

July 30, 2020

Standing Committee on Finance and Economic Affairs
Amarjot Sandhu, MPP, Chair

RE: Study of the recommendations relating to the *Economic and Fiscal Update Act, 2020* and the impacts of the COVID-19 crisis on certain sectors of the economy (Infrastructure)

Dear Committee Members,

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession. We represent Ontario's 85,000 professional engineers and 250,000 engineering graduates. The engineering profession's commitment to safeguarding the public interest has always been extremely important, and in these uncertain times, there is no exception.

The simple truth is that Engineers generate wealth for the province, through the development and commercialization of new technologies and by designing innovative and sustainable solutions that benefit all Ontarians. Engineers also ensure safety and stability, by designing resilient infrastructure, reliable energy grids and clean water systems that Ontarians rely on daily.

During this pandemic, engineers have led the redesign of manufacturing processes to create much needed Personal Protective Equipment (PPE) and ventilators. They are in the med-tech industry working diligently to bio-engineer new medications and develop vaccines to combat COVID-19. OSPE also donated masks and sanitizer to front line workers to show support to our community.

The engineering community has been severely impacted by this pandemic, as thousands of engineering jobs were lost that were directly linked to the infrastructure, manufacturing, technology, research and innovation sectors. This talent will be needed in rebuilding the engine that drives not only Ontario, but the rest of the country. As such, the province must support the engineering community if it wishes to capitalize on their economic recovery efforts.

It is imperative that new funding allocations provide a sustainable benefit for diverse, future generations by ensuring a targeted focus on **sustainable infrastructure, talent development and retention, and fostering innovation.**

OSPE would like to provide you with specific recommendations, from an Infrastructure perspective, for consideration as part of the province's post COVID-19 economic recovery plan.

OSPE believes that the government must prioritize certain actions that will enable the most prosperous recovery for Ontario. COVID-19 has taught everyone the great importance of building a resilient economy that is better prepared to withstand unknown threats of this magnitude.

A resilient economy can be supported by:

- Leveraging Ontario's existing assets
- Building the assets that both businesses and workers of the future need to succeed

- Strengthening Ontario's competitive advantage

These actions should seek to build a sustainable, resilient, and innovative Ontario.

1. Invest in shovel worthy projects by developing a comprehensive project investment pipeline document. This must be informed by currently regulated municipal asset management plans.

OSPE believes that proper, smart, and prioritized investment in sustainable infrastructure will help alleviate the economic burden the province is facing, while decreasing unemployment rates in several critical sectors of the economy.

Recent studies by the University of Maryland and by CANCEA in Ontario have estimated that every dollar invested in infrastructure returns approximately \$3.70 in economic growth over 20 years.

Developing a comprehensive project investment pipeline document, which is informed by existing regulated municipal asset management plans will facilitate the prioritization of early works. These projects are not only 'shovel-ready', but 'shovel-worthy' and will provide a positive return on investment. By immediately utilizing these plans to select projects for investment, the province will be able to reduce application timelines and ensure a speedy and safe recovery.

2. Support small and medium sized engineering firms by tackling increasing liability insurance costs.

Engineers support the provincial and federal government's approach to focus immediately on "shovel-worthy" infrastructure projects that can deliver short- and long-term benefits for Ontarians.

However, to achieve this, engineering firms must be able to compete in the market. Currently, insurance providers consider Ontario a high-risk jurisdiction. This has impacted engineers greatly, causing an increase in insurance costs and implications on coverage. These changes have not only resulted in the rising cost of liability insurance (professional liability as well as commercial general liability/property) but have prevented engineers access to specific aspects of insurance coverage that were historically readily available.

This impacts the ability of small to medium sized engineering companies to operate in the province, which limits the amount of infrastructure that can be built, further debilitating economic growth. Further, this increases the costs of engineering projects, costs which are being downloaded to consumers. As the largest procurer of infrastructure projects, the government should be deeply concerned with these escalating costs, and the design talent shortage needed to build the infrastructure needed.

Several factors have caused these conditions:

- The regulatory body, Professional Engineers Ontario (PEO) does not currently make continuing professional development (CPD) mandatory in Ontario, despite the recommendation brought forward by the Elliot Lake Commission of Inquiry;
- There is no minimum required liability insurance for practicing engineers;
- Engineers are not regularly focused on projects within their specialization, and many lack micro-credentials.

