ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

ENGINEERING ONTARIO FORWARD

2025 Ontario Policy Recommendations

ASSOCIATION OF CONSULTING
ENGINEERING COMPANIES-ONTARIO
(ACEC-ONTARIO)

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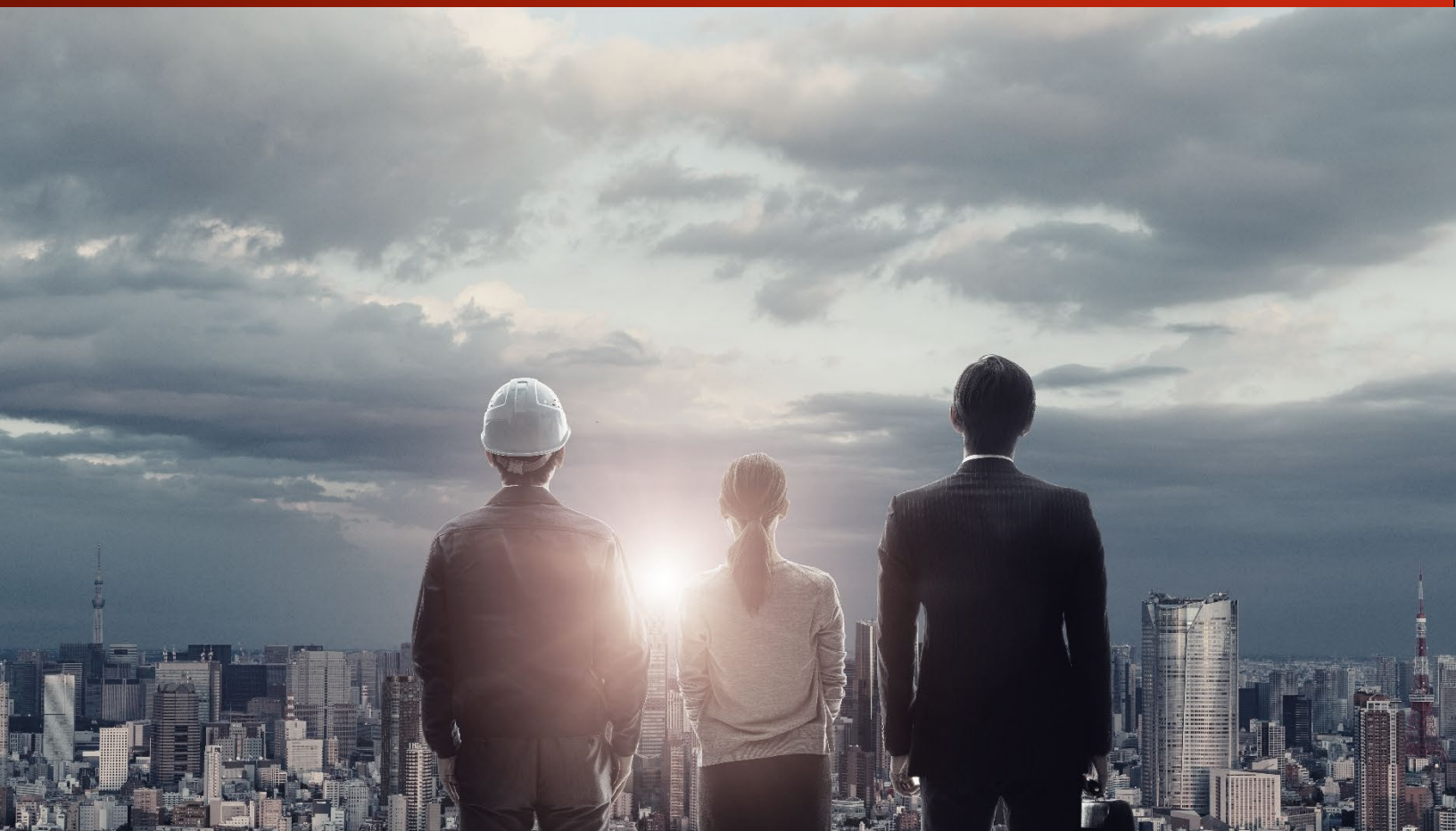

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

Our member firms have over **400** offices, located in every corner of the province, often with deep ties to local communities and economies. They employ more than **27,000** professionals and contribute nearly **$10 billion** to the Ontario economy.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

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ABOUT ACEC-ONTARIO

Celebrating **50** years in 2025, the Association of Consulting Engineering Companies-Ontario (ACEC-Ontario) is proud to be the non-profit industry advocacy association representing the business interests of nearly **140** consulting engineering firms.

