 per cent), architects (33.1 per cent) and local building officials (18.5 per cent).

In terms of a company's work, unlicensed persons (such as engineering interns, engineering students, technologists or technicians) are often involved in tasks such as drafting designs (39.1 per cent), calculations and analysis (37 per cent), pre-design research (36.3 per cent), drafting reports (30.7 per cent), and, most surprisingly, 20.1 per cent of unlicensed persons did everything but sign or seal documents. This could present some challenges for assuming responsibility for their work and may warrant further research and policy attention.

Regarding the most frequently used skills, respondents included identifying problems, parameters and specifications (scope of work) (64.5 per cent); technical and engineering design (55.6 per cent); knowledge of applicable reg-

ulations, codes and standards (47 per cent); and collaborating within interdisciplinary teams (44.6 per cent). Project management, team leadership and communicating with clients also scored high.

Challenging tasks include working with incomplete information (54.8 per cent); clients constantly changing their direction (28.1 per cent); increased pace of work or shorter deadlines (25.3 per cent); interpreting complex regulations, standards and codes (20.1 per cent); preparing bids on RFPs with perceived bias (12.6 per cent); staying current with new technologies (12.3 per cent); communicating with clients (11.8 per cent); getting paid for work on time (9.9 per cent); and engineering design (9 per cent).

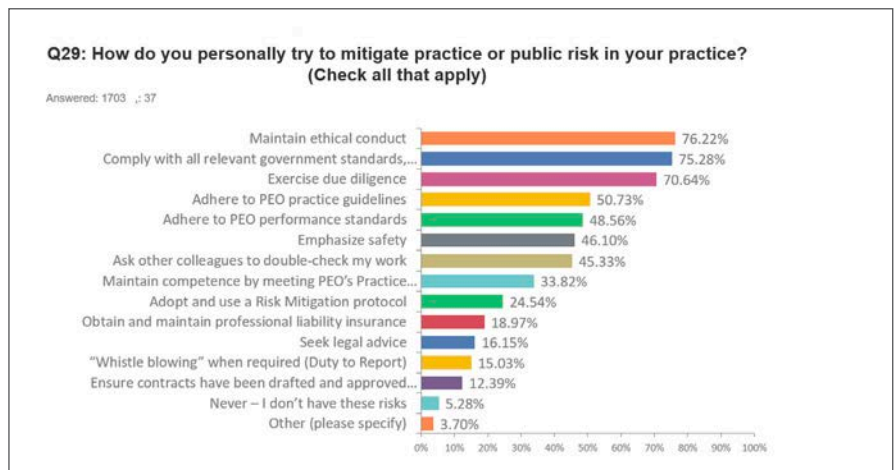
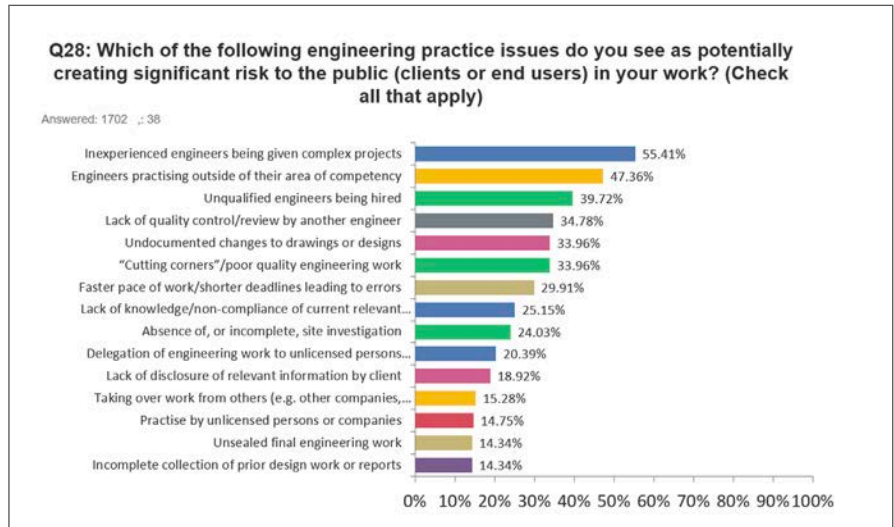
We also asked how respondents deal with tough technical challenges. Engineers commonly conduct internet research (58.6 per cent), consult colleagues within their organization (58.1 per cent) and seek guidance from colleagues or mentors outside of their organization (36.5 per cent) and direct supervisors (28.3 per cent).

When asked about resolving professional judgment and ethical questions, respondents did so by consulting colleagues within the organization (48 per cent), looking up PEO guidelines and standards (42.1 per cent) and referring to PEO's Code of Ethics (35.2 per cent).

PUBLIC SAFETY ISSUES

The survey revealed professional engineers' various strategies to identify and mitigate practice and public risks. Respondents identified many engineering practice issues as creating significant risk to the public. The most frequently noted risks include inexperienced engineers being given complex projects (55.4 per cent), engineers practising outside their area of competency (47.4 per cent), as well as hiring unqualified engineers (39.7 per cent), but a wide range of other risks were also identified (see chart, top right).

Next, PEO asked how engineers personally mitigate those risks in their daily practice (see chart, bottom right). Among the respondents, 76.2 per cent maintain ethical conduct, while 75.3 per cent do so by complying with all relevant government standards, codes and regulations; exercising due diligence in their work (70.6 per cent); adhering to PEO practice guidelines



(50.7 per cent), performance standards (48.6 per cent) and emphasizing safety (46.1 per cent); while 45.3 per cent seek peer verification by asking colleagues to double-check their work. Professional liability insurance is obtained and maintained by 19 per cent.

Additionally, some respondents adopt risk mitigation protocols (24.5 per cent) and seek legal advice (16.2 per cent) when necessary. They are also willing to engage in "whistle-blowing" when required (15 per cent), fulfilling their duty to report. Lastly, 5.3 per cent of respondents never encounter these risks in their practice.

NEXT STEPS

Further work is required to quantify and prioritize risks arising from practice and how employers are mitigating those risks and determine any PEO responses through practice advisory resources or legislative change. To that end, PEO will be conducting a more in-depth follow-up survey this year to quantify practice risks and employer mitigation measures, regulatory complaints usage and potential improvements in practice advisory content, formats, communications and supporting materials.

Nickesha Ayoade is a policy research analyst at PEO.

PEO Updates Guideline on Acoustical Engineering Services

As part of an ongoing commitment to update its practice guidelines, PEO published a revised guideline for engineers providing acoustical engineering services in the land-use planning process.

By Adam Sidsworth



PEO has updated its *Professional Engineers Providing Acoustical Engineering Services in the Land Use Planning Process* guideline. The guideline is intended as an advisory tool for engineers and other professionals working in the field of environmental noise and vibration related to the approval, design and implementation of all types of land uses.

Specifically, it guides licence holders regarding qualifications for acoustical engineers and noise and vibration studies and assessments; land use compatibility concerning acoustics; noise and vibration mitigation; and compliance with provincial and municipal noise and vibration legislation, regulations, bylaws and guidelines, among other topics. “The sound barriers along major highways are just a portion of the acoustic mitigation used and identified as required during the planning stage,” says Al Lightstone, PhD, P.Eng., president of Valcoustics Canada Ltd. and chair of the guideline subcommittee. “Other mitigation aspects include the sound isolation design of the building envelopes—exterior walls, windows and doors and air connections from outside to inside.”

As part of its mandate under the *Professional Engineers Act*, PEO provides practice advice in the form of standards, which are binding for licence holders and can result in potential charges of incompetence and professional misconduct for non-compliance; guidelines, which form the majority of PEO’s published advice but are voluntary; bulletins, which are essentially guidelines in development; and practice advisory services, which sees PEO staff interacting with licence

holders via phone, email or through PEO’s website to help licence holders better understand PEO’s practice advice (see “How PEO is enhancing its practice resources,” *Engineering Dimensions*, Summer 2023, p. 20).

GUIDELINE UPDATES

As part of its 2023–2025 Strategic Plan, PEO is committed to updating and developing standards and practice guidelines that are older than five years. PEO’s guideline on acoustical engineering services in the land-use planning process was last revised in 1998 and needed many updates, including:

- The *Noise Assessment Criteria in Land Use Planning LU-131* and *Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation*, which were replaced by the *Environmental Noise Guideline—Stationary and Transportation Sources—Approval and Planning NPC-300* in 2013;
- The *Provincial Policy Statement*, which was updated in 2020; and the *Planning Act*;
- Definitions of “acoustical engineer” and “certificate of approval”;
- Legislation changes under the *Environmental Assessment Act*;
- Guidelines for environmental assessments (EA) and approved Class EA information; and
- Notably, the authority for land-use planning has been transferred from the province to municipalities.

Council approved the creation of the Professional Engineers Providing Acoustical Engineering Services in Land-Use Planning Subcommittee in November 2020 to help develop an updated guideline that reflects current legislation and definitions. Among the various stakeholders consulted were the Ministry of Environment, Conservation and Parks; Air and Waste Management Association; the Municipal Engineers Association; Association of Consulting Engineering Companies—Ontario; the Association of Municipalities Ontario; and the Ministry of Municipal Affairs and Housing.

The updated guideline will soon be available in the Knowledge Centre of PEO’s website. To receive updates from PEO’s Knowledge Centre, including the publication of standards, guidelines and bulletins, you can enroll in PEO’s free subscription service.

Chapter Leaders Discuss Engagement, Team Building

The joint Chapter Leaders Conference and Government Liaison Program training brought together volunteers from PEO's 36 chapters.

By Adam Sidsworth



Top photo: Delegates and speakers at the CLC and GLP gather for an end-of-the-day photo.

Bottom photo: GLP delegates and panel participants (from left to right) Reza Mahmoudipour P.Eng., of York Chapter; Penelope Williams, P.Eng., of Lake Ontario Chapter; Parliamentary Assistant to the Minister of Labour, Immigration, Training and Skills Development and MPP, Mississauga-Malton Deepak Anand; and Zaineb Al-Faesy, EIT, of Ottawa Chapter.

For the second time in its history, PEO held a joint Chapter Leaders Conference (CLC) and Government Liaison Program (GLP) training, which took place last November at the Holiday Inn Toronto International Airport Hotel in Toronto, ON.

The concurrent conferences also marked the second time PEO has held a conference for its volunteers since the province lifted its restrictions on public gatherings stemming from the COVID-19 pandemic lockdowns.

The CLC theme was "Volunteerism: The cornerstone of chapters" and featured keynote speaker Joanne McKiernan, executive director of Volunteer Toronto. McKiernan's presentation, called "Electrifying local volunteer engagement," was accompanied by a workshop throughout the remainder of the morning.

The afternoon consisted of rotating breakout sessions that included "Cultivating a culture of learning," "Work styles in teams—Leveraging diverse strengths" and other sessions related to PEO's new licensure process, PEO chapter procedures and manual and policies process and administration for PEO chapter leaders.

"As we move forward, our volunteers will continue to play an important function in PEO's journey of transformation and modernization," said PEO CEO/Registrar Jennifer Quaglietta, MBA, P.Eng., ICD.D., who addressed the joint session with PEO President Roydon Fraser, PhD, P.Eng., FEC. Noting that chapters are the ambassadors of PEO, Quaglietta added: "We are changing, to be sure, and so is the profession of which most of us are a part and which it is our great privilege to regulate. And while change can sometimes be uncomfortable, it's important to remember that change is never static; it's always ongoing and it happens most effectively through a continuous cycle of reflection, goal setting and action. We pledge to be partners with you, our licence holders and most active volunteers, as we move through that cycle."

THE WORK OF THE GLP

The theme of the GLP training was "Collaborate, innovate and regulate: Engineering Ontario's future together," which focused on helping GLP volunteers collaborate with PEO when meeting with Ontario's members of provincial parliament (MPPs) and other provincial politicians and representatives. The morning included an address from David Smith, PEO's director of external relations, who explained how the GLP and the work of its ambassadors align with PEO's objective to build a more effective and meaningful engagement strategy for all of its stakeholders, including elected officials across the province.

In addition to Smith, the GLP training included keynote speaker Kate Graham, PhD, assistant professor in political science at Huron University and lecturer in the local government program at Western University. Graham's address focused on leadership and civic engagement.

Other sessions included a panel discussion on building public trust through regulating professional engineering. The panel included Ken Jull, LLB, LLM, partner at Gardiner Roberts LLP and adjunct professor the University of Toronto's faculty of law; Deepak Anand, MPP for Mississauga-Malton; and Jennifer Graham Harkness, P.Eng., chief engineer and executive director, engineering and construction services at the City of Toronto.

The afternoon sessions included a panel discussion on internal and external relationship building and a focus on celebrating chapter engagement. Partici-

pants included Jeffrey Lee, P.Eng., Oakville Chapter GLP chair and representative; Wintta Ghebreyesus, EIT, Lake Ontario Chapter GLP representative; Reza Mahmoudipour, PhD, P.Eng., York Chapter GLP chair; Zaineb Al-Faesly, EIT, Ottawa Chapter GLP representative; Haris Ahmadzai, P.Eng., FEC, Chatham-Kent Chapter GLP chair; and Asif Khan, P.Eng., Windsor-Essex Chapter GLP chair. Also joining them in the discussion was Howard Brown, PEO's government relations consultant.

Number of Women Engineers at a Standstill

Statistics from 2022 show the percentage of newly licensed women engineers is no longer moving in an upward trend.

By Adam Sidsworth

Professional Engineers Ontario

PEO's Actions

In keeping with PEO's mandate, PEO must also examine their own internal operations. Actions in the plan are primarily centred on:

Review	Reviewing licensing process for unconscious bias towards women applicants
Support	Supporting women graduates to pursue licensure through PEO programs and assistance
Feature	Featuring practising women engineers in PEO publications
Encourage	Encouraging women to join & assume leadership roles in PEO committees
Recruit	Actively recruiting women engineers to run for PEO Council
Track	Tracking 30 by 30 progress within PEO & providing annual reports to PEO Council

PEO took the opportunity at its annual 30 by 30 check-in last September to announce the percentage of women who successfully obtained their PEO licence in 2022.

The check-in was attended by representatives of PEO, Engineers Canada, university faculty and PEO's engineering partner employers, many of whom are committed to increasing their number of women engineers.

In 2022, women engineers represented 20.5 per cent of newly licensed engineers in Ontario while representing 18.4 per cent of all applicants for licensure that year.

30 BY 30 GOAL

As a participant in the Engineers Canada-led 30 by 30 initiative, PEO is aiming to have women engineers who successfully obtain licensure with PEO make up 30 per cent of all newly licensed engineers by 2030. Women currently represent just 13.1 per cent of all licensed engineers in Ontario.