- Engineering firms are not required to train and develop their own talent

3. Accelerate the electrification of the transportation system, including EV adoption.

Ontario should work towards a safe, green, innovative, and integrated transportation system that is able to support a clean environment, while boosting trade, economic growth, and public safety. Policies should seek to develop and foster a transportation system that works for current and future generations.

Electric motors are about 3 times more energy efficient than the internal combustion engine under ideal operating conditions. Electric vehicles also reduce greenhouse gas emissions and take advantage of the province's largely low carbon electricity grid. Transit use will likely decline because of the pandemic, so adoption of EVs may limit the resulting increase in GHG emissions from the transportation sector. Investing in EVs provides the opportunity of achieving short-term results, while allowing clean sectors to grow sustainably over time.

By increasing the uptake of EVs in Ontario and encouraging recharging during evenings, EVs will in effect store Ontario's surplus energy supply, which will significantly reduce the amount of surplus energy that is sold for a loss to external jurisdictions and/or curtailed, which is currently costing Ontario energy ratepayers approximately \$1 billion per year.

According to the Windfall Centre, if EVs were to reach a 10% share of the total vehicle population by 2025, Ontario would experience a GDP increase of over \$3.6 billion. Ontario would benefit from a growing industry that would be modern, efficient, and create new employment opportunities across the province.

The government also has the opportunity of electrifying its public bus fleet. Investments in electric public transport have an amplified positive impact since the vehicles run several hours per day. For individual consumers, EVs cost a quarter of the price to drive than gas vehicles. This means, the average Canadian driver, who travels 20,000km per year, would save as much as \$2,000 per year on fuel alone. Further to this, Ontario still has access to skilled talent despite closures of automotive manufacturing plants over the last few years. As Ontario historically has been a leader in automotive manufacturing, now is the time to ensure that we leverage our engineering and manufacturing expertise to supply the next generation of electric vehicles.

Despite all these benefits, the Ontario Government cancelled the EV incentive program, which resulted in a 53% decrease of EV purchases in the first half of 2019. Ontario is the only province in Canada not experiencing an increase in EV sales. With the current pandemic, the government has the opportunity of rectifying this decision, and supporting a clean growing sector right here in our province.

Some of the uptake barriers encountered with EVs, such as a shorter range, longer recharge times, and a higher upfront cost, can be addressed by smart government action. Some jurisdictions, like California, have committed to achieving a "tipping point" of electric vehicle adoption by enacting EV sale mandates requiring automakers to sell a specified number of EVs per year, as percentage of sales. In Quebec, such action has resulted in a 131% percent increase in one year.

To ensure Ontario accelerates the electrification of its transportation system, the province should:

- a) **Work with the federal and municipal governments to allocate specific resources to the electrification of the public transportation system.**
- b) **Develop and implement an incentive program for electric vehicles, until mass adoption “tipping point” is achieved.**
- c) **Enact an EV sales mandate like the ones established in Quebec and California, requiring automakers to sell a minimum percentage of electric vehicles.**
- d) **Permit free or discounted access for EVs to all tolled highways in Ontario.**
- e) **Establish a robust network of electric vehicle charging stations across Ontario.**
- f) **Amend the Building Code to ensure that there is a minimum percentage of electric vehicle supply equipment (EVSE) in residential and non-residential buildings, including condo and apartment buildings.**

4. Modernize Ontario’s Building Code.

The construction and renovation industries employ hundreds of thousands of Ontario workers, which have been greatly impacted by COVID-19. The National Building Code (NBC 2020) and the National Energy Code for Buildings (NECB 2020) contain new guidelines for energy efficiency in homes, small buildings, and commercial and institutional buildings. NBC 2020 section 9.36 focuses on energy efficiency and reducing greenhouse gas emissions to support a long-term goal of a net zero energy ready (NZER) model building code by 2030. Provinces have the option to adopt these provisions. **Ontario should adopt these sections of the NBC 2020 into the Ontario Building Code O.Reg. 332/12 and define clear steps and deadlines to achieve a NZER code by 2030.**

By doing so, not only would Ontario decrease its carbon footprint, but would also create jobs moving forward, especially under the lens of more energy efficient buildings and retrofits. This would also provide opportunity to lower life cycle costs to building owners and retrain workers in particularly hard-hit sectors. Ontario could learn from other jurisdictions, like British Columbia, who in 2017 became the first North American jurisdiction to create a regulated pathway for net-zero energy-ready buildings, through its *BC Energy Step Code*.