Our member firms make Ontario's public infrastructure viable and sustainable by providing project designs, preparing environmental and social studies, and supervising and inspecting construction work, among other crucial tasks. The work of Ontario's consulting engineering companies is deeply embedded in the fabric of our society.

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Recommendations

ACEC-Ontario member firms are committed to helping solve Ontario's infrastructure challenges and look forward to working together with the provincial government as it builds a stronger Ontario for today and for the future. Indeed, we have the technical skills and expertise needed to help the government make informed decisions.

To that end, ACEC-Ontario and its member firms have identified a series of recommendations that would enable the government to:

- **Deliver more projects on-time and on-budget;**
- **Reduce repair costs and keep the economy moving forward;**
- **Ensure a strong, diverse workforce able to meet challenges; and,**
- **Protect the public interest.**

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

DELIVER MORE PROJECTS ON-TIME AND ON-BUDGET

Standardized Contracts

Eliminating inefficiencies helps get projects designed and built faster, minimizing its impact on worsening congestion in major municipalities across Ontario. To ensure the smooth delivery of infrastructure projects, sound, well-structured contracts are essential. This is why we promote professional services agreements based on a collaborative approach as they foster a healthier and more competitive business environment. They respect government pressures, such as cost control and project delivery, along with the needs of firms.

The consulting engineering industry has a long-standing history of working together with governments and stakeholders to develop these types of agreements. At the national level, ACEC-Canada is a member of the Canadian Construction Documents Committee, which develops, produces, and reviews standard construction contracts, forms, and guides.

At the local level, ACEC-Ontario has worked in partnership with the Municipal Engineers Association to develop and maintain a Standard Client/Engineer Agreement for Professional Consulting Services. This agreement, which reflects industry standards and business practices, gives member firms and clients a clear picture of project timelines and budgets.

The latest, enhanced version of the agreement was launched in November 2024.

Having similar types of contracts available to ministries and agencies would help ensure there is a pool of bidders with the required experience and expertise needed to deliver critical projects. It would also assist in efficient project completion.

Recommendation: The Ontario government work with ACEC-Ontario to develop standardized contracts that include fair and reasonable terms and conditions.

Appropriate Risk Allocation

Consulting engineering firms carry professional liability insurance to cover claims that may arise from a design error or omission in the provision of their services. While there are differences in the exact terms and conditions of each firm's policy, there are some conditions and exclusions that exist in all professional liability policies that insurers are not willing to change. The challenge consulting engineering firms face is when project owners try to force firms to accept risks and assume additional liability that historically would be held by owners and would not be covered by the consulting engineering firm's professional liability insurance.

For example, indemnity clauses that are not negligence-based are not covered by professional liability insurance. In fact, non-negligence-based indemnity is outlawed in some US states (ex. Texas Anti-Indemnity Statute that prohibits broad-form indemnity clauses in contracts). As well, clauses that create an elevated standard of care create unclear performance standards and is often uninsurable. Elevated risk often gets included in price considerations and causes bidding delays due to ongoing negotiations.

In recent years, ministries and agencies have procured projects that increasingly shift significant risk from themselves to consulting engineering firms and other members of the project team. This is a concern for a couple of reasons. First, consulting engineers do not have the financial or legal resources needed to bear a high or disproportionate level of uninsured risk.

Second, the insurance industry has responded to significant claims in recent years by making it more difficult and costly to secure project-specific insurance policies for infrastructure projects. Projects such as P3 transit projects or the Ottawa Phase 1 LRT are no longer insurable due to the risk transference language in the contracts.

Finally, ministries and agencies could be left holding the cost, risk, and liability that was previously believed to be transferred. Instead of managing risk, ministries and agencies are simply contributing to shrinking pools of high-quality bidders, resulting in higher costs and schedule delays. Indeed, firms may not bid on projects due to poor risk allocation.