PEO endorsed the 30 by 30 initiative in 2017, when Council approved the formation of the 30 by 30 Task Force. This task force was stood down at the end

of 2021, when the ownership of 30 by 30 work was transferred to PEO staff.

PEO continues to hold an annual check-in with external stakeholders, and Council continues to be informed of 30 by 30 metrics every November. Additionally, Council voted in June 2021 to move forward with a gender audit of its then-current licensing process and internal operations.

INCREASING WOMEN'S VISIBILITY

Since 2018, the percentage of newly licensed engineers who are women has increased from 17.8 per cent; however, since 2020, that percentage has stagnated at just above 20 per cent, never hitting the 21 per cent mark. Additionally, between 2018 and 2022, the percentage of overall women applicants for licensure has also stagnated, dropping slightly from 19.4 per cent in 2018 to 18.4 per cent in 2023.

Acknowledging that PEO may have a hard time meeting the 30 by 30 goal, Jennifer Quaglietta, MBA, P.Eng., ICD.D, thanked PEO's 30 by 30 engineering employer partners. "Many of you have made commitments to hiring women engineers, and for this, I thank you. This is an important first step to help girls and women realize that they too can be proud engineers," Quaglietta said. "I display my engineering degree and P.Eng. with pride, and I am convinced that as PEO, post-secondary schools and our 30 by 30 partners remain committed to increasing women's visibility in engineering, more and more women will pursue engineering as a viable and rewarding career."

Quaglietta acknowledged gender audit leads Sonia Kang, PhD, and Joyce He, PhD, who, in their initial stage of the gender audit, found that women applicants are

less successful than men applicants at completing their 48-month experience component of licensure (see “PEO hears update on licensing process gender audit,” *Engineering Dimensions*, November/December 2022, p. 12).

Paradoxically, women engineering recruits accounted for 29.1 per cent of all engineering recruits in 2022 at PEO’s 30 by 30 engineering employer partners.

NEXT STAGE OF GENDER AUDIT

Quaglietta noted that she is awaiting the results of the second stage of Kang and He’s audit, during which time they will interview recently licensed engineers and applicants for licensure to better understand their experience under PEO’s legacy licensing process, which allowed applicants to apply for licensure while obtaining their 48 months of engineering experience. The licensing process was updated in May 2023 and now requires all applicants to complete their experience component for licensure before submitting their application.

“Both Joyce and I are very interested in understanding why women’s representation in male-dominated professions like engineering has stalled, even though we’ve spent so much time and effort to close those gaps,” noted Kang during the 30 by 30 update. “We still see huge gaps, especially

in wages and higher-level positions. We want to know in our research how we can close our gaps.”

Joyce and He, both trained psychologists, have shifted their research in recent years to focus on how organizations can change their environment to overcome biases when making decisions and are currently examining how women engineering students see themselves as engineers.

Kang and He sent out 1000 requests for interviews to women and men engineers and engineering applicants in the legacy licensing model and are hoping to find answers to questions such as what motivated them to apply for licensure. The hope is to have a better understanding of how future applicants will be affected under PEO’s current licensing model.

Jennifer Quaglietta Named One of Canada’s Most Powerful Women

The Women’s Executive Network awards PEO CEO/Registrar Jennifer Quaglietta one of Canada’s most powerful women.

By Adam Sidsworth

PEO CEO/Registrar Jennifer Quaglietta, MBA, P.Eng., ICD.D, was named one of Canada’s 103 leading women in the Women’s Executive Network’s (WXN) Canada’s Most Powerful Women: Top 100 Awards.

Quaglietta, along with the other awardees, was presented with her award at an in-person ceremony at the Fairmont Royal York Hotel in downtown Toronto, ON, on November 30. Quaglietta was one of 11 women named to the BMO STEM category, which honours women in STEM who “are challenging the status quo for knowledge and female empowerment.”

“I am honoured to receive this recognition from Women’s Executive Network,” says Quaglietta. “I am receiving this award today on behalf of all women engineers, who have been working hard to break down gender barriers in a profession where women comprise only 13.1 per cent of all licensed engineers in Ontario. This award is a positive step forward for our profession, and I hope it will serve to inspire more women to study engineering and take on leadership roles.”

WXN PROMOTES DIVERSE LEADERSHIP

WXN, which operates in both Canada and the United States, propels and celebrates the advancement of professional women of all ages, at all levels and in all sectors, by advocating for diversity and inclusion in business, corporate board and senior leadership; championing the

advancement and recognition of women; and fostering development through learning, networking, events and research.

Since its beginning in 2003, WXN’s Canada’s Most Powerful Women: Top 100 Awards have recognized and celebrated a total of 1628 women.

“On behalf of PEO, I am thrilled to congratulate Jennifer on this well-deserved award, recognizing her visionary leadership, innovation and contributions to PEO and the engineering profession,” says PEO President Roydon Fraser, PhD, P.Eng., FEC. “Jennifer has a deep commitment to protecting the public interest, which can be seen through her remarkable career trajectory leading to her current role as CEO/registrar at PEO.”

QUAGLIETTA’S LEADERSHIP AT PEO

Since joining PEO at the beginning of 2023, Quaglietta has remained committed to updating PEO’s licensing process. Among other things, Quaglietta led PEO as the regulator removed its Canadian engineering experience requirement—seen as a barrier for internationally trained applicants—and introduced processes to designed to speed up licensing decisions for all applicants.

Quaglietta is passionate about helping PEO advance its commitments to equity, diversity and inclusion, and she has been instrumental in supporting PEO’s commitment to track and measure the progress of women applying for and successfully obtaining licensure.

Prior to joining PEO, Quaglietta served as vice president of performance excellence and information services at the Healthcare Insurance Reciprocal of Canada (HIROC), where she led the transformation of HIROC’s practices and its thinking to enable a culture of innovation and agility. She has been an ardent advocate for the application of scientific and engineering principles to drive evidence-based change and has published numerous journal articles and posters for her efforts.



PEO CEO/Registrar Jennifer Quaglietta, MBA, P.Eng., ICD.D (middle), celebrates with fellow award winners Poonam Puri, professor of law at York University's Osgoode Hall Law School (left), and Rosa Caputo, CEO of KeyData Associates (right), at the Canada's Most Powerful Women: Top 100 Awards ceremony on November 30.



A group photo of the individuals who were named Canada's Most Powerful Women for 2023 by the Women's Executive Network

ENGINEERS WELL REPRESENTED AT WXN

PEO CEO/Registrar Jennifer Quaglietta is not the only professional engineer being honoured by WXN's Canada's Most Powerful Women: Top 100 Awards.

Among the other engineers recognized are:

- Mary Wells, PhD, P.Eng., dean of engineering at the University of Waterloo (U of W);
- Joanne Atlee, PhD, P.Eng., professor of computer engineering at the U of W's Cheriton School of Computer Science and director of women in computer science;
- Aiping Yu, PhD, P.Eng., professor of chemical engineering at the U of W, director of U of W's Carbon Nanomaterials Laboratory for Renewable Energy and Multi-functional Composites and researcher at U of W's Waterloo Institute for Nanotechnology;
- Stephanie Thompson, P.Eng., technical manager of manufacturing engineering at General Motors;
- Jana Mosley, P.Eng. (Alberta), PMP, ICD.D, president of ENMAX Power; and
- Maninder Dhaliwal, P.Eng. (BC), ICD.D, managing partner of Startup Studio and founding chair of TiE Incubation Lab.

Students Learn About Opportunities in Industry

The PEO Student Conference focused on professional life after graduation.

By Kalena McCloskey and Katherine Haines



Delegates gather while at the 2023 PEO-SC Student Conference at Laurentian University in Thunder Bay, ON.
Photo: Katherine Haines

The annual PEO Student Conference (PEO-SC) took place in October at Lakehead University in Thunder Bay, ON. Themed "Intersections: Diversity, sustainability, innovation and impact," the conference brought together delegates from 15 schools to network with and learn from engineering industry professionals.

Cohosted by PEO and the Engineering Student Societies' Council of Ontario (ESSCO), the PEO-SC primarily aims to prepare final-year students for the engineering workforce, starting with how to obtain a P.Eng. and acclimatize to professional work post-graduation.

EXPLORING DIVERSITY IN STEM

Aligned with the event's theme, delegates were encouraged to talk about the various intersections in their lives and underwent equity, diversity and inclusivity training provided by Faryal Faisal, PEO-SC vice president of sponsorships; and Omar Sayyed, ESSCO vice president of advocacy.

The event also offered sessions about the opportunities engineering students have after graduation. Delegates heard from some of the biggest companies in northern Ontario, including Ontario Power Generation and TBaytel.

Sayed hosted a session on how to continue working on advocacy post-graduation. There was also a panel on inclusivity in science, technology, engineering and mathematics. Delegates heard about the experiences of several Lakehead students and alumni and how they navigate the world of engineering while advocating for themselves and minority groups.

In addition, a panel of graduate students from Lakehead University answered delegates' questions about attending graduate school.

LIFE AFTER LICENSING

The PEO-SC included a session hosted by PEO representatives Sami Lamrad, P.Eng., EIT and SMP student programs coordinator; and Tracey Caruana, P.Eng., manager, engineering intern programs, who informed students about PEO's streamlined licensing process, introduced in May 2023 to allow PEO to comply with new requirements under the *Fair Access to Regulated Professions and Compulsory Trades Act*.

Lamrad and Caruana explained to delegates that because of new licensing decision timelines, PEO has suspended its engineering intern program; consequently, engineering graduates can apply for licensure only after completing four years of engineering experience (see "PEO seeks feedback on Engineering Intern program suspension," *Engineering Dimensions*, Fall 2023, p. 8).

Thangarajah Akilan, PhD, EIT, assistant professor of software engineering at Lakehead University, spoke about artificial intelligence (AI) and the future

of engineering. Notably, Akilan emphasized the importance of communication and people management skills and posited that much technical work will be done by AI in the future.

The first day of the PEO-SC concluded with a gala, where keynote speakers Lamrad and Caruana gave a second presentation about what they had learned from the attendees of the conference, as well as what they hoped delegates had learned. Delegates also heard from Wadika Faisal, the PEO-SC 2023 chair, who drove home the importance of the intersections theme.

The final day of the conference featured a series of mini panel discussions on a variety of industry opportunities, including consulting and innovation and technology. Delegates were also given the opportunity to have a professional headshot taken. At the end of the conference, closing remarks were provided by Faisal, who sent off delegates with a wish they would stay connected and apply intersections to their daily lives.

Kalena McCloskey, ESSCO's vice president of communications, is a third-year student of applied mathematics and engineering at Queen's University. Katherine Haines, ESSCO's video commissioner, is a fourth-year biomedical engineering student at the University of Guelph.

The Foundation for Education provides \$159,000 annually in scholarships to the 16 accredited engineering schools in Ontario



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Decision and Reasons

In the matter 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 ZHI QIANG CAO, P.ENG., a member of the Association of Professional Engineers of Ontario, and DBI GROUP LTD., a holder of a Certificate of Authorization.

This Panel of the Discipline Committee (the “Panel”) of the Association of Professional Engineers of Ontario (the “PEO” or the “Association”) convened a hearing remotely via Zoom on September 26, 2023, to consider the conduct of Zhi Qiang Cao, P.Eng. and DBI Group Ltd. (“Mr. Cao” and “DBI” or collectively the “Respondents”) as described more particularly herein.

PRELIMINARY ISSUE

At the beginning of the hearing, the Chair stated that there was an issue that needed to be addressed. In particular, on the day before the hearing, Mr. Cao attempted to contact the Chair’s daughter by telephone and by email. Mr. Cao asked the Chair’s daughter to speak to him about the hearing on an urgent basis because he was nervous about the hearing. The Chair’s daughter teaches at a university and sits as a director on a board of directors of an organization, so Mr. Cao was able to find her contact information. The Chair’s daughter did not respond to Mr. Cao.

Counsel for the Association stated that the PEO had no prior knowledge that this occurred and that she would need to receive instructions from her internal client. In doing so, the PEO requested that the Chair provide the communications in his possession to the parties, which he did, via the Tribunal Office.

After seeking instructions, the PEO stated that they did not believe the Chair should recuse himself and did not believe that the reasonable apprehension of bias test had been met. In support of this position, counsel for the Association cited *Yukon Francophone School Board, Education Area #23 v. Yukon (Attorney General)* (“Yukon Francophone School Board”), 2015 SCC 25. Counsel for the Association stated that Yukon Francophone School Board has been applied in discipline cases for other regulatory bodies.

Counsel for the Association noted some of the passages in Yukon Francophone School Board including the following:

The test for a reasonable apprehension of bias is undisputed and was first articulated by this Court as follows:

... what would an informed person, viewing the matter realistically and practically—and having thought the matter through—conclude. Would he think that it is more likely than not that [the decision-maker], whether consciously or unconsciously, would not decide fairly...

...

The essence of impartiality lies in the requirement of the judge to approach the case to be adjudicated with an open mind. [Emphasis included in Yukon Francophone School Board decision].

...

Because there is a strong presumption of judicial impartiality that is not easily displaced (Cojocar v. British Columbia Women’s Hospital and Health Centre, 2013 SCC 30 (CanLII), [2013] 2 S.C.R. 357, at para. 22), the test for a reasonable apprehension of bias requires a “real likelihood or probability of bias” and that a judge’s individual comments during a trial not be seen in isolation...

...

The inquiry into whether a decision-maker’s conduct creates a reasonable apprehension of bias, as a result, is inherently contextual and fact-specific, and there is a correspondingly high burden of proving the claim on the party alleging bias: see Wewaykum, at para. 77; S. (R.D.), at para. 114, per Cory J. As Cory J. observed in S. (R.D.):

... allegations of perceived judicial bias will generally not succeed unless the impugned conduct, taken in context, truly demonstrates a sound basis for perceiving that a particular determination has been made on the basis of prejudice or generalizations. One overriding principle that arises from these cases is that the impugned comments or other conduct must not be looked at in isolation. Rather it must be considered in the context of the circumstances, and in light of the whole proceeding. [Emphasis added in Yukon Francophone School Board; para. 141 of Wewaykum.]

Counsel for the Association stated that the PEO’s opinion that the Panel Chair could continue as Panel Chair was bolstered by the facts that there is an Agreed Statement of Facts (“ASF”) in place which contains an admission that the Respondents are guilty of professional misconduct and it was not anticipated that there would be any oral testimony that required an assessment of credibility. These facts diminished any potential concerns regarding a reasonable apprehension of bias.

Mr. Cao also stated that he did not object to the Panel Chair continuing as Panel Chair but did not make arguments

in support of this position. Mr. Cao did, however, apologize for attempting to contact the Panel Chair's daughter.