British Columbia’s success rests on:

- **Prioritizing the Building Envelope.** An envelope-first approach designs a measurable level of performance into the very fabric of the building, permanently wedding energy efficiency to the structure.
- **Prescribing outcomes, not processes** by defining a target, and working backwards with fixed interim deadlines and requirements.
- **Providing a baseline and working towards capacity building** by allowing local governments to adopt higher energy-efficiency requirements at a pace that works for them.
- **Consulting appropriately** with municipalities and local governments, professional associations, and utilities

These measures will help stimulate the COVID-19 economy, as greener buildings have been proven to lead to lower utility bills, and higher property value. Having these provisions in the Ontario Building Code will significantly increase the number of green homes and buildings being

built. This is a unique opportunity to both create jobs and increase consumer spending as well as contribute to Canada's transition to a low-carbon future.

The recovery from COVID-19 also provides the Ontario government with the opportunity to further support companies in the retrofitting of existing buildings with energy-efficient and low-carbon options. The goal should be to have existing buildings consume at least 30% less energy than 2005 levels by 2030. This could be achieved through energy labelling or EnerGuide. This requires assessing the energy efficiency of existing buildings on renovating or selling and should also be included in the Ontario Building Code. There needs to be additional financial support to make these cost-efficient, until the retrofit industry is more mature, such as reductions to HST/PST and enhancements to the current SaveONEnergy program.

These are strategic steps towards the development of sustainable communities for current and future generations. Green buildings provide some of the most effective means to achieving a range of goals, such as addressing climate change, creating sustainable and thriving communities, and driving economic growth.

5. Invest in talent development, knowledge training, and supports for engineers across the province.

Ontario must invest in engineering talent across the province. One of the primary barriers to innovation and growth is the access to a talent pool that possesses the skills needed to adapt to the future economy. Prior to COVID-19, some of Ontario's most strategic sectors, such as infrastructure and transportation were already facing a talent-gap in their engineering departments. Engineering jobs were being given to international firms because Ontario did not have the right talent to get the job done. This is deeply concerning to the economic recovery of the province as the success of the economy depends on the ability to match talent with job vacancies and to ensure that this talent can adapt to market demands. This concern has become magnified by immediate demands for more technologically equipped engineers due to changes caused by the current crisis.

The government should create incentives to support a strong culture of lifelong learning across Ontario, where employers and employees are provided with the tools and resources to upskill and retrain local talent. This year, OSPE is launching the [Ontario Engineering Academy](#) (OEA) to up-skill/re-skill engineering graduates exclusively to meet industry needs in Ontario. Your support of this initiative by mandating companies be responsible for the upskilling of local employees is critical for engineering graduates to adequately support Ontario's economic recovery. There is an opportunity for the government to incentivize engineering companies to invest in the professional development of their employees, to ensure that they are equipped with the knowledge and know-how to design and execute based on new realities. Investing in engineering talent allows the economy to shift towards more innovative and efficient processes and systems, which in turn creates jobs for other professionals, stimulating job creation and growth.

6. Invest in Ontario's Mining Infrastructure

Mining is the backbone of the Ontario economy. The materials and products delivered help Ontarians stay safe, meet basic needs, and sustain northern communities. This industry produces

around \$10 billion in revenues for Ontario per year and employs over 75,000 Ontarians. Mining is also the largest private sector employer of Indigenous Ontarians.

Ontario is the largest producer in Canada of gold, platinum group metals and nickel, and the second largest producer of copper. The province is also a major producer of salt and structural materials. Mining produces key metals for the development of high-tech products, batteries, as well as medical devices, including ventilators and diagnostic COVID-19 test kits.

The Ring of Fire region of Northern Ontario is an immense and untapped economic opportunity. Research done by the Ontario Chamber of Commerce suggests that in the first 30 years of its development, this region could generate more than \$25 billion in economic activity across several different sectors in Ontario, including mining, financial services, retail trade, manufacturing, and utilities.

The development of this region will also provide enormous long-term benefits to northern communities through increased economic activity and job creation. To realize the full economic potential of The Ring of Fire, the government must prioritize key investments in core infrastructure, as well as ways to address the needs of the labour market and Indigenous communities.