Recommendation: All Ontario government ministries and agencies ensure that the level of risk transferred is appropriate by allocating risk to the member of the project team best able to handle and ensuring that no risk is transferred that is not covered by insurance.

Procurement Models

To procure infrastructure projects, provincial ministries and agencies currently use various models, such as design-bid-build (DBB), design-build (DB), or Public-Private Partnerships (P3s). However, there is an opportunity to adopt additional procurement options for those

projects that are more unique, complex, and long-term. More recently, Progressive Design Build, Integrated Project Delivery and Alliance contract models have been gaining in popularity as more collaborative delivery approaches.

For efficient and effective project delivery, the selection of the most appropriate model is essential, however there is no set criteria informing this decision. Using the wrong model, or taking too long to select the appropriate model, will lead to schedule delays and cost overruns. It is therefore vital that a guide be developed that highlights all the available procurement models, along with an appropriate decision-making process.

To address this gap, the Construction and Design Alliance of Ontario (CDAO) is developing a best practices document that will outline the industry's recommended guidelines in procurement. It will enable officials to compare and contrast methodologies, as well as identify best practices that can enhance the delivery of current and future projects.

Recommendation: The Ontario government work with ACEC-Ontario and the CDAO in the development of a best practices procurement guide and encourage its use by provincial ministries and agencies once completed.

According to a 2021 study published by the Construction and Design Alliance of Ontario (CDAO), public sector clients need to incorporate greater pre-project planning at the Request for Proposal (RFP) and design stages, along with more upfront investment. Doing so will help reduce schedule delays and cost overruns. For example, an error that would cost $10,000 to address during construction would only cost $100 to address during pre-planning, or $1,000 to address during the design phase.

Early Integration of Project Engineering and Design

When it comes to building infrastructure, consulting engineering firms play a critical role, supplying the design and professional services necessary to move a project forward. They also help governments with data driven decision-making, which in turn drives better results.

Unfortunately, provincial and municipal governments rarely commit sufficient resources to pre-project planning and design. This leads to negative impacts that arise during the construction and maintenance of projects.

Recommendation: All Ontario government ministries and agencies adopt the early integration of engineering and design for all projects to ensure that the value of the government's investment in infrastructure is maximized.

Providing Transparent and Timely Project Pipelines

Knowing what projects are coming to market and when is a critical tool for consulting engineering firms to be able to effectively respond to government RFPs.

Infrastructure Ontario (IO) and Metrolinx are examples of government agencies that provide relevant and timely information on its pipeline. In 2024, the Ministry of Transportation developed an engineering pipeline list with a commitment to regular updates. Municipalities, such as the Region of Halton, the City of Greater Sudbury, and the City of Ottawa, are also sharing information on upcoming projects with the industry.

As noted by IO, project pipelines "help potential local and global private-sector partners organize their time and resources to make sure Ontario gets robust, innovative, and competitive bids for its P3 infrastructure projects." Indeed, it is in the government's best interests to have as many high-quality bids as possible on a project.

In addition, by knowing what projects are on the horizon, firms can ensure that they are fully staffed to meet project demands. Finally, early identification of opportunities provides member firms with the required time to properly investigate the opportunity to understand what is required to address the needs and challenges of the project in hand to prepare a better response when the RFP is released.

Unfortunately, there are government agencies and ministries who continue to be reluctant to share information on future projects with the industry. Not knowing when projects are coming to market means that consulting engineering firms will be hard pressed to meet RFP deadlines, which in turn will jeopardize the government's ability to deliver projects on-time and on-budget.

Recommendation: All Ontario government ministries and agencies provide the consulting engineering sector with project pipeline information on a regular basis and in a timely manner to enable consulting engineering firms to help the government successfully implement its infrastructure plan.

Qualifications Based Selection

When it comes to procuring consulting engineering services, ministries and agencies traditionally choose the lowest bid (or other methods that place significant downward pressure or weighting on engineering costs), and not the strong technical proposal resulting in firms reducing their fees to secure the assignment. This is not sustainable as firms will not be able to stay in business if they are required to consistently reduce their fees.