Independent Legal Counsel to the Panel ("ILC") stated that she agreed with PEO's submissions regarding this issue and that under the circumstances, her advice was that the hearing could proceed.

Based on the strong presumption of impartiality and the high burden of proving bias noted in Yukon Francophone School Board as well as the fact that both parties and ILC were in agreement, the Panel decided that the Chair could continue as Chair in this matter.

AGREED STATEMENT OF FACTS

The allegations against Mr. Cao and DBI as stated in the ASF taken directly therefrom (without Schedules attached), are as follows:

This Agreed Statement of Facts is made between the Association of Professional Engineers ("PEO") and the Respondents, Zhi Qiang (Johnson) Cao, P.Eng. ("Cao") and DBI Group Ltd. ("DBI") (collectively, the "parties").

1. *At all material times, Cao was a professional engineer licensed pursuant to the Act.*
2. *At all material times, DBI held a Certificate of Authorization ("C of A") naming Cao as the individual accepting professional responsibility for the engineering services provided under the C of A.*
3. *On or around January 29, 2014, the complainant retained Cao and DBI to provide structural consulting services for the design and construction of a new commercial building to be located at 369 Queen Street West in Toronto, Ontario (the "Project").*
4. *In connection with the Project, Cao and DBI prepared several sets of drawings containing both shoring and structural designs (the "Drawings").*
5. *PEO retained Daria Khachi, P.Eng., as an independent expert to review the Drawings. Mr. Khachi prepared a report dated December 28, 2021, and a revised report dated February 4, 2022. A copy of the revised report (the "February Expert Report") (without Appendices) is attached hereto as Schedule "A".*
6. *On August 18, 2023, then-counsel for the Respondents provided PEO with a report dated August 16, 2023, signed and sealed by Dave Tipler, P.Eng. (the "Tipler Report"). A copy of the Tipler Report (without Appendices) is attached*

hereto as Schedule "B". The Tipler Report commented on each of the items referred to in the February Expert Report. It also attached an "Explanation Letter" from Cao, dated August 18, 2023, a copy of which is attached as Schedule "C".

7. *PEO provided the Tipler Report and its Appendices, including the Explanation Letter, to Daria Khachi. He provided a Responding Report that identified a number of clerical errors, omissions, typos and lack of coordination issues in the Drawings. He opined that a "thorough design followed by proper peer review and quality assurance checks may have eliminated some of the clerical errors, omissions, typos and coordination issues". The Responding Report concluded further that, assuming the information provided in the Tipler Report is accurate, there was no failure to be aware of applicable standards and codes, and that there was no public safety impact. A copy of the Responding Report is attached hereto as Schedule "D".*
8. *For the purposes of this proceeding, the Respondents accept as correct the findings, opinions and conclusions contained in the Responding Report. The Respondents admit that their conduct was in all the circumstances, unprofessional.*
9. *By reason of the aforesaid, the parties agree that the Respondents are guilty of professional misconduct as follows:*
 - a. *Signing and sealing shoring and structural drawings related to the Project that were prepared in an unprofessional manner, amounting to professional misconduct as defined by section 72(2)(j) of Regulation 941.*

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

Relevant Section re Misconduct in Regulation 941

The following is the subsection cited regarding the Respondents' professional misconduct in paragraph 9 of the ASF, noted above—namely subsection 72(2)(j) of Regulation 941 of the *Professional Engineers Act*, R.S.O. 1990, c. P.28 (the "Act").

Subsection 72(2)(j) of Regulation 941 states -
"professional misconduct" means,
...

- (j) *conduct or an act relevant to the practice of professional engineering that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as disgraceful, dishonourable or unprofessional, [emphasis added]*

Counsel for the Association confirmed that the Association was only seeking a finding that the Respondents were “unprofessional” pursuant to Section 72(2)(j) and not “disgraceful” and “dishonourable”.

PLEA BY MR. CAO AND DBI & PANEL’S FINDING RE ASF

Mr. Cao and DBI admitted to the information set out in the ASF. The Panel conducted a plea inquiry and was satisfied that Mr. Cao and DBI’s admissions were voluntary, informed and unequivocal.

The Panel considered the ASF and found, based on the evidence, that Mr. Cao and DBI committed the agreed upon acts enumerated in the ASF and that the facts support a finding of professional misconduct. The Panel made a finding that Mr. Cao and DBI are guilty of professional misconduct in accordance with paragraph 9 of the ASF, noted above.

ARGUMENTS REGARDING PENALTY & PENALTY SOUGHT

Registrar’s Certificate

Counsel for the Association stated that the Association’s “Registrar’s Certificate” for the Respondents noted that on November 11, 2020, after a finding of professional misconduct by the Discipline Committee in a different matter, the Respondents received a reprimand that was recorded on the Register permanently. In addition, as a result of that matter, Mr. Cao’s licence and DBI’s certificate of authorization were both suspended from November 11, 2020 to March 10, 2021 and a restriction was placed on Mr. Cao’s licence and DBI’s certificate of authorization prohibiting the Respondents from practising mechanical and electrical engineering.

Furthermore, the Registrar’s Certificate states that Mr. Cao’s licence was suspended from July 8, 2022 to January 6, 2023 in accordance with a Registrar’s Notice of Proposal issued on May 24, 2022, pursuant to subsection 14(2)(c)¹ of the Act.

Independent Reports

As a Schedule to the ASF, the Association provided an independent review report regarding the actions of Mr. Cao and DBI in relation to the structural design of a 3-storey building and its temporary foundation shoring at 369 Queen Street West in Toronto, Ontario (the “Project”) from Daria Khachi, P.Eng., (“Mr. Khachi”) Principal of DIALOG Ontario Inc. As noted

above, Mr. Khachi prepared a report dated December 28, 2021. He also prepared a revised report dated February 4, 2022 (“Revised Khachi Report”).

The Revised Khachi Report stated the following as an issue and conclusion on that issue:

3. *Consider whether Cao failed to meet the standards expected of a reasonable and prudent practitioner in the circumstances;*

Having designed the shoring of the structure and the superstructure with deficiencies in design, quality of work and including material copied from other another engineering firm, I would respectfully conclude that the work of Zhi Qiang Cao, P.Eng. and DBI Group Ltd. is inconsistent with generally accepted standards in the field of professional engineering. Mr. Cao and DBI Group Ltd. failed to meet the standards expected of a reasonable and prudent practitioner.

As noted above, the counsel who was representing the Respondents at that time provided the PEO with a report dated August 16, 2023 signed and sealed by Dave Tipler, P.Eng. (the “Tipler Report”) which attached an “Explanation Letter” from Mr. Cao dated August 18, 2023. As noted above, the Tipler Report commented on each of the items referred to in the Revised Khachi Report. As also noted above, after reviewing the Tipler Report and Explanation Letter, Mr. Khachi stated, in a Responding Report dated September 7, 2023, a “thorough design followed by proper peer review and quality assurance checks may have eliminated some of the clerical errors, omissions, typos and coordination issues”. Mr. Khachi also stated that that assuming the information provided in the Tipler Report is accurate, he did not believe that the Respondents had failed to be aware of applicable standards and codes, and there was no public safety impact.

Aggravating and Mitigating Factors

The Association argued that there were aggravating factors in this case that showed a lack of cooperation and governability by Mr. Cao. For example, counsel for the Association argued that it was difficult to set a hearing date with Mr. Cao, who made multiple adjournment requests. Counsel for the Association also stated that at times, Mr. Cao was unresponsive and, at times, there was a lack of communication from him in relation to setting a hearing date.

In response to this argument, Mr. Cao stated that he was dealing with some personal issues including the death of both of his parents. In addition, he was dealing with some issues regarding his lawyers. For example, he stated that with one of his lawyers, the insurance company stopped paying for the lawyer so the lawyer withdrew. In addition, Mr. Cao stated that when

¹Subsection 14(2)(c) of the Act states:

(2) The Registrar may refuse to issue or may suspend or revoke a licence if the Registrar is of the opinion, on reasonable and probable grounds,

...

(c) that there has been a breach of a term, condition or limitation of the licence.

he retained a new lawyer, Mr. Cao did not need to postpone the hearing but the lawyer wanted a postponement. As noted above, ultimately Mr. Cao was self-represented in this hearing.

Counsel for the Association also stated that PEO's expert needed to reevaluate the case based on information which was provided by Mr. Cao that should have been provided two years earlier. The PEO argued that this action made it necessary for the PEO to spend more money on its expert. In particular, Mr. Khachi prepared a Responding Report to the Tipler Report and the Explanation Letter, dated September 7, 2023, which, among other things, states the following:

The Tipler report provides useful clarification on the six different sets of drawings that were subsequently provided by Cao between the period of early 2014 to late 2014. The Tipler report also provides insight into the neighbouring construction taking place at 367 Queen Street West in 2013/2014 that affected the design of 369 Queen Street West. It is unfortunate that there was a lack of communication between Cao and PEO, and it took approximately 2 years to receive the much needed clarification.

Counsel for the Association also stated that the events giving rise to the misconduct in the matter which caused Mr. Cao's prior suspension, reprimand and licence restriction, as noted in the Registrar's Certificate, post-dated the events giving rise to the misconduct being dealt with in the hearing before this Panel, so they cannot be said to be an aggravating factor. Nevertheless, counsel for the Association stated that these events raise other concerns regarding Mr. Cao.

In addition, counsel for the Association stated that mitigating factors included Mr. Cao entering into an ASF and therefore avoiding a full hearing, as well as time constraints surrounding Mr. Cao's work on the Project.

Mr. Cao stated that his work on the Project was not final and he was not expecting it to be relied upon. In addition, he stated that he believes that most of his mistakes were clerical in nature such as typos. He submitted that these errors were uncharacteristic and that he did his best on this project within the time restraints. Nevertheless, Mr. Cao stated that he thinks he should have done a better design job.

PROPOSED PENALTIES, DECISION & ORDER

The Penalty proposed by counsel for the Association was as follows:

- a. A permanent reprimand (under s.28(4)(f));
- b. Publication of the findings and order, with reference to names (under s. 28(4)(i)); and
- c. That there be a term and condition on Mr. Cao's licence requiring him to successfully complete the

National Professional Practice Examination within 14 months after the Discipline Committee pronounces its decision (under s. 28(4)(d)).

The Penalty proposed by Mr. Cao and DBI was as follows:

- a. A reprimand to stay on the Respondents' record for 6 months (under s. 28(4)(f)); and
- b. Within 4 months of the date of the hearing Mr. Cao and DBI would enter into a quality assurance plan.

With respect to item (b) in Mr. Cao and DBI's proposed penalty, above, Mr. Cao proposed that he would submit a quality assurance plan for acceptance by the Registrar, to be followed by Mr. Cao, DBI and any employees.

In response to this proposal, counsel for the Association stated that quality assurance plans can be complicated documents and often present issues including how to enforce and monitor them. In any event, counsel for the Association argued that a quality assurance plan would not address the specific problems that were identified in this matter.

After weighing the ASF and the Schedules thereto, both parties' proposals regarding penalty, both parties' arguments regarding aggravating and mitigating factors and the contents of the Registrar's Certificate, the Panel ordered the penalty below.

Order

This Panel ordered the following:

- a. A reprimand to stay on the Respondents' record for 2 years (under s. 28(4)(f));
- b. Publication of the findings and order, with reference to names (under s. 28(4)(i)); and
- c. That there be a term and condition on Mr. Cao's licence requiring him to successfully complete the National Professional Practice Examination within 14 months after the Discipline Committee pronounces its decision (under s. 28(4)(d)).

Counsel for the Association stated that no costs were sought in this matter because the Respondents entered into an ASF. No costs were ordered.

The Panel issued the oral reprimand to the Respondents at the end of the hearing.

Albert Sweetnam, P.Eng., signed this Decision and Reasons as Chair of this Discipline Panel and on behalf of the members of the Discipline Panel: Alisa Chaplick, LL.B., LL.M., and Charles McDermott, P.Eng.

Complaints Committee: Voluntary Undertaking Under Subsection 24(2)(C) of the Professional Engineers Act

In the matter of a complaint regarding the actions and conduct of Wah-Sing S. Wong, P.Eng., a member of the Association of Professional Engineers of Ontario (“Wong”), and SWS Engineering Inc. (“SWS”), a holder of a certificate of authorization (C of A).

BACKGROUND

1. The complaint relates to a structural inspection of a single family dwelling, completed by Wong and SWS in connection with an insurance claim filed by the complainant for work completed outside the scope of an open Building Permit.
2. At all material times, SWS held a Certificate of Authorization (“C of A”) naming Wong as the individual accepting professional responsibility for engineering services provided under the C of A.
3. The scope of work included a structural review of a second story loft and roof replacement, stair access and main floor structural support beams. In order to carry out the inspection, openings in the residence’s finishes were required, and the locations of the openings were specified by Wong.
4. Following the inspection, Wong and SWS issued two reports; one to the relevant Township and one to the complainant’s insurer that included drawings, sealed and signed by Wong, detailing SWS recommended repairs. Neither report included any indication that it was intended as draft or preliminary, and both were signed and sealed by Wong.
5. One report included a note that it was based only upon a review of accessible areas and openings as indicated, and that if additional deficiencies were discovered during construction, SWS would adjust the scope of repair work accordingly. While the reports included comments on various structural elements inspected, and certain repairs were recommended, the report issued to the Township included the SWS opinion that the subject floor was structurally adequate and safe.
6. Subsequent to the reports being issued, structural deficiencies in construction were identified and brought to Wong and SWS’s attention. Wong and SWS promptly amended their drawings as required in response.

THE COMPLAINT

7. The complaint raised concerns regarding the member’s use of seal, lack of detail in documented scopes of work, lack of clarity in documented assumptions and limitations included in the member’s reports and drawings, and the potential for structural

issues to have gone unnoticed and uncorrected if they hadn’t specifically been brought to Wong’s attention by the complainant.

8. The Complaints Committee (“the Committee”) received a candid and fulsome response to the complaint from Wong and SWS, including the explanation that further structural re-assessment is typically carried out by the member and holder during construction when finishes are stripped, and that adjustments are made to design drawings as required at that time.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

9. The Committee considered the complaint five times between July 15, 2020, and November 8, 2021. The Committee considered the response received and carefully considered the issues raised in this matter. The Committee was concerned that, in addition to the concerns previously stated, by sealing the reports and drawings at issue, Wong and SWS conveyed to the recipients of the work that the drawings were final, complete and could be relied upon to bring the residence into compliance with the Ontario Building Code. The Committee considered whether a referral to the Discipline Committee was warranted in all the circumstances, and whether it was in the interest of the public and the profession to proceed with the matter. The Committee decided that if the issues raised in the complaint were addressed through certain proactive remedial efforts on the part of the member and holder, as well as publication of a summary of this matter, the public interest issues raised by the complaint would be addressed.

VOLUNTARY UNDERTAKING

10. Wong and SWS voluntarily undertook to:
 - a. Provide all SWS engineering staff with a copy of the following PEO Guidelines:
 - Guideline on *Structural Condition Assessments of Existing Buildings and Designated Structures*,
 - Guideline on *Use of the Professional Engineer’s Seal*,
 - Guideline on *Professional Engineering Practice*.
 - b. Ensure that its engineering staff review PEO’s webinar “How to Use Your Professional Engineer’s Seal”;

- c. Create a standardized quotation document for use by SWS engineering staff, which will include a defined scope of work section and clearly indicate that any drawing, specification, plan, report or other document(s) prepared as part of SWS' professional engineering services provided to the public will be sealed, signed and dated.
11. Documents as described above, and documentation demonstrating completion of the undertaking elements, were provided to the Committee.
 12. Further, Wong and SWS voluntarily agreed that a summary of this matter and the voluntary undertaking would be published in PEO's Gazette with their names.
 13. The voluntary undertaking described above was accepted by the Committee as a dispositive measure, and pursuant to its powers under section 24(2)(c) of the Act, the Committee decided that this matter would not be referred to the Discipline Committee.

Complaints Committee: Voluntary Undertaking Under Subsection 24(2)(C) of the Professional Engineers Act

In the matter of a complaint regarding the actions and conduct of Li Hang Wang, P.Eng., a member of the Association of Professional Engineers of Ontario ("Wang"), and LHW Engineering Ltd. ("LHW"), a holder of a Certificate of Authorization.

BACKGROUND

1. The complaint relates to the involvement of Wang and LHW in a project involving the partial change of use of a commercial/residential property. The project required interior alterations and renovations and associated mechanical changes. Wang and LHW sub-contracted the mechanical design work to another engineering firm.
2. At all material times, LHW held a Certificate of Authorization ("C of A") naming Wang as the individual accepting professional responsibility for engineering services provided under the C of A.
3. The first set of structural and architectural plans submitted by LHW to the municipality were returned, noting that they were not sealed, and presumably not reviewed, by an architect. Several months later, after an architect was retained by Wang and LHW, an Application for Permit to Construct or Demolish for the Project was submitted to the municipality.
4. The municipality subsequently issued a Deficiency Notice to LHW outlining a number of architectural review comments and one mechanical review comment. Shortly after, the municipality issued a Permit for the project.

THE COMPLAINT

5. The complaint raised concerns regarding the accuracy and quality of the respondents' work, their responsiveness and the quality of their communications.
6. The Complaints Committee ("the Committee") received a response to the complaint from Wang and LHW providing details with respect to the timeline of events and certain explanations regarding difficulties experienced on the project in general.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

7. The Committee considered the complaint on March 18, and September 8, 2021. The Committee considered the response received and carefully considered the issues raised in this matter. The Committee had concerns that it appeared that the project architectural plans had been prepared by LHW without the involvement of a licensed architect. There were further concerns that the architectural and structural drawings

prepared by LHW appeared to be lacking in detail for the renovation of an older building such as the subject project building. Correspondence between LHW, the sub-consultants and the complainant appeared to be lacking in clarity and fulsome. Finally, as LHW was responsible for managing the sub-consultants on the project, there were concerns with the lack of LHW supervision over sub-consultant contract performance which may have contributed to some delay to the project.

8. The Committee considered whether a referral to the Discipline Committee was warranted in all the circumstances, and whether it was in the interest of the public and the profession to proceed with the matter. The Committee decided that if the issues raised in the complaint were addressed through certain proactive remedial efforts on the part of the member and holder, as well as publication of a summary of this matter, the public-interest issues raised by the complaint would be addressed.

VOLUNTARY UNDERTAKING

9. Wang and LHW voluntarily undertook that within six months they would:
 - a. Make every effort to follow best practices recommended in PEO Guideline *Assuming Responsibility and Supervising Engineering Work*;
 - b. Make every effort to include best practices recommended in PEO Practice Bulletin *Use of Building Code Compliance Data Matrix By Professional Engineers Submitting Drawings For Building Permits*; and
 - c. Demonstrate to the Committee that they had reviewed and understood the PEO Guideline *Professional Engineering Practice* and make every effort in future projects to improve documenting communications as recommended in the guideline.
10. Further, Wang and LHW voluntarily agreed that a summary of this matter and the voluntary undertaking would be published in PEO's Gazette with reference to names.
11. The voluntary undertakings described above were accepted by the Committee as a dispositive measure, and pursuant to its powers under section 24(2)(c) of the Act, the Committee decided that this matter would not be referred to the Discipline Committee.

Complaints Committee: Voluntary Undertaking Under Subsection 24(2)(C) of the Professional Engineers Act

In the matter of a complaint regarding the actions and conduct of two members of the Association of Professional Engineers of Ontario, and a holder of a Certificate of Authorization (C of A).

BACKGROUND

1. The complaint relates to the structural design of free-standing interior glass balustrades for a commercial office building that had been constructed, but for which an occupancy permit had not yet been granted. The respondents had been retained as the engineering consultants responsible for the engineering design of the balustrades, as per the project architectural drawings.
2. At all material times, the holder held a Certificate of Authorization ("C of A") naming one of the members as the individual accepting professional responsibility for engineering services provided under the C of A. The other member was the professional engineer who signed and sealed the relevant designs and applications to the City.
3. The respondents had designed the balustrades without a continuous top-rail, based on CSA standard A500-16, which had not been adopted by the Ontario Building Code ("OBC"). The relevant OBC standard, CAN/CGSB-12.20-M89, required a continuous top-rail for glass balustrades.
4. The respondents took the position that their design based on the CSA standard was safe, and that the CSA standard was the more relevant standard, having been issued in 2016, while the standard in the OBC was last updated in or about 1989. In liaising with City officials with respect to the design issues raised and the need for a top-rail, some communications sent to the City were issued by an engineer employed by the C of A's Alberta office, who was not licensed in Ontario but licensed in Alberta.
5. An Alternative Solution Application was submitted to the City, signed and sealed by the member. This was followed by the submission of a Revision to the Alternative Solution Application. The Applications included a report signed and sealed by both the member in Ontario and the engineer licensed in Alberta. The Applications attempted to illustrate compliance with the CSA standard and conformance to the performance required by the OBC standard. In the Revision to the Alternative Solution Application, the respondents submitted that their design met the intent of the OBC, and that the required redundancy could be met without the need for the top-rail. Further, the respondents submitted that adoption of an action plan, should one of the balustrades become damaged, involving building occupants and managers notifying responsible persons of a damaged guard, and subsequent remedial steps to cordon off an area and install a temporary top-rail, would mitigate risk.
6. The City rejected the Applications, indicating that the OBC standard was the current standard to be met, and that as such the requirements of reliability and redundancy had not been met, nor had the requirements for heat-strengthened laminated glass been met.
7. The project owner subsequently submitted an Application for Hearing to the Building Code Commission. The Application argued that the Alternative Solution Application demonstrated compliance with the performance requirements of the OBC.
8. The Building Code Commission ruled that the Alternative Solution Application did not meet the requirements of the OBC, and that the top-rail, as required by the OBC, provided a margin of safety for catastrophic failure of a free-standing glass-guard, for which an equivalent degree of safety was not demonstrated in the Alternative Solution.
9. Following the ruling, the building owner agreed to install a top-rail to the balustrades.

THE COMPLAINT

10. The complaint raised concerns regarding safety, compliance to the OBC and appropriate use of seal.
11. The Complaints Committee ("the Committee") received a response to the complaint from the respondents, in which the respondents maintained their view that the CSA standard was the relevant standard, the submitted designs were safe, and once the Alternative Solution Application route had been exhausted, they had immediately taken steps to ensure compliance to the OBC standard by designing a continuous stainless steel top-rail system for the balustrades. The response further informed the Committee that while the respondents had not used a similar glass balustrade design approach on any project before or since, similar designs by others had been approved and installed in other jurisdictions in Ontario.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

12. The Committee considered the complaint three times in 2021 and 2022. The Committee considered the response received and carefully considered the issues raised in this matter. The Committee acknowledged that the City granted a building permit allowing the installation of a glass balustrade without a continuous top rail. However, the Committee was concerned that while the respondents had been clear and transparent regarding the fact that their design was not in compliance with the OBC, they had not submitted an Alternative Solution Application to the City at the outset of the project. In addition, the Committee was concerned that certain design load requirements may not have been adequately addressed in the respondents' designs, reports and submissions to the City. The Committee was also concerned with the respondents' suggestion that an action plan that relied on building tenants taking certain steps in the event of any damage to the glass balustrades could adequately address safety concerns. Finally, the Committee had concerns that certain design documents issued by the respondents appeared to not have been sealed by an engineer.
 - c. Confirm that engineering staff involved in the design of glass guards have been made aware of the requirement to apply the load factors and combinations specified in OBC Table 4.1.3.2.A, without reduction, unless such a reduction has been accepted by the authority having jurisdiction as part of the acceptable solution;
 - d. Create a formal policy to ensure clients seeking to have a glass guard designed that will not fully meet the acceptable solutions criteria of the OBC and require approval from the authority having jurisdiction as an alternative solution, are informed in writing of this once the respondents are retained on the project;
 - e. Provide written confirmation that the appropriate engineering staff have read and understood the PEO Guideline *Assuming Responsibility and Supervising Engineering Work Guideline*, paying particular attention to section 5.4 Assuming Responsibility for Work Prepared Out of Province, and to undertake to adhere to the relevant aspects of the guideline going forward;
 - f. Provide written confirmation that engineering staff have read and understood the PEO Guideline *Use of the Professional Engineers Seal* and commit to practitioner seals being applied to all required work product going forward; and
 - g. Provide written confirmation that engineering staff involved in the design of glass guards are fully aware that guards must be shown to be capable of resisting the loads specified in the OBC, Division B, including the vertical loads specified in sentence 4.1.5.14.(6).
13. The Committee considered whether a referral to the Discipline Committee was warranted in all the circumstances and whether it was in the interest of the public and the profession to proceed with the matter. The Committee decided that if the issues raised in the complaint were addressed through certain proactive remedial efforts on the part of the members and the holder, as well as publication of a summary of this matter, the public-interest issues raised by the complaint would be addressed.

VOLUNTARY UNDERTAKING

14. The respondents undertook, through a Voluntary Undertaking to:
 - a. Create a formal policy and make all engineering staff aware that engineering services and opinions provided in Ontario must be provided by individuals licensed in Ontario;
 - b. Demonstrate that engineering staff involved in the design of glass balustrades are aware that the OBC standard CAN/CGSB-12.20-M89 is the required engineering standard governing design unless acceptance of an alternative solution has been granted by the authority having jurisdiction in which a glass guard rail design is being implemented. Further, engineering staff would be made aware that they must follow the requirements of the OBC or seek approval of an acceptable solution before issuing a design for construction or permitting purposes;
15. Documents as described above and documentation demonstrating completion of the undertaking elements were provided to the Committee.
16. Further, the respondents voluntarily agreed that a summary of this matter and the Voluntary Undertaking would be published in PEO's Gazette.
17. The voluntary undertaking described above was accepted by the Committee as a dispositive measure, and pursuant to its powers under section 24(2)(c) of the Act, the Committee decided that this matter would not be referred to the Discipline Committee.



2024 PEAK UPDATES, EXPLAINED

PEO is implementing important changes to its mandatory continuing professional development program this year, following stakeholder input. BY MARIKA BIGONGIARI

FOLLOWING A FULL YEAR OF

PEO's mandatory continuing professional development (CPD) program, PEAK, the regulator is introducing changes to certain of its aspects. The changes aim to improve the program by incorporating feedback from licence holders while supporting PEO's commitment to maintaining a CPD program that serves the public interest.

"PEO is committed to continuously improving the PEAK program, keeping in view the feedback from key stakeholders and available resources, and following the principles of right-touch regulation," says Arden Heerah, P.Eng., PEO's manager of professional development initiatives.

Mandatory CPD, based on the existing PEAK program, was introduced on January 1, 2023, when the Council-approved mandatory requirement via section 51.2 of Regulation 941 under the *Professional Engineers Act* (PEA) took effect, following six years of a voluntary pilot program of the same name. This new regulation section describes how PEO can administer, monitor and enforce CPD. In doing so, PEO joined all other Canadian engineering regulators in having a mandatory CPD requirement for their licence holders.

AN EVOLVING CPD PROGRAM

This year's program refinements result from much behind-the-scenes research and consultation with stakeholders. Last year, PEO conducted two surveys to examine the perceptions of licence holders on various components of the PEAK program and gather feedback on its current and future states.

Notably, of the approximately 15,500 survey respondents of the latest survey, more than 70 per cent agreed that the CPD requirement should prioritize CPD that supports competence to practise professional engineering and that it should include some complementary CPD in areas such as project management, leadership and health and safety. Most respondents agreed that the PEAK program elements are useful for recognizing their practice risks, reacquainting them with their professional and ethical obligations and monitoring their CPD activities. They also agreed that the current user interface features in PEO's online portal are useful.

"Survey results informed adjustments to the PEAK program, as well as the development of its future features as PEO prepares to introduce administrative licence suspensions for non-compliance and audits to verify that licence holders are complying with CPD requirements," explains Heerah.

The following sections explain what's new for 2024, including licence holder exemptions, expanded criteria for acceptable CPD activities and upcoming enforcement measures.

EXPANDED CPD CRITERIA

This year, the criteria for acceptable CPD activities have been expanded to include supplementary learning in areas including project management, contract administration, business management, leadership, non-engineering communications and health and safety knowledge.

The new rules require that 80 per cent of a licence holder's CPD hours come from core engineering learning that maintains or enhances a licence holder's competence to practise professional engineering—the primary intent of the PEAK program—while up to 20 per cent of CPD hours can come from supplementary learning that strongly supports their core engineering practice activities.

Admissibility criteria for core CPD activities must:

- Help the licence holder maintain or enhance their professional engineering competence;
- Contain learning content with technical or regulatory knowledge that directly relates to their engineering practice area(s); and
- Not be accrued during their engineering work hours.

The new, optional supplementary learning category can help licence holders satisfy their CPD reporting requirement more quickly because it expands on applicable activities. For example, if you are assigned 10 CPD target hours for the year, eight hours should go towards core activities, and up to two hours can be used to learn about something that supports you in your practice, such as attending a webinar to improve your communication skills or reading about health and safety. Ultimately, however, it is up to the licence holder to determine whether an activity is suitable.