Moreover, when firms cut prices to win work, it reduces the engineering effort invested at the critical early stages of a project prior to tendering / construction. This does not result in the best lifecycle value for the ministry, agency or constituents, as it can cause increased construction schedules and costs as early as a couple years after project initiation.

Selecting professional services based on competency and qualifications, at prices that are fair and reasonable, ensures a greater likelihood of successful project outcomes. This approach, also known as Qualifications-Based Selection (QBS), offers several benefits, including:

- Reduced cost overruns and schedule delays;
- More innovative designs; and,
- Optimal performance of projects for years to come.

In September 2023, the Ontario Chamber of Commerce released its report on procurement modernization "Power of the Purchase Order". In this report, the **Chamber noted:**

> *"One version of collaborative procurement is qualifications-based selection (QBS), an approach increasingly used to procure professional services such as architecture and engineering. With QBS, the buyer will select providers based on their qualifications and only then negotiate contract terms – similar to how employees are typically hired based on their qualifications for a job. QBS ensures contracts are awarded to the most qualified providers, while avoiding a race to the bottom on pricing, and ensures project specifications are developed by and with experts. Evidence suggests QBS leads to fewer project delays and cost overruns, and better outcomes."*

This best practice has been mandated by law in the USA through The Brooks Act (1972), and more recently in the City of Calgary and Province of Quebec. British Columbia's Ministry of Transportation and Infrastructure uses an acceptable variation of QBS.

Recommendation: The Ontario government work with ACEC-Ontario to explore how Qualifications-Based Selection practices can be established within each ministry/agency.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

REDUCE REPAIR COSTS AND KEEP THE ECONOMY MOVING FORWARD

Fostering Resilient Infrastructure

Ontario faces climate impacts, with flooding, fires, and extreme winds posing risks to public safety, causing additional stress and damage to Ontario's aging infrastructure. Investing in resilient infrastructure can mitigate disruptions to Ontario's economy and avoid future infrastructure failures

Resilient infrastructure supports economic growth, helps maintain the movement of people and goods during extreme weather, and improves post-event recovery by allowing quicker and lower-cost restoration. Indeed, post-event repairs to infrastructure are always completed at a premium. Investing now to prevent future failures is a money-saving activity, especially when one considers the overall life cycle cost of the infrastructure.

Incorporating resilience into infrastructure design, making the necessary upfront investment in engineering, and implementing climate adaptation plans will help municipalities adjust to and address the effects of climate change while strengthening their infrastructure investments.

Municipalities across the province face challenges with aging infrastructure, and our climate is also experiencing profound changes, both in the present and foreseeable future. This highlights the need for an accurate assessment of the existing infrastructure's resiliency, which is crucial for identifying and mitigating risks and vulnerabilities, especially against climate change. Resilient and well-adapted infrastructure will be less vulnerable to climate events, with less interruption in the level of service and facilitating faster and more cost-effective recovery.

Recommendation: To help provide a reliable and economically stable future, Ontario should consider funding to help municipalities, especially lower-tier, to assess the resiliency of their existing infrastructure against climate change, identify vulnerabilities and risks, set priorities, develop adaptation plans, and integrate into asset management processes.

When resilient infrastructure principles are incorporated at the design stage, the incremental costs are not significant compared to the repair costs after failure. To help empower a more prosperous future, current codes and standards that were developed using historical climate data must be updated to reflect near-future climate conditions. It is essential that these updates are informed by the latest climate data and guided by the most probable scenarios. This will enable engineers and designers to comply with regulatory requirements and provide

precise risk assessments to develop resilient designs.

There are several tools and methodologies used by the industry that can be established as requirements of resilient infrastructure funding programs, such as, but not limited to, the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol, PIEVC High-Level Screening Guide, as well as the recently released Climate Insight website, commissioned by Housing, Infrastructure and Communities Canada. Additionally, the United Nations Office for Disaster Risk Mitigation has published the Principles of Resilient Infrastructure Design Framework, which is being used by jurisdictions around the world to help plan and incorporate resilient infrastructure design.

Recommendation: To help ensure reliable infrastructure, the Ontario government should develop initiatives such as funding programs and updated codes and standards that reflect the changing climate.

Supporting the Energy Transition through Infrastructure Investments

Ontario's power generation system is world-class and is steadily transitioning toward more sustainable and cleaner energy sources. This shift, known as the Energy Transition, is moving away from carbon-based energy for electricity and transportation, towards zero-carbon alternatives such as solar, wind, hydropower, biofuel, waste to energy, and nuclear. As electricity demand in Ontario rises, driven by factors like building electrification, electric vehicles, artificial intelligence, and data centers, the province must invest in modernizing its power transmission and distribution infrastructure.

These investments will involve replacing aging equipment, constructing new distribution lines and substations, expanding energy storage capacity, and upgrading systems to integrate renewable energy projects. A robust, flexible grid is essential for seamlessly incorporating renewable sources, reducing congestion, minimizing outages, and ensuring the reliable delivery of clean electricity to both urban and rural areas. Such investments will also drive economic growth by creating jobs in construction, engineering and skilled trades, while attracting businesses that depend on reliable, affordable and clean energy.

As climate change increases the frequency and intensity of extreme weather events, Ontario's power supply is increasingly vulnerable to disruptions. Modernizing the transmission and distribution system will help build a more resilient infrastructure capable of withstanding these challenges. Investment in smart grid technologies and encouraging distributed generation, for example, will enhance the system's ability to detect faults, quickly isolate affected areas, and restore power more efficiently, thereby minimizing downtime and economic losses. These upgrades will not only address current needs but also position Ontario to better navigate future challenges.

Recommendation: To help meet Ontario's growing energy needs, additional investment in Ontario's power transmission and distribution system are required to integrate clean and renewable energy and modernize aging equipment. These investments will support a stronger economy by creating jobs, encouraging new investment and providing a resilient electricity system throughout the province.

Incentivizing District Energy

To help improve energy efficiency, there is an opportunity to support the development of more district energy systems in new communities or in dense urban areas. District energy systems centralize heating and cooling production, lower greenhouse gas emissions, and reduce costs particularly where they can integrate renewable energy sources such as geothermal, solar, or waste heat. Where there is a strong business case, supporting new district energy systems would not only reduce Ontario's emissions but also create more resilient communities by reducing dependency on individual heating and cooling systems. Supporting district energy systems can support Ontario's growing energy demands while prioritizing sustainability, reliability, and economic competitiveness.

Denmark's 1970s energy crisis drove policies that enhanced its energy security via district energy adoption. District energy systems are now gaining momentum in Canada, inspired by the success of Denmark and other European countries.

Several policy options exist to enable local implementation. Ontario could require new government buildings to connect to these systems, or to be designed as "district energy ready" to enable future connections and reduce retrofitting costs. Cost-saving measures, like Toronto's Development Charge Refund Program and innovative ownership models have proven effective. The Zibi Community Utility along the Ottawa River—a North American first—illustrates success with 50% developer ownership.

It is vital that Ontario take a leadership role in developing energy policies so that the province can be better positioned for future success. By incentivizing district energy systems, Ontario can ensure a more secure energy future.

Recommendation: The Ontario government implement policies that incentivize provincial and municipal adoption of district energy systems.

Provincial-Municipal Fiscal Framework

Ontario has the second highest population growth rate in Canada, demonstrating how municipalities across the province are seen as viable places to live, work and grow. Proper investments in new infrastructure, along with proper ongoing maintenance of existing assets, are central to supporting this growth.

With a capital infrastructure deficit of approximately $5.8 billion, closing Ontario's growing infrastructure gap remains a critical priority.

Municipalities own the majority of Ontario's public infrastructure yet are limited in the financial tools available to them to facilitate proper infrastructure investments. Without new financial tools, municipalities face higher costs of repair and health and safety risks to its residents after infrastructure failures, and an inability to build sufficient new infrastructure to meet housing demands. Without urgent investment, Ontario runs the risk of losing its reputation as a viable, safe place to live.

It is vital to modernize the provincial-municipal fiscal framework, so that municipalities have new tools they need to invest in closing the critical infrastructure gap today, and fuel future economic growth.