EXEMPTIONS FOR FEE REMISSION ENROLLEES

Professional engineers and limited licence holders are required to participate in the PEAK program every year to maintain their licence. However, starting this year, PEO is exempting licence holders who are enrolled in the fee remission program—97 per cent of whom are retired engineers—from all PEAK program requirements.

Following consultations with licence holders and a risk-based analysis, Council made the decision to exempt fee remission enrollees because they aren't practising or likely to practise professional engineering and therefore pose a comparatively low risk to public safety.

Individuals can request to go on fee remission at the time of licence renewal if they are retired, unemployed or on health-related leave, parental leave or full-time post-graduate study leave. While on fee remission, enrollees are not practising and not eligible to practise, and their fee remission enrollment is posted alongside their licence status in PEO's public directory. However, as a licence holder, they are still subject to the PEA and its regulations.



UPDATED LICENCE STATUS TERMS

Each year, licence holders are assigned elements of the PEAK program based on their licence status and practice status combination. This year, you may notice PEO updated its licence status terminology with the introduction of two new licence status labels, “eligible to practise” and “not currently eligible to practise,” which replace the previous “permitted to practise” and “not permitted to practise” labels.

If an individual has the status “eligible to practise,” it indicates that they can practise professional engineering in Ontario. If an individual has the status “not currently eligible to practise,” it means they must not practise professional engineering in Ontario.

If a licence holder is not currently practising professional engineering, they can choose to have the “not eligible to practise” status. However, this status is automatically applied if they are enrolled in the fee remission program, their licence was suspended by the registrar or by order of the Discipline Committee or their licence was cancelled for not paying their annual licence fee.

While the licence status terminology has changed, how the status corresponds to a licence holder’s PEAK program requirements remains the same (except for fee remission enrollees, who are now exempt from PEAK requirements).

PEO STATUSES			PEO ALLOWANCES AND RESTRICTIONS			PEAK PROGRAM REQUIREMENTS		
My practice status	My licence status	Why I have these statuses	I’m an engineer allowed to use the designation (P.Eng. or LL/LET/LEL)	I can practise and seal engineering documents	I’m eligible to be the designated engineer for a Certificate of Authorization	The annual Practice Evaluation element applies to me	The annual Professional Practice Module element applies to me	The annual CPD Report element applies to me
						Due every Jan. 31	Due every Jan. 31	Due every Dec. 31
Practising	Eligible to practise	I’m currently practising or expect to practise this year	✓	✓	✓	✓	✓	✓
Not practising	Eligible to practise	I’m not currently practising and opt in to CPD hours	✓	✓ I must change status to ‘Practising’ within 30 days of resuming practice	✗	✓	✓	✓
	Not currently eligible to practise	I’m not currently practising and opt out of CPD hours	✓	✗	✗	✓	✓	✗
		I’m enrolled in fee remission	✓	✗	✗	✗	✗	✗
		My licence is suspended for disciplinary reasons	✗	✗	✗	✓	✓	✗

INTRODUCING A COMPLIANCE SYSTEM

Although PEO did not enforce mandatory PEAK in 2023 to allow licence holders to familiarize themselves with the new requirement, PEO has indicated that it will be capable of applying the registrar's enforcement powers against those who are persistently non-compliant with PEAK obligations, starting this year.

Section 51.2 of Regulation 941 identifies two enforcement measures to ensure licence holders comply with the PEAK program: compliance checking and compliance auditing. Initially, PEO is taking a remedial stance and helping licence holders comply or resume compliance quickly. Enforcement measures will be continually reviewed as the program becomes well-established.

COMPLIANCE CHECKING

Each year, the completion statuses for licence holders will be monitored and checked to confirm they have met their program requirements. Licence holders will be sent reminders to stay on track with their program requirements and provided ample time to comply.

The first two PEAK program elements (Practice Evaluation and Professional Practice Survey) have an annual due date of January 31, and the third element (CPD Report) has an annual due date of December 31. Every year, the registrar will determine the enforcement date for the calendar year based on critical factors like compliance numbers meeting a minimum threshold and feedback from key stakeholders.

The exact date will be determined on an annual basis and will be communicated to licence holders with ample notice.

COMPLIANCE AUDITING

The PEAK audit program will help ensure licence holders are completing their PEAK requirements correctly. This means PEAK declarations made by licence holders will be reviewed to verify the declarations are correct and true and the reported CPD activities are valid and true. Licence holders whose declarations are found to be deficient will be provided guidance to remedy those deficiencies and ample time to perform those actions.

A subset of licence holders will be selected every year for an audit of their PEAK declarations. This subset will eventually reflect an agile mix of high-risk cohorts and randomized selection to protect the public interest and demonstrate fairness. Licence holders selected for an audit will be notified and could be asked to provide additional details and supporting documentation. A due date will be indicated with requests for information, and it will incorporate ample time for licence holders to respond and remain in compliance.

PROOF OF CPD COMPLETION

It's important to retain proof of your completed CPD activities in case you are selected for an audit. For activities such as reading or working with a mentor, examples of acceptable proof could be a written summary of the learning content acquired by the individual from studying periodicals or research materials or a mentor contract accompanied by a record of hours spent on topics discussed.

Proof of activities such as completing an online course or attending a conference are easier to obtain and can include things like an enrollment confirmation email, a copy of a sign-in sheet from a conference or a certificate for attending a workshop. PEO chapters will also soon be providing certificates to licence holders who attend chapter-hosted events such as technical seminars.

ENFORCEMENT ACTIONS

PEO is committed to enforcing the PEAK program for licence holders who don't fulfill their PEAK requirements. The registrar may administratively suspend the licence of an individual as a penalty for those who do not:

- Complete any of the required PEAK program elements by the prescribed deadline;
- Respond to a PEAK audit; or
- Complete remedial actions prescribed during a PEAK audit.

A licence suspension means that a licence holder cannot call themselves a professional engineer or limited licence holder, cannot use the licence title, cannot practise professional engineering and cannot be the designated person for certificates of authorization under section 47 of Regulation 941 of the PEA. However, licence holders need only complete the overdue requirement(s) to have their PEAK suspension lifted immediately. This approach shows PEO's commitment to helping licence holders comply and resume compliance with ease and speed.

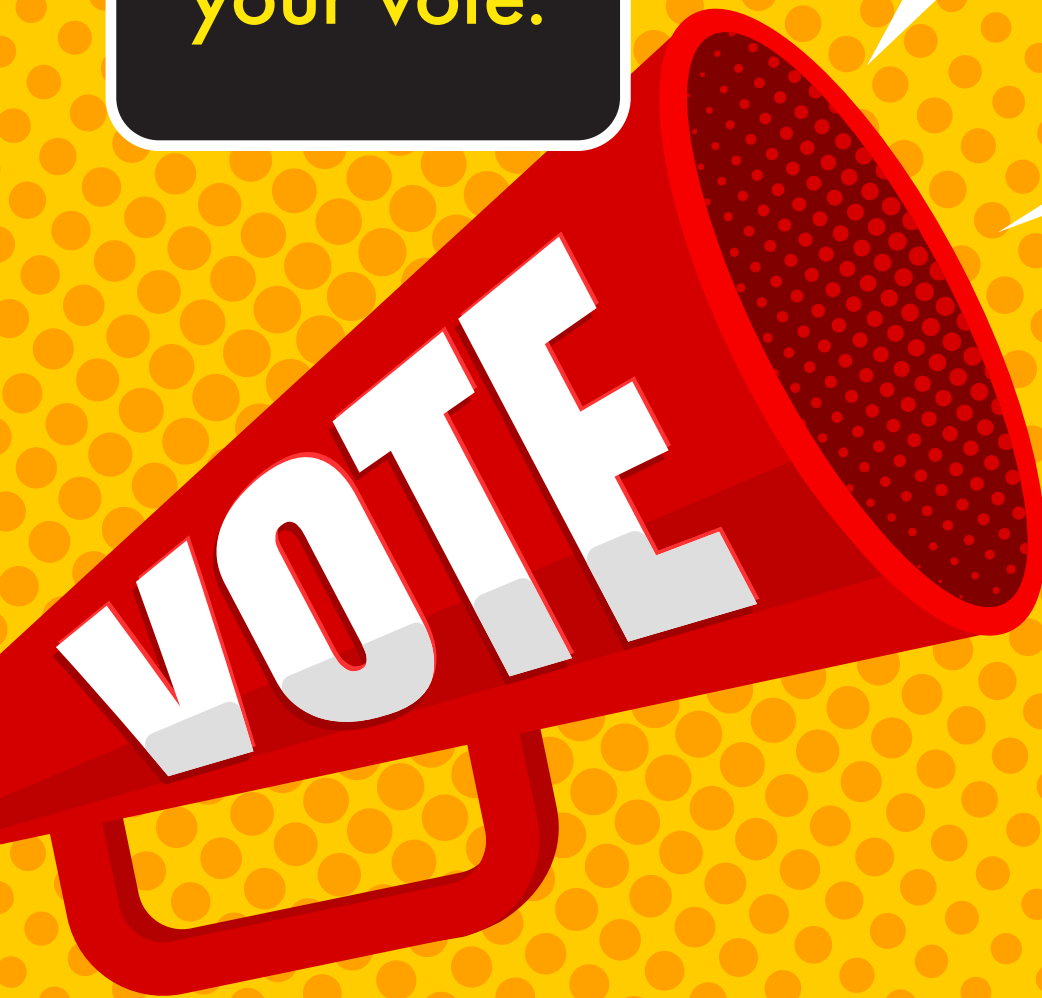
HOW TO COMPLETE YOUR PEAK REQUIREMENTS

Your PEO portal account is your window to the PEAK program. Log in at <https://secure.peo.on.ca/ebusiness/home> to:

- Complete your Practice Evaluation;
- Learn about professional practice;
- Report your continuing professional development activities; and
- Access PEAK help resources.

The PEAK program user interface in the PEO online portal has been enhanced with more features and a help page, including FAQs, video guides and tutorials. Visit www.peopeak.ca for the latest program details, including the program elements and deadlines and how to complete the PEAK program. Submit questions and feedback to peopeak@peo.on.ca. [e](#)

Your
profession
matters.
So does
your vote.



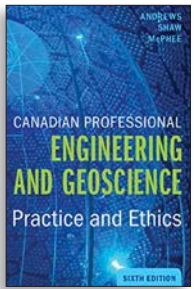
Find the 2024 Council Elections candidate statements in this issue's insert.

Go to peovote.ca for all election-related resources,
including video recordings of this month's All Candidates Meetings.

Voting opens January 12. Count yours in.

READ

Construction Planning, Equipment and Methods, by Robert Peurifoy, Clifford Schexnayder, Robert Schmitt, 2023: An outline of the latest technologies and how to apply them to real-world construction projects with an emphasis on cutting-edge machine capabilities. This up-to-date edition features new chapters on trenches, trenchless technology and virtual design.



Canadian Professional Engineering and Geoscience: Practice and Ethics, by Gordon Andrews, Patricia Shaw, John McPhee, 2018: A comprehensive text for today's Canadian students and practising professionals that effectively covers practice and ethics topics while offering advice for readers to become effective professionals.

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LISTEN

Software Engineering Radio

A podcast for the professional software engineer, featuring experts from throughout the software engineering world about a full range of topics

Developer Tea

Discussions to help engineers find clarity, perspective and purpose in regular short bursts of high-value content



The following events may have an in-person and/or online component. See individual websites for details.

ATTEND

JANUARY 26

International Conference on Traffic Systems Engineering, Mississauga, ON

FEBRUARY 2

International Conference on Data Mining, Kitchener, ON

International Conference on Mechanical and Automobile Engineering, Toronto, ON

FEBRUARY 8

International Conference on Artificial Intelligence for Communication Engineering, Toronto, ON

FEBRUARY 15

International Conference on Urban Freight Transportation and Distribution, Ottawa, ON

MARCH 8

International Conference on Engineering & Technology, Ottawa, ON

MARCH 22

International Conference on Times of Polymers and Composites, Markham, ON

MARCH 25

International Conference on Aerial Robotics, Montreal, QC

MARCH 26

International Conference on Renewable Energy Resource and Energy Conversion, Ottawa, ON

LISTEN

The Engineering Commons Podcast

Practical insights for the engineering crowd

Level-up Engineering Podcast

A podcast offering actionable management secrets from some of the most successful tech leaders



The Engineers Collective Podcast

A podcast for those curious about the future and how engineers will keep our cities running

WATCH

Structural Engineer vs Architect - Design Meeting

A design kick-off meeting with a structural engineer who begins developing the structural design for an outpost project.

15 Insane Engineering Marvels

Bridges, dams, buildings and highways; a look at the top 15 most incredible feats of engineering.



PEO Introduces Council Governance Scorecard

PEO Council approves a new scorecard to support governance oversight of operations.

By Marika Bigongiari

This year, PEO is introducing a new scorecard of quantitative indicators to support governance oversight. The scorecard is designed to encourage the use of evidence-based information in decision-making processes and aligns with PEO's goal of implementing a continuous governance improvement program as part of its 2023–2025 Strategic Plan.

The scorecard was developed by PEO staff, presented to the Governance and Nominating Committee (GNC) for feedback and then approved by Council at its November 2023 meeting.

Scorecards are a useful tool for strategic management and organizational oversight because they provide a balanced set of indicators that represent the overall health of the organization. These indicators serve as a basis for ongoing reporting to both Council and the CEO/registrar, as well as PEO's leadership team. Balanced scorecards measure the performance of the organization as a whole and the outcomes of its strategies.

"Balanced scorecards are an important part of management and oversight processes and help ensure alignment of operational activities with strategic plans," says Arun Dixit, P.Eng., PEO's vice president of digital transformation and corporate operations. "In support of PEO's strategic goal of implementing a continuous governance improvement program, the scorecard, recently approved by Council, will continue to advance accountability, transparency and alignment across the organization."

The new governance scorecard comprises 12 indicators (see "Governance scorecard indicators" sidebar, right) that are aligned with each of PEO's corporate functions by division, which include regulatory operations, policy, finance and strategy and organizational culture. The indicators show, for example, the percentage of applicants for licensure who have been issued a decision within the six-month timeline mandated by the *Fair Access to Regulated Professions and Compulsory Trades Act*; the percentage of licence holders who have complied with the mandatory PEAK program; and the percentage of newly licensed engineers who are women, showing if we are on target to meet the 30 by 30 goal of having women represent 30 per cent of newly licensed engineers by 2030.