Recommendation: The Ontario government work with municipalities to undertake a comprehensive review to modernize the provincial-municipal fiscal framework, to enable critical investments in local infrastructure priorities.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

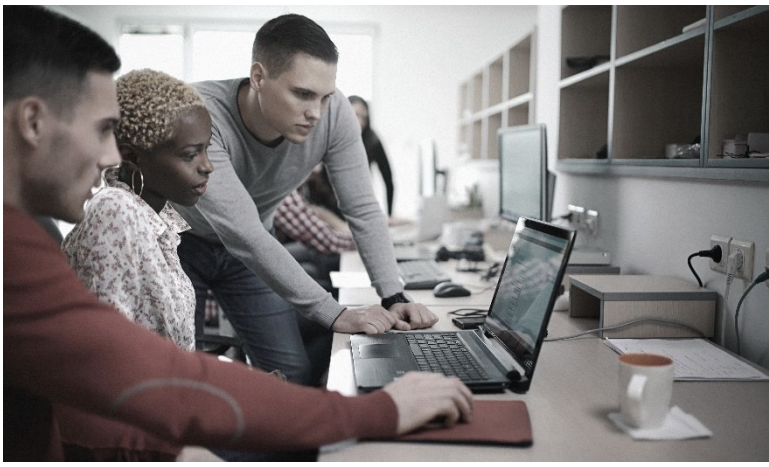
ENSURE A STRONG, DIVERSE WORKFORCE ABLE TO MEET CHALLENGES

Investing in STEM Education

A 2021 study by Stokes Economics highlights Ontario's workforce needs between 2021 and 2030. Ontario will need an additional 198,927 individuals with university-level STEM (science, technology, engineering, and mathematics) degrees. Engineers comprise over 22% (nearly 45,000 individuals) of that need. Separately, Ontario needs 34,361 managers in engineering and computer science.

A lack of investment in STEM university degrees will significantly impact the Ontario economy. It will result in less workers, and therefore less productivity. In a single year, the impact of having 10,000 fewer university-trained workers is estimated to be a loss of $2.35 billion for Ontario's economy, according to a 2021 Stokes Economics study.

Ontario's universities have seen this increased demand, as enrolment in engineering and applied sciences programs has increased by 69% since 2010. Ontario high school students have increased applications to engineering programs by 19% compared to the previous year, according to data from Ontario Universities Applications Centre.



Moreover, the employment rate within two years of graduating a high-demand university program is 95.7%.

Many high-demand university STEM programs require support to meet this demand and fuel Ontario's economic future. For example, the number of qualified applicants to Ontario Tech University's Engineering Management program (MEngM) routinely exceeds the number of seats available.

Recommendation: The Ontario government increase seat allocation for high-demand STEM degrees and provide additional funding to support these programs.

Inspiring STEM Education and Careers

The consulting engineering industry faces persistent challenges in recruiting talent, directly impacting its ability to design innovative and sustainable solutions for public infrastructure. To address this growing workforce demand, it is crucial to

encourage Ontarians to pursue careers in STEM, starting from early education.

Key challenges include an early decline in STEM interest and persistent barriers for marginalized youths. Young girls' interest in STEM often drops in elementary school with further attrition occurring in high school and post-secondary education. Further, low-income and racialized youth face additional hurdles in accessing STEM pathways.

Industry and government support is key to resolving this challenge. Through industry partnerships, students are encouraged to choose STEM as a career path through mentorship programs and scholarship opportunities. Various coalitions exist between industry and educational institutions, which create programs such as National Engineering Month, held in March annually, whereby engineering excellence is showcased and celebrated across various specializations. Government-funded programs like Let's Talk Science, which provides STEM resources for educators, and Visions of Science, which removes STEM education barriers for low-income racialized youth, already demonstrate the potential impact of targeted interventions. Expanding and diversifying such efforts can help build a robust pipeline of future engineers and STEM professionals, ensuring Ontario remains a leader in innovation and infrastructure development.

ACEC-Ontario commends the Ontario government's continued investment in advancing the skilled trades sector, fostering safety and accessibility. To make skilled trades a sustainable career option, it's vital to also support industries involved in every project phase, from engineering to construction.