The scorecard incorporates three components:

1. A **report**, which will include the latest data for all scorecard indicators, compared against a target and threshold value to designate a status of green, yellow or red to each indicator's performance;

2. **Definitions** that include the reporting frequency, operational definition and the latest available status updates for each indicator; and
3. A **framework** that shows the set of 12 scorecard indicators reported to Council and an additional 20 indicators reported to PEO's executive leadership team.

Now that the scorecard has been approved, Council will receive regular reports as part of the CEO/registrar's report to Council. The scorecard will be updated by PEO staff through operational processes. "The scorecard will be published in advance of each Council meeting and will act as another tool to help support ongoing collaborative dialogue between staff and Council," explains Dixit. "Moreover, scorecards are an important vehicle for demonstrating quantifiable outcomes because of numerous operational activities." **e**



GOVERNANCE SCORECARD INDICATORS

1. **Regulatory operations**
 - Acknowledgment of complete licensure applications within target
 - Registration decisions within target
 - Transfer applications within target
2. **Policy**
 - Mandatory PEAK compliance rate
 - 30 by 30 licensure rate
 - Updated standards and guidelines
3. **Finance and strategy**
 - Year-to-date budget variance
 - Days cash on hand
 - Strategic initiative completion
4. **Organizational culture**
 - Employee engagement
 - Staff retention
 - Year-end performance review completion



ENGINEERS

OF YESTERDAY AND TOMORROW

PEO has been licensing and regulating engineers who have contributed significantly to society for over a century. Here, we profile two engineering interns full of engineering and leadership potential and two historical engineering pioneers who were innovators in their own right. **BY ADAM SIDSWORTH**

For centuries, engineering was synonymous with the military. Indeed, many of the earliest engineering innovations in Ontario were by military engineers. The Rideau Canal, completed in 1832 under the leadership of Lieutenant-Colonel John By of the Royal Engineers, was part of a defensive military network.

Later in the 19th century, Canada's engineering shifted to civil engineering. Later major projects, such as the Welland Canal, built to allow ships to circumnavigate Niagara Falls, were designed and built by civil engineers. Canada's early civil engineers included Thomas Coltrin Keefer, who built water infrastructure for Hamilton, ON, and Montreal, QC; and Sir Sandford Fleming, who helped build Canada's transcontinental railway. Meanwhile, De Havilland Canada's DHC-2 Beaver plane allowed for the exploration of remote areas of Canada, and civil engineers built the TransCanada Highway for automobiles.

As the country grew, Canadian engineers became focused on telecommunications, electrical power, nuclear technology and, ultimately, space exploration. From CANDU nuclear reactors to the Canadarm, Canadian engineers have pushed boundaries.

ENGINEERS AS LEADERS

PEO's FIRST LEADER: A REGULATORY PIONEER

When Ontario's original *Professional Engineers Act* (PEA) was enacted by the provincial legislature on June 14, 1922, engineering was seen more as a trade than a profession. Indeed, under the original PEA, any Ontario resident with five years of engineering experience could become licensed. Overseas military service during the First World War—even if it wasn't engineering related—made licensure easier. And although a graduate of a university engineering program could be exempt from writing technical exams to obtain licensure, there was no formal requirement for an engineering education in PEO's licensure process.

Ironically, PEO's first president was a long-time University of Toronto (U of T) engineering dean. Charles Hamilton Mitchell, who earned his undergraduate degree in civil engineering from U of T in 1894, served as a city engineer for the City of Niagara Falls, NY, from the year he graduated until 1901. By 1905, Mitchell was the principal assistant engineer for the Ontario Power Company in Niagara Falls, ON. After briefly studying electrical power in Europe, Mitchell returned to Canada and between 1906 and 1914 built hydroelectric plants across the country. For much of this period,



PEO's first president, Charles Mitchell Hamilton, was also dean of engineering and applied sciences at the University of Toronto. Mitchell is depicted in his study circa 1940. Photo: University of Toronto Archives

he was also a consulting engineer for the Dominion Water Power Branch of the Department of the Interior, a predecessor of Natural Resources Canada.

The First World War interrupted Mitchell's engineering career, as he served in military intelligence, beginning as a lieutenant in the militia; followed by a major in the Corps of Guides and Divisional Intelligence; a general staff officer of intelligence in the 1st Canadian Division in Quebec, England, France and Belgium; and later, he served in an intelligence capacity in Italy. By 1919, a year after the war ended, Mitchell achieved the rank of brigadier general of intelligence at the War Office in London, England. Mitchell was recognized for his military leadership roles, receiving the French Legion of Honour in 1916, the Belgian Order of Leopold in 1917 and additional British and Italian honours.

By 1919, Mitchell was back in Canada and was appointed dean of the faculty of applied sciences and engineering at U of T, a position he held until his retirement in 1941. Indeed, during his tenure at U of T, Mitchell excelled as an engineering leader, serving, among other things, on a joint Canada-US panel of engineers studying the St. Lawrence Waterway project in 1924 and as vice president and subsequently president of the Canadian Society of Civil Engineers during two separate stints in the 1920s.

On August 9, 1922, PEO's provisional Council—whose members, including Mitchell as president, were named in the original PEA—



Apart from being an engineering dean and PEO's first president, Charles Mitchell Hamilton was also a military leader. Painting: James Coates. Beaverbrook Collection of War Art, Canadian War Museum. CWM 19710261-0123

began its inaugural meeting. Many items were discussed, including PEO's initial licence fees (\$10 per annum, with a \$5 joining fee), the hiring of the first registrar-secretary ("Young lawyer most desirable") and working secretary ("preferably experienced businesswoman"). The initial bylaws, the first general meeting and elections for the 1923 Council were also discussed.

Initially, PEO was conceived as a joint regulatory and advocacy body, and, until 1937, PEO had an open licence, meaning that licensure wasn't required for title or practice rights. In an October 26, 1922, letter to potential applicants for PEO licensure, Mitchell wrote: "The formation of this association marks the beginning of a new era for the profession of engineering in this province. The final outcome of the efforts for complete statutory recognition and proper regulation must depend on YOU and our fellow engineers...It is earnestly hoped that the call for members will meet with very general and prompt response from the great majority of all eligible members of the profession...May we have your co-operation?"

EIT AIMS TO BECOME FUTURE LEADER

A century later, May Marefat, PhD, EIT, has a much more inclusive and embracing outlook on PEO licensure. But that may not be surprising, given that Mitchell's and Marefat's entry into engineering are separated by time, geography, culture and, importantly, regulation.

Indeed, Marefat, whose early exposure to engineering was a continent away, recalls an early childhood experience in Iran. "I went to the dentist, and he was working on my teeth, and he asked me if I wanted to be a doctor when I grew up," recalls Marefat. "I said, 'I want to be an engineer. Doctors heal people, but [look at] the tools you work with,' I said. 'Engineers make them.'"

Marefat was attracted to engineering's problem-solving qualities in junior high school. "To me, science is pure knowledge and magic."

Marefat followed through on her childhood dream by obtaining an undergraduate engineering degree from Sharif University of Technology in Tehran. "I studied chemical engineering because I was passionate about energy and industry," observes Marefat. "I was always fascinated [by] how energy plays an important role in

everyday life." Marefat ultimately obtained her master's degree and PhD, both in chemical engineering, from the University of Alberta.

Marefat relocated to Ontario to pursue a career at Enbridge, where she is currently an advisor station build-GDS operations. "My team is responsible for the completion of the design and installation process of new natural gas distribution stations, as well as the rebuild of the current stations across Ontario," notes Marefat. "I see myself looking for an energy future that not only embraces diverse sustainable energy resources but also is inclusive to people." Not surprisingly, Marefat is committed to increasing equity, diversity and inclusion (EDI) in engineering.

In 2023, PEO recognized Marefat for her EDI volunteerism and leadership by awarding her the G. Gordon M. Sterling Engineering Intern Award. The award, founded in 2010 by PEO, promotes, encourages and celebrates professional leadership achievements of engineering graduates registered as engineering interns with PEO. PEO noted that Marefat "is passionate about supporting a diverse workforce that embraces an inclusive culture and empowering young women and engineers in their engineering careers."

Appropriately, Marefat's volunteer and leadership activities include serving as co-chair for Enbridge's Engineering Diversity and Inclusion Taskforce; vice chair of strategy and governance at the Young Energy Professionals Network; and programs director, vice president, president and past president of the Society of Women Engineers Toronto.

"I have worked a lot on bringing diversity and an inclusive work culture to the workplace," says Marefat. "Enbridge has a lot of EDI activities, like the task force I served on. We have run a successful reverse mentorship program focused on EDI and have regular conversations about diversity and inclusion with management at Enbridge."

Marefat is eyeing eventual leadership opportunities with PEO—including a potential run for Council—once she is fully licensed. Indeed, Marefat is inspired by PEO's 30 by 30 work, which has PEO committed to have women represent 30 per cent of newly licensed engineers by 2030. "Part of [30 by 30] is making sure that women are aware of the requirements for a P.Eng. and have opportunities to get their engineering experience," notes Marefat. "And making sure that employers are providing those opportunities equally to men and women."

In the meantime, Marefat continues to develop leadership skills. "In my previous role at the integrity team at Enbridge, I led a team of five integrity analysts, all EITs, to develop comprehensive engineering reports that provided detailed assessments to determine natural gas equipment's conditions and developed recommendations for risk mitigation," notes Marefat. "That practise of leading small teams while getting involved with Enbridge's Engineering Diversity and Inclusion Taskforce and all my volunteer activities are helping me stay on track towards becoming a leader."



May Marefat, PhD, EIT, received the 2023 G. Gordon M. Sterling Engineering Intern Award for her leadership and volunteerism to increase equity, diversity and inclusion in engineering.



May Marefat (front row, left) with her team at Enbridge, where she is an advisor station build-GDS operations and volunteers on Enbridge's Engineering Diversity and Inclusion Taskforce.

ENGINEERS IN SPACE

ONTARIO ENGINEER SOARS AT NASA

When Bruce Aikenhead passed away in August 2019 in Salmon Arm, BC, at the age of 95, local press described his "genuine humility," despite his pioneering accomplishments in aeronautical and space engineering. The Order of Canada and Queen Elizabeth II Diamond and Golden Jubilee recipient, who was licensed by PEO until 1993, apparently kept a nonchalant profile in retirement.

A neighbour recalled a fond memory of Aikenhead to the *Kelowna Capital News*. While they were walking their dogs, Aikenhead casually mentioned that he had had a conversation with Canadian astronaut, physician, engineer and fellow PEO licence holder Bob Thirsk, P.Eng. "Bruce was a wonderful neighbour and a genuine, humble Canadian," recalled Wendy Woodhurst. "He was always willing to share stories about his work on the Canadarm, the Avro Arrow and with NASA—and equally happy to talk about his family and his dog, Jed...It took me a moment to realize that Bob Thirsk had called him for advice from the International Space Station!"

Aikenhead's decades-long career began as a radar engineer during the Second World War. Aikenhead eventually became a flight simulator engineer on Canadian fighter jet projects, including, notably, the famed Avro Arrow, for which Aikenhead designed flight simulators. When the Arrow was cancelled by the Canadian government under John Diefenbaker in 1959, Aikenhead became one of 33 Avro engineers to make the move to the National Aeronautical and Space Administration (NASA), which the United States government had founded just the year before.

Aikenhead contributed to NASA's Mercury program, which put the first American astronauts in space; and the Gemini program, during which NASA engineers further developed the rocket technology that would land people on the moon during Apollo. Notably, Aikenhead's work with NASA included the development of training aids for the Mercury astronauts.

Although Aikenhead left NASA prior to the beginning of the Apollo program, he wasn't done with space. Returning to Canada, Aikenhead worked as a project engineer for RCA Victor's ISIS-2 Ionosphere Research satellite; the Communications Technology Satellite, or Hermes, for Communications Canada; and the High Altitude Research Project at McGill University.

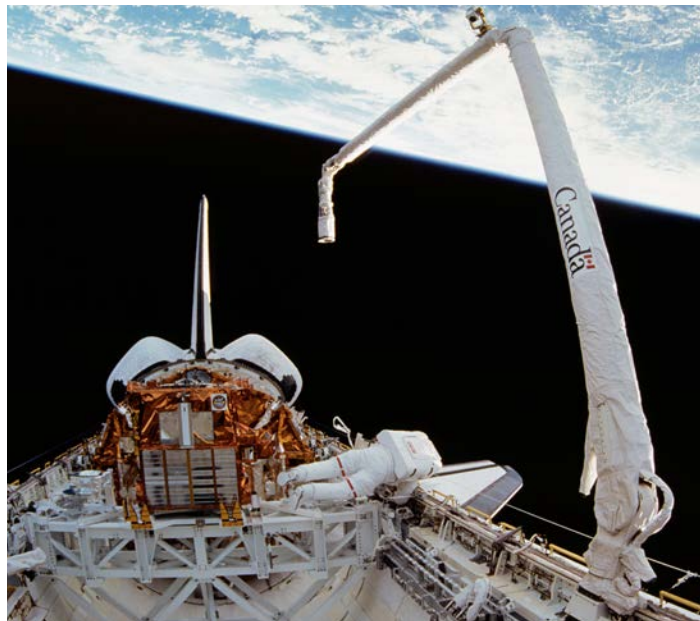
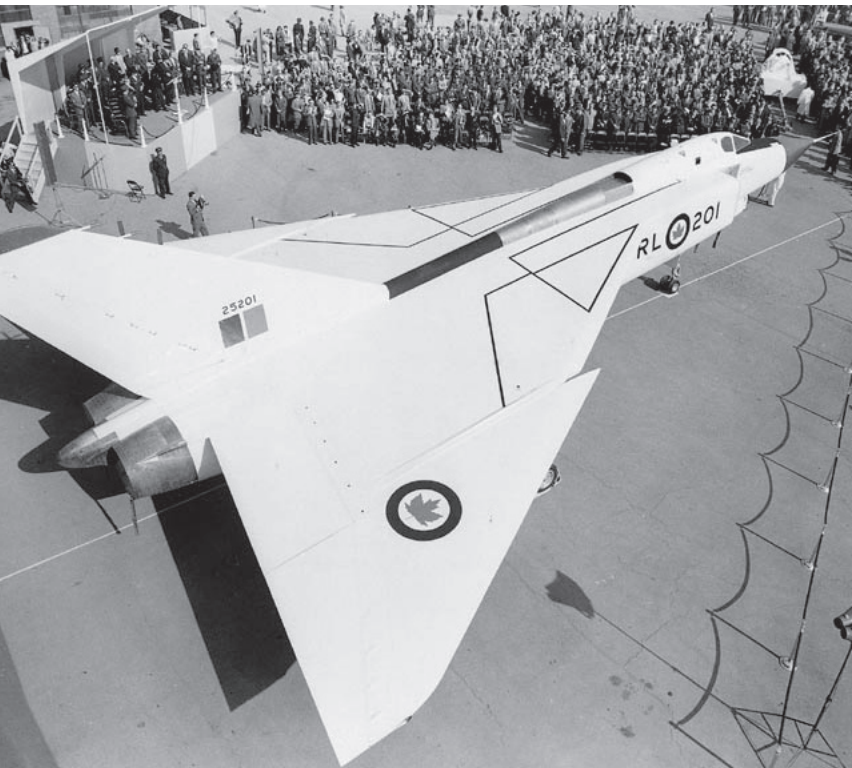
When NASA awarded the contract of the building of the Shuttle Remote Manipulator System, or Canadarm, to the Canadian government in 1974, Aikenhead was named to the program. "That was a lot of work; it took quite a few years," Aikenhead recalled years later to a group of students. "Finally, the day came when we were down at Cape Canaveral. It had a sleeve put on it...I suggested we have something to suggest it was from Canada."