Investing in these strategies will not only strengthen the consulting engineering industry but also create meaningful opportunities for the next generation of Ontarians.

Recommendation: The Ontario government develop and implement a strategy to inspire STEM as a valuable career choice. The strategy should include options such as curriculum enhancements, tutoring programs for low-income families, and mentorship programs to inspire the next generation of STEM professionals.

Strengthening STEM Workplaces

Ensuring our STEM workforce strengthens our ability to provide innovative solutions to pressing public infrastructure challenges, we need to address the challenges that currently exist in STEM workplace culture. A 2022 WomanACT report highlights in Canadian STEM workplaces, 47% of women and 19% of men experienced inappropriate sexualized behaviour at work. Reports of this nature are generally underreported and can often led to harmful health implications and an increased likelihood of quitting.

Strengthening Ontario's economy relies on safe, welcoming workplaces. Currently, the Employment Standards Act grants a job-protected domestic or sexual violence leave of absence. However, many jobs that support the design and building of Ontario's infrastructure needs are exempt from this job-protected leave of absence.

Recommendation: The Ontario government grant job-protected leave of absence for domestic and sexual violence in all STEM job categories, including manufacturing, construction, and mining.

Sustainable Procurement

Across Ontario, project owners are increasingly modernizing procurement practices to increase the economic and community impact of its infrastructure investments. By procuring services from companies that demonstrate their own investments positively impact local communities, economies, and the environment, the Ontario government substantially increases the value of its capital plan.

The Ontario Not for Profit Network highlights some of these benefits to include training opportunities for individuals experiencing employment barriers, such as people with disabilities, to build economic self-sufficiency and reduce reliance on social programs.

Benefits also include rewarding investment in sustainable and innovative solutions, local jobs, and community benefits. Harnessing our collective purchasing power is an influential path we should explore that will help create measured, system-level change.

Recommendation: The Ontario government work together with the consulting engineering industry to review the use of social and sustainable procurement for infrastructure projects.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

PROTECT THE PUBLIC INTEREST

Enhancing Professional Liability Requirements

The practice of professional engineering carries significant public interest risks. Professional engineers have a duty to safeguard the public welfare, and any failure in that duty can have dire consequences for the people of Ontario. The *Professional Engineers Act* ("the Act") endeavours to create a regulatory framework to manage and mitigate those risks.

A key element in that framework is the requirement for entities that offer and provide professional engineering services to the public to carry minimum levels of professional liability insurance. Such insurance is a risk transfer mechanism that protects the client against the consequences of negligence on the part of the entity providing the engineering services. Professional engineers may work to high standards, but they are still human, and mistakes can happen.

Unfortunately, there is an exception contained in the regulations under the Act which negates that protection and allows engineering entities to operate without insurance. The exception allows for disclosure by the entity to the client that they are not insured in accordance with the Act, and receipt of written authorization from the client to carry out the work regardless. The disclosure does not require the entity to identify or quantify the risks or consequences of uninsured engineering practice. As a result, the client is not providing informed consent. The risks are not managed or mitigated in any way.

The exception was introduced with major Act revisions in 1984, at a time when professional liability insurance was deemed prohibitively expensive for very small engineering firms. Nowadays, affordable professional liability insurance is available to firms of any size and should be viewed as part of the cost of doing business. ACEC-Ontario has two dozen member firms with fewer than 10 staff, and all carry professional liability insurance.

The public interest risk created by this exception is not small. In 2018, the regulator, Professional Engineers Ontario, reported that of the 5,673 entities that were authorized to provide engineering services to the public, **1,290 of them – more than**

20% - were operating without professional liability insurance by relying on this exception. The risk is not borne only by the project owner or client but also Ontarians. The risks of negligent professional engineering work continue long after the work is completed and can impact the welfare of countless people across the province.

There is no other regulated profession in Ontario that allows its practitioners to offer and provide services at arm's length without insurance. An exemption like this in the field of medicine, or any of the related health professions, or in the legal profession, would be untenable.

Recommendation: The Ontario government should repeal subsections 74(2)(d) and 74(3) from Regulation 941 under the *Professional Engineers Act*.

Should you have any questions, or would like additional information, please do not hesitate to contact:

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