But Aikenhead's greatest contributions may have been as the first director general of the Canadian Astronaut Program, a role that allowed Aikenhead to hire Canada's initial group of astronauts—including Thirsk, Marc Garneau, Roberta Bondar, Chris Hadfield and former Governor General Julie Payette.

Aikenhead retired in 1993 to small-town BC, where he became involved with the Okanagan Science Centre and the development of its planetarium. Upon hearing of Aikenhead's passing, Thirsk fittingly posted on Twitter (now X): "The first group of [Canadian Space Agency (CSA)] astronauts did not have a deep background in aerospace. But our program manager did. Bruce Aikenhead became our go-to guy for information. To say thank you, I sent a photo of Shuswap Lake from ISS to Bruce. Bruce passed away yesterday. He will be missed."

EIT AIMS TO BUILD ON THE MOON

Aikenhead was instrumental in putting Canadian satellites and astronauts in space. But Newsha Haghgoo, EIT, wants to build on Aikenhead's pioneering work by landing on the moon, where she also hopes to contribute to the construction of lunar habitats. However, she anticipates that she will be invited to an analog mission before she gets to place her feet on the lunar surface. "Analog missions serve as immersive environments that simulate the living conditions of



Bruce Aikenhead was one of 33 Canadian engineers who went to work for NASA in the late 1950s and 1960s after the cancellation of the legendary Avro Arrow.

During the early 1970s, Bruce Aikenhead was part of the team that developed the Canadarm. At his suggestion, the famous Canada logo was draped on the tool. Photo: NASA

ANITA SEGRIE 03/31/80

Pb/CA - AH

ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF ONTARIO

APPROVED AUG 13 1974

THIS RECORD MICROFILMED F 2329-74

0035850

PROFESSIONAL ENGINEER

This application will become a legal document, and will be the Association's official information, therefore, it is essential that all parts of it be carefully completed, in type or legible printing. Forward one completed application to: The Registrar, Association of Professional Engineers of the Province of Ontario, 236 Avenue Road, Toronto, Ontario, M5R 2J5.

NAME: AIKENHEAD, Bruce Alexander (surname) (full given names)

HOME AIKENHEAD, Bruce A. PRESENT POSITION: Engineering Specialist

NAME OF COMPANY: RCA Ltd

MAX. 25/75 (H0) BUSINESS ADDRESS: P.O. Box 800

TELEP. STE. ANNE DE BELLEVUE, QUEBEC

TELEPHONE NUMBER:

BIRTH PLACE Edsberry, Alberta BIRTH DATE: 22 Sept 1923 CITIZENSHIP: Canadian

I HEREBY MAKE APPLICATION AS INDICATED BELOW AND I UNDERSTAND THAT THIS MAY BE SUBJECT TO RECLASSIFICATION BY THE REGISTRAR

To be registered as a professional engineer under The Professional Engineers Act.

To be recorded as a Graduate Engineer-in-Training under The Professional Engineers Act

To be recorded as a candidate proceeding to write such examinations as may be prescribed for admission to practice.

1959-1962 'Aerospace Technologist' Manned Spacecraft Center, NASA Langley Field, Virginia

Responsibilities: - Assistant Branch Head of Flight Operations Branch. Responsibilities included preparation of specifications for Mercury Spacecraft Procedures Trainers and for the Flight Controllers Tracking-Station Procedures Trainer; technical coordination of their development, installation and operation. Participated in development of other astronaut training devices and in Project Mercury Operations planning.

Aeronautical engineer Bruce Aikenhead, who worked on the Avro Arrow and the Mercury and Gemini projects at NASA, applied for PEO licensure in 1974 and retired his licence in 1993.

space, providing invaluable insights into the challenges that astronauts might face," Haghgoo explains.

Haghgoo is currently a project management engineer for the High-Altitude Aerosols, Water Vapour and Clouds (HAWC) mission and WildFireSat mission at the Space Utilization Directorate at the CSA. HAWC, a Canadian satellite mission scheduled to launch in 2031, will provide critical data to support extreme weather prediction, climate modelling and the monitoring of weather and climate disasters. And WildFireSat, scheduled to launch in 2029, will support the active monitoring and management of wildfires in Canada.

"We're utilizing space technology to benefit people living on Earth," observes Haghgoo. "In Canada, wildfires pose a significant threat, particularly for Indigenous Peoples in northern regions who are disproportionately threatened by wildfire smoke. The real-time utilization of technology can provide substantial assistance to these communities."

Space has been on Haghgoo's mind from a young age. Haghgoo earned her undergraduate degree in civil engineering at U of T because she aspired to build homes on the moon; appropriately, Haghgoo's undergraduate capstone project focused on remote First Nations housing design. "I wanted to learn how to create sustainable, habitable structures in remote, off-grid regions with limited resources," recalls Haghgoo. "Then I pursued a master's in mechanical engineering to enhance my ability to contribute to the construction of sustainable and resilient lunar habitats."

Haghgoo suspects her extensive research and leadership experience helped her get her foot in the door at the CSA, where she initially completed an internship with

Newsha Haghgoo, EIT (third from left), and the rest of her team at the 2023 Space Generation Fusion Forum

the project management team at the Earth Observation Service Continuity. Indeed, Haghgoo has participated in numerous ongoing research teams across the world, including collaborating extensively with the Space Generation Advisory Council as a space exploration project group co-leader and also serving as a delegate at the International Astronautical Congress (IAC) in 2022, the United Nations Committee on the Peaceful Uses of Outer Space in both 2022 and 2023, the Space Generation Congress in 2022 and the Space Generation Fusion Forum in both 2022 and 2023.

Many of Haghgoo's projects are internationally collaborative, with Haghgoo securing partnerships with, among others, Airbus, the Luxembourg Space Agency and the University of Toronto Aerospace Team. But perhaps just as close to Haghgoo's heart was a project that researched spacesuits specifically for women's bodies. "Only 11 per cent of astronauts have been women," notes Haghgoo. "There is a substantial data gap that must be addressed when designing space technologies for mixed-crew missions. The participation of women in spaceflight is on the rise, with plans for equal representation on future missions to the moon and Mars, as well as for commercial spaceflight. Prioritizing research on female health in space and the development of countermeasures to reduce risks is imperative."

For their research, Haghgoo and her team were awarded the Special Recognition Award from the International Space Safety Foundation and International Association for the Advancement of Space Safety in the Netherlands. The CSA has been interested in Haghgoo's research, sponsoring Haghgoo to present additional research through the International Space Education Board at the IAC in 2022.

For Haghgoo, her next project, which she'll be presenting at the IAC in Milan, Italy, may be the most exciting. Project LUNEX-SpaceHomes, which Haghgoo initiated, aims to develop sustainable livable environments for people on the moon. "We will be harnessing the power of AI and machine learning in every aspect of this project, from data collection and analysis on the moon's surface to determine the optimal locations for lunar habitats, to leveraging generative AI designs to optimize their structures. We'll also be using 3D printing to bring these designs to life," says Haghgoo. "That's something I'm very interested in because I can combine my degrees, and I've always dreamed making homes for people on the moon."

If all goes according to Haghgoo's plans, she'll one day have a chance to visit a lunar habitat she helped design. **e**



Newsha Haghgoo recognizes that much of the success she's enjoyed in her young engineering career is due to extensive teamwork.



Are you involved in your local PEO chapter?

Make note of the upcoming chapter annual general meetings.

Scarborough Chapter 2024 Annual General Meeting

Saturday, January 20 at 9 a.m. EST, CICS Function Room,
2330 Midland Avenue, Scarborough, ON
Contact: Samuel P. Jacob, P.Eng. (scarborough@peo.on.ca)

Lambton Chapter 2024 Annual General Meeting

Wednesday, January 24 at 6 p.m. EST, The Four Seasons
By Sheraton, 1498 Venetian Boulevard, Point Edward, ON
Contact: Phil Lasek, P.Eng. (lambton@peo.on.ca)

London Chapter 2024 Annual General Meeting

Friday, February 2 (more details to come via email)
Contact: Aiham Adawi, P.Eng. (london@peo.on.ca)

Lake Ontario Chapter 2024 Annual General Meeting

Friday, February 9 at 6 p.m. EST, Bistro 12,
244 Brock Street South, Whitby, ON
Contact: Fereydoon Diba, P.Eng. (lakeontario@peo.on.ca)

Kingston Chapter 2024 Annual General Meeting

Thursday, February 15, Donald Gordon Conference
Centre, 421 Union Street, Kingston, ON
Contact: kingston@peo.on.ca

Ottawa Chapter 2024 Annual General Meeting

Wednesday, February 28 at 5:30 p.m. EST,
Sala San Marco Event and Conference Centre,
215 Preston Street, Ottawa, ON
Contact: Joe Podrebarac, P.Eng. (ottawa@peo.on.ca)

Windsor-Essex Chapter 2024 Annual General Meeting

Wednesday, March 6 (more details to come via email)
Contact: Hanan El-Sayed, P.Eng. (helsayed@peowindsorsex.ca)

Upper Canada Chapter 2024 Annual General Meeting

Thursday, March 7 at 6:30 p.m. EST
Contact: Steve Stang, P.Eng. (uppercanada@peo.on.ca)

Thousand Islands Chapter 2024 Annual General Meeting

Saturday, March 9 at 6 p.m. EST, The Mills, 123 Water Street, Brockville, ON
Contact: Ahmad Khadra, P.Eng. (thousandislands@peo.on.ca)

Willowdale/Thornhill 2024 Annual General Meeting

Tuesday, March 12 (more details to come via email)
Contact: Debasis Dey, P.Eng. (debasis1962@gmail.com),
or Mitch Lipton, P.Eng. (willowdale-thornhill@peo.on.ca)

North Bay Chapter 2024 Annual General Meeting

Thursday, April 18 (more details to come via email)
Contact: Lindsay Keats, P.Eng. (northbay@peo.on.ca)

PEA Amendments Simplify Complaints Process

A provincial omnibus bill passed by the province in December 2023 updated various administrative functions at PEO, including simplifying PEO's complaints process.

By Adam Sidsworth

With the passing of the omnibus *Less Red Tape, More Common Sense Act*, which received royal assent on December 4, 2023, various statutes were amended, including the *Professional Engineers Act* (PEA); amendments to the PEA took effect immediately. The majority of the changes were requested by Council in February 2022. They support PEO's shift to following modern best practices by regulatory bodies in Ontario and Canada, especially in terms of collecting information from licence holders, how PEO communicates with licence holders and how PEO conducts complaints investigations.

The following are among the changes made to the PEA:

- Subsection 7(1) is amended to enable PEO to make regulations in the future with respect to requiring certain types of information from licence holders. This will eventually strengthen PEO's ability to track the area(s) in which licence holders declare they are practising, thereby addressing a key recommendation from the coroner's report into the death of Scott Johnson (see "Radiohead coroner's inquest recommendations considered by PEO Council," *Engineering Dimensions*, January/February 2020, p. 8);
- PEO is now authorized to communicate with licence holders, applicants and other stakeholders electronically, personally or by mail when they are granted a hearing by the Registration Committee, notified of a decision by the Complaints Committee (COC) or sent other specified notices under the PEA. Previously, PEO could communicate in these instances only by mail or personal service. This now allows PEO to join the communication best practices of many Canadian regulators;
- The registrar will have the flexibility in the new section 46 to prescribe certain forms for various regulatory purposes, without having to seek Council approval in each instance; and
- At the initiative of the province, most references to "attorney general"—the cabinet minister currently responsible for PEO and its governing legislation—are now replaced with the generic title "minister."

CHANGES TO PEO'S COMPLAINTS PROCESS

Also notable among the changes is an amendment to subsection 33(10) of the PEA, which deals with the handling of registrar's investigation reports (RIPs). The provision has been simplified to allow the registrar to submit investigation reports directly to the COC.

One of PEO's key regulatory responsibilities is the investigation of licence and certificate holders for possible cases of professional misconduct or incompetence. The COC is required to investigate complaints about the actions of professional engineers or businesses authorized to provide professional engineering services to the public. Complaints can be submitted by any member of the public, including members of PEO. Following the investigation, the COC may refer the complaint to the Discipline Committee, may decide to not refer the complaint or may take such other action as is appropriate and that is not contrary to the legislation.

The registrar also has the power, when the statutory requirements are met, to issue a RIP. This investigation is conducted by an investigator appointed by the registrar. The investigator has the power, among other things, to examine the subject of the investigation under oath and to demand production of documents. When the investigation is complete, the investigator will write a report that has been traditionally delivered to the COC. Prior to the December 2023 PEA amendments, the COC was required to begin a brand-new investigation when it received each RIP. The amended PEA now allows the COC to eliminate the new investigation and to consider the RIP directly.

"The amendments allow the COC to make a decision based on the RIP alone," notes Leah Price, PEO's senior counsel, regulatory compliance. "This eliminates an unnecessary bureaucratic step, increases efficiency and allows matters to be dealt with more quickly. Fairness to the practitioner(s) affected is ensured by the safeguards inherent in the registrar's investigation process."

Price further notes that the decision-making powers of the COC remain the same, meaning it will continue to either forward investigations to the DIC, dismiss investigations outright or consider other remedial action.

For more information on PEO's complaints process, visit PEO's website. [e](#)

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Council to Examine 4-Year Experience Requirement

By Nicole Axworthy

560th Meeting, November 16 and 17, 2023

At its November meeting, Council approved a policy development plan to examine the current four-year experience requirement for professional engineering licensure. The plan will use PEO's policy development framework, which includes a detailed policy impact analysis.

PEO currently has both a time-based requirement and a competency-based assessment (CBA) to determine if a prospective applicant meets the experience requirement for P.Eng. licensure. As of May 15, 2023, a prospective applicant for a P.Eng. licence must meet these two conditions to be eligible to apply.

Given Council's recent adoption of CBA, the motion suggested that it is appropriate to review the need for the current time-based experience requirement. "Such changes could improve the fairness and efficiency of the licensing process by reducing potential barriers to licensing eligibility," the motion read.

At its September 2023 meeting, Council passed a motion allowing PEO to consider parallel experience requirements to CBA. The motion also asked the Regulatory Policy and Legislation Committee (RPLC) to provide Council with a plan and timeline for involving Experience Requirements Committee experts to consider introducing an apprentice/intern pathway as an alternative to CBA and to consider reducing the four-year experience requirement for all experience pathways to licensure.

The RPLC discussed Council's September motion at its October 27, 2023, meeting and noted the time-based experience review conducted by the Time-Based Experience Group (TBEG), a subgroup of the National Admissions Officials Group formed to share ideas, research and identify opportunities for potential changes or a reduction of the time-based experience requirements for P.Eng. licensure across Canada. The group is comprised of representatives from PEO and engineering regulators of Alberta, British Columbia, Saskatchewan, Quebec and Prince Edward Island and has been meeting monthly.

The preliminary TBEG recommendations in September 2023 endorsed strengthening the CBA system and moving toward a time-based experience recommendation, rather than a requirement. TBEG plans to issue a final report and recommendations to the Engineers Canada CEO Group this month. The RPLC agreed that PEO should wait to see the TBEG report and recommendations before PEO proposes any changes to its current experience requirements.

With the policy development plan approved, PEO will begin work, starting with a policy impact analysis and legal analysis of the *Professional Engineers Act* and regulations.

COUNCILLOR TRAINING PROTOCOL

Council reviewed and approved the *2024 Councillor Training Protocol*, which clearly outlines the processes, criteria and rules to coordinate councillors' training requests. The protocol was initiated by the Governance and Nominating Committee (GNC) to allow councillors to apply for governance training courses that are focused on key responsibilities for board directors. The updates to the protocol from the previous year include dates, times and budget. With the draft operating budget approved by Council at the same meeting (see below), \$70,000 was budgeted for course fees and associated expenses for councillor training.

UPDATED GUIDELINE

Council approved the publication of the revised guideline *Professional Engineers Providing Acoustical Engineering Services in the Land-Use Planning Process*. Last revised in 1998, Council authorized the Professional Standards Committee in 2020 to update the guideline, with most updates relating to changes in legislation and standards of practice (see p. 11).

OPERATING AND CAPITAL BUDGETS

Council unanimously approved the draft 2024 operating and capital budgets, as recommended by the Audit and Finance Committee. A first draft of the budget was presented to Council at its September 2023 meeting, and as was clarified at that meeting, the 2024 budget is projected to be in a deficit. Council provided guidance to fund the deficit from PEO's surplus reserve.

Total revenues in 2024 are budgeted at \$34.6 million and total expenses to sustain core operations are budgeted at \$34.7 million, resulting in an excess of expenses over revenues of \$124,000. In addition to these expenses, an additional spend of \$796,000 is budgeted for special projects and Council initiatives. The spend for the strategic plan projects is budgeted to be \$3.5 million, resulting in an excess of expenses over revenues of \$4.4 million, which will be funded from PEO's cash reserves.

The 2024 budgeted revenue is expected to be \$34.6 million, representing a decrease of \$1.6 million, or 5 per cent, compared to the 2023 forecasted revenue. The main factor contributing to the fall in revenues is a decrease of \$2 million, or 20 per cent, in application, registration and other fees resulting from an expected decrease of over 50 per cent in the number of applications in 2024 (2800 in 2024 compared to 6400 in 2023); and a reduction in the number of engineering interns (10,100 in 2024 compared to 15,500 in 2023). This is due to changes in PEO's licensure process.

In addition, the budget anticipates a reduction of \$446,000, or 18 per cent, in PEO headquarters revenues due to the possibility of a tenant not renewing their lease for approximately 19,000 square feet, which is up for renewal in 2024.

This fall in revenue is partially offset by:

- An increase of \$801,000, or 70 per cent, in sponsorship revenue for PEO related to the insurance affinity agreement between Engineers Canada and Meloche Monnex Inc.;
- An increase of \$102,000, or 0.5 per cent, in P.Eng. revenues; and
- An increase of \$19,000, or 10 per cent, in chapter revenues.

The 2024 budgeted expenses for core operations are expected at \$34.7 million compared to \$29.5 million in 2023, which represents an increase of \$5.2 million, or 18 per cent, over 2023 forecasted expenses. In addition to overall inflationary pressures, the key reasons contributing to the increase are:

- An increase in employee salaries and benefits and retiree and staff future benefits of \$3.3 million over the 2023 forecast due to an increase in headcount and a merit increase of 4 per cent in 2024 (the same as the merit increase for 2023). The full-time headcount in 2024 is expected to be 142 compared to a budgeted headcount in 2023 of 136;
- An increase of \$506,000, or 33 per cent, in spending for computers and telephones for various software service contract renewals, software application licence costs and hardware leasing expenses. These costs also include funding for various new initiatives such as an emergency broadcast and notification system, meeting room reservation functionality and Zoom licences for external broadcasts and webinars;
- An increase of \$454,000, or 122 per cent, for volunteer business expenses for meals, mileage, accommodation and travel-related spending due to an increase in in-person meetings and events;
- An increase of \$449,000, or 91 per cent, for consultants for services such as the Council workshop, HR consulting, IT security and investment management; and
- An increase of \$348,000, or 20 per cent, for purchased services, largely due to costs for catering, event meals, accommodation, audio-visual equipment and travel-related expenses for various in-person events such as the hybrid 2024 Annual General Meeting, Volunteer Symposium, Council workshop, Regional Congresses, Chapter Leaders Conference, etc. In addition, higher costs for the elections officer and exams are expected.

The above increases are partially offset by a:

- Reduction of \$224,000, or 22 per cent, for the spend on Engineers Canada due to a lower assessment rate per member. The rate per member for 2024 is \$8 compared to \$10.21 in 2023; and
- Reduction of \$48,000, or 11 per cent, in the spend on professional development.

In a separate motion, Council unanimously approved the annual borrowing resolution. The total capital budget for 2024 is \$1 million compared to \$388,000 in 2023. It is comprised of capital improvements to 40 Sheppard and tenant inducements (\$664,000) and facilities-related capital expenditures (\$375,000).

An amount of \$604,000 has been budgeted for capital improvements that are part of common area maintenance costs, which are recoverable from tenants and recommended by PEO's property manager. The planned improvements in 2024 include \$165,000 for parking garage repairs; \$138,000 for repairs to the planter box over the hydro vault; \$127,000 for a new access card

system; \$72,000 for overhauling the chiller; and \$55,000 for replacing the five heat pumps, etc. A total amount of \$60,000 has been budgeted for leasehold improvements for the vacant space on the second floor.

The facilities-related expenditures for 2024 are \$125,000 for accessible automatic doors; \$125,000 for the fifth- and eighth-floor working space renovation; \$75,000 for soundproofing of offices and meeting rooms; and \$50,000 for office furniture and contingencies.

BORROWING RESOLUTION

Council passed a motion to renew PEO's existing operating line of credit with Scotiabank until January 31, 2025. This includes an overdraft of up to \$250,000 and the use of corporate credit cards with an aggregate limit of \$120,000.

COUNCIL GOVERNANCE SCORECARD

Council unanimously approved a new Council Governance Scorecard, which was developed to support Council's use of evidence-based information in its decision-making process through quantitative indicators (see p. 35).

AGM DATE AND LOCATION

Council passed a motion to host the 2024 Annual General Meeting (AGM) in Barrie, ON, on April 20. At its September 2023 meeting, Council decided to endorse a hybrid format for PEO's 2024 AGM, which means the event will offer both virtual and in-person attendance options (see p. 9). With the location and date approved, staff will move forward with making logistical and other preparations for the event.

ENGINEERS CANADA BOARD NOMINATIONS

At its November meeting, Council approved a revised process for nominating PEO representatives for appointment to the Engineers Canada (EC) board of directors. At its February 2023 meeting, Council nominated a PEO representative for appointment to the EC board for a three-year term. During a discussion of the item, there was consensus that there is a need to re-assess the nomination process, which was last approved by Council in February 2020. Specific areas discussed by Council and suggested for review included changing the vote threshold requirement such that successful candidates must receive a majority of the votes cast, instead of a plurality; and consideration of EC's board competency profile in the nomination process.

Following consultation with Engineers Canada, the GNC worked with staff to revise the process document to help satisfy councillors' concerns. Council will use the revised process to fill two current Ontario representatives on the EC board whose terms will end at EC's May 2024 Annual Meeting of Members.

CREATION OF NEW ADVISORY GROUP

Council passed a motion to stand down the Licensing Committee, Enforcement Committee and Professional Standards Committee, effective December 31, 2023, with thanks and appreciation to all current and previous members.

This decision follows a March 2023 Council motion that directed staff to develop "one or more advisory groups to replace the Licensing, Enforcement and Professional Standards committees," following a series of governance directions to bring clarity to how PEO will use committees in its new governance system, including using only the regulatory committees mandated by legislation. Staff will create and oversee one advisory group, the Strategic Stakeholder Advisory Group (SSAG). Its mandate will be to provide input, guidance and recommendations to staff as required on potential strategies and activities related to PEO's regulatory mandate and help to ensure a diversity of stakeholder perspectives are taken into consideration when positions or initiatives are being considered.

Using only one advisory group, made up of 15 to 20 representatives who reflect the diversity of the profession and the province, allows for PEO to

have a singular, primary and centralized resource for all regulatory-related issues that require stakeholder engagement and that can support facilitating dialogue with other key stakeholders or external subject matter experts. This approach aligns with Council's commitment to enhancing PEO's strategic capabilities through increased engagement with PEO stakeholders.

CEO/REGISTRAR PERFORMANCE REVIEW CHANGES

Council approved changes to the CEO/registrar performance review process so that it aligns with the timelines of PEO's strategy and operational planning and staff merit program. The CEO/registrar's performance evaluation is conducted on an annual basis and follows a timeline such that the goal-setting process began in March, approval of goals occurred in May, a mid-year review occurred in October and a year-end review occurred the following March.

The new, approved process includes drafting operational plan goals in September/October, having the operational plan approved by Council in November and the CEO/registrar goals selected from the annual operational plan in January/February, with a mid-year review in June and a year-end review in October/November. The Human Resources and Compensation Committee will work with the CEO/registrar to follow the new process starting this year.

AGM SUBMISSION REVIEW

Council reviewed a staff report on the licence holder submission received at the 2023 AGM. Licence holder input is important to the work of a self-regulating body. However, motions made at the AGM, while informative, do not bind Council or the CEO/registrar. That said, the policy approved by Council in March 2020 does require staff to provide a report to Council following the AGM concerning the motions that have been passed, to assess lawfulness and feasibility considering Council's current work and priorities.

The submission concerned a motion submitted to the March 2023 Council agenda that sought to repeal a resolution passed by Council during the COVID-19 lockdowns requiring that staff show proof of vaccination against the COVID-19 virus before entering PEO's premises or attending any PEO function. The motion also questioned the scientific validity of COVID-19 vaccines and sought to delete any collected medical information related to the vaccine.

The licence holder submission asked that:

1. The Council motion in question be formally retracted;
2. Council release a formal statement rejecting the inclusion of misinformation in its business;
3. Councillors be required to engage with governance education and/or obtain governance designations before participating in Council business; and
4. Future potential councillors receive communication before elections regarding desired qualifications and required duties, and in the lead-up to elections, members should be notified in writing of candidate status with PEO (e.g. practising status, disciplinary history, etc.) and any potential conflict of interest.

The staff report to Council noted that the motion in question was added by a councillor under rule 7.4 of Council's Special Rules of Order, which allows a member of Council to add an item to the meeting agenda by submitting it to the Secretariat at least two weeks before the meeting. The Special Rules are adopted annually by Council to supplement or supersede its parliamentary authority. At the March 2023 Council meeting, however, Council voted to remove the motion in question from the agenda.

The staff report noted that the licence holder submission regarding misinformation in Council business points to a larger structural issue regarding the process by which matters come before Council. In November 2020, Council endorsed the principle that the task of developing recommendations would be delegated to professional staff, while Council would provide a higher level of direction and control. As approved by Council, all regulatory and governance items must be first dealt with by the four governance committees before reaching Council.

In the case of the motion at issue, its addition to the Council agenda via rule 7.4 resulted in a circumvention of the triaging and vetting process. Therefore, the GNC has been tasked with reviewing the Special Rules, and staff will recommend that rule 7.4 be replaced with a process for councillor submissions that aligns with the governance process established by Council.

Other concerns raised in the licence holder submission are also being addressed. Councillors are now required to undergo a "Board Basics" governance education training program in advance of elections. Additionally, when accepting their nomination, candidates must acknowledge they have read the Councillor Code of Conduct and familiarized themselves with the role and responsibilities. As part of PEO's ongoing election reform, GNC has recommended that narrow eligibility criteria be developed for prospective candidates.

AWARDS CHANGES

Council passed a motion to discontinue PEO's V.G. Smith Award and S.E. Wolfe Thesis Award. Currently, PEO has three remaining award programs, all of which were suspended by Council and under review following an activity filter project in 2019 that assessed over 90 activities of committees, subcommittees, task forces and chapters to determine if they supported PEO's regulatory and governance priorities. Almost a third of the activities were assessed as fitting neither into PEO's regulatory nor governance activities, including PEO's awards.

The Smith and Wolfe awards were given to applicants for licensure who had written exams or theses as part of their application under PEO's legacy licensing process, which was phased out in May 2023. Following changes to PEO's licensing application process in 2023 to comply with the amendments to the *Fair Access to Regulated Professions and Compulsory Trades Act*, staff recommended that the Smith and Wolfe awards be discontinued because, among other reasons, the award criteria are no longer aligned with PEO's licensing process.

COUNCIL ACTIVITIES AND ISSUES REGISTRY

Council passed a motion asking the GNC to provide Council with a plan for developing and maintaining a Council Registry of Activities and Open Issues for the April 2024 Council meeting. Currently, there exists a Council Decision Log, but no log of activities, open issues and future considerations. The vision is that the registry would assist Council in staying on top of important activities and open issues and provide a convenient summary of issues for prioritization consideration and a parking lot for future work items that might otherwise be forgotten.

ELECTED COUNCILLORS TERM LIMITS

Council passed a motion for staff to prepare a report on the potential to increase or potentially remove the term limit for elected councillors by April 2024. The motion noted that this change would provide greater equity with the lieutenant-governor-appointed councillors who currently do not have term limits. **e**



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