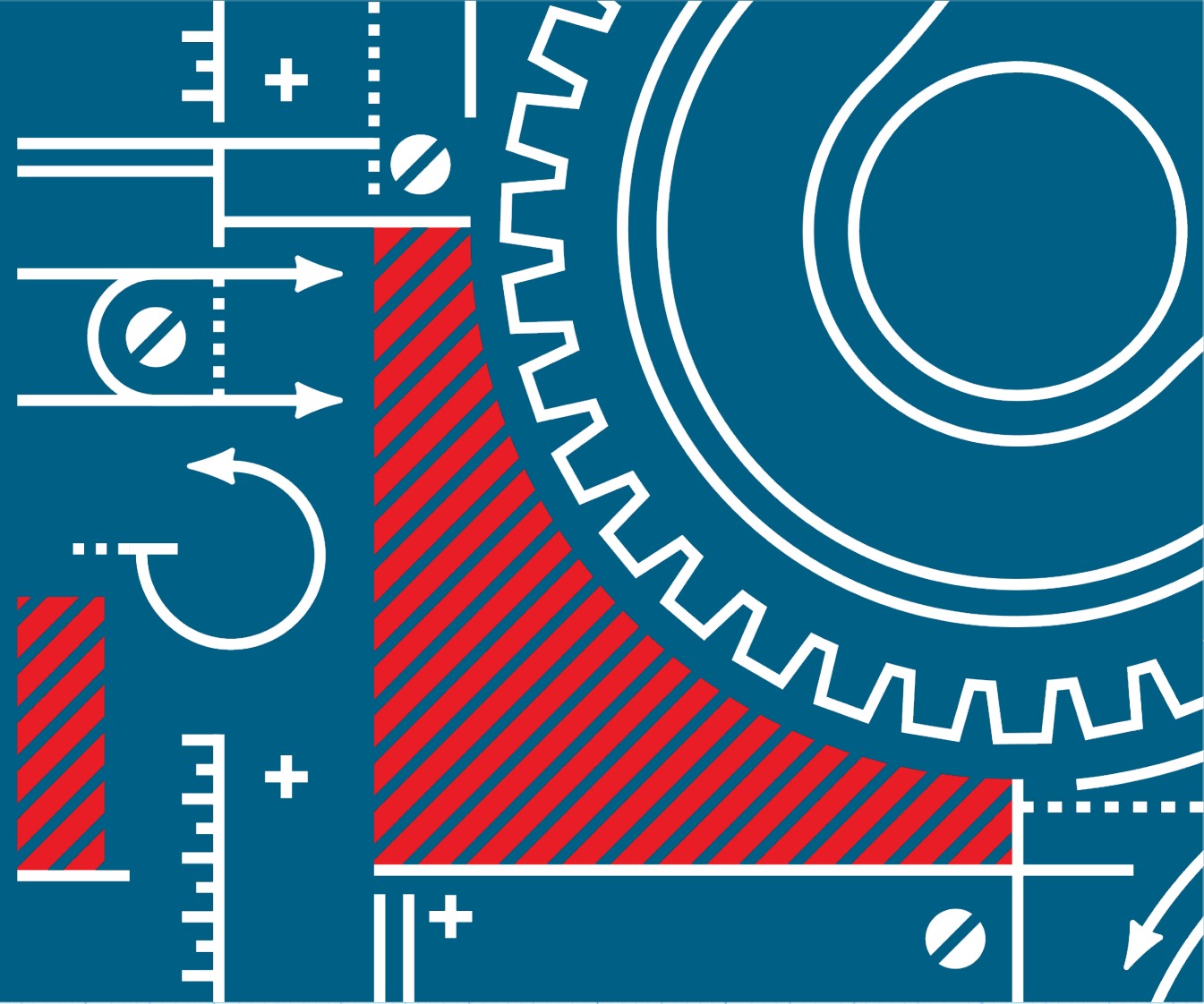
The engineering community suggests that the Government:

- Develop a long-term infrastructure plan for Northern Ontario, based on direct input and consultations from northern and Indigenous communities and the mining sector.
- Ensure resource development is sustainable, by establishing guidelines and frameworks that ensure corporations respect economic, environmental, and social needs of the communities.
- Ensure Indigenous peoples are full partners in the development of the Ring of Fire, where consultations with Indigenous communities begin at the planning stage and continue throughout the mining exploration stages.
- Develop a Youth Training Program, in partnership with OSPE, to teach Indigenous youth the engineering expertise and skills that will allow them to co-develop the different mining sites.

July 30, 2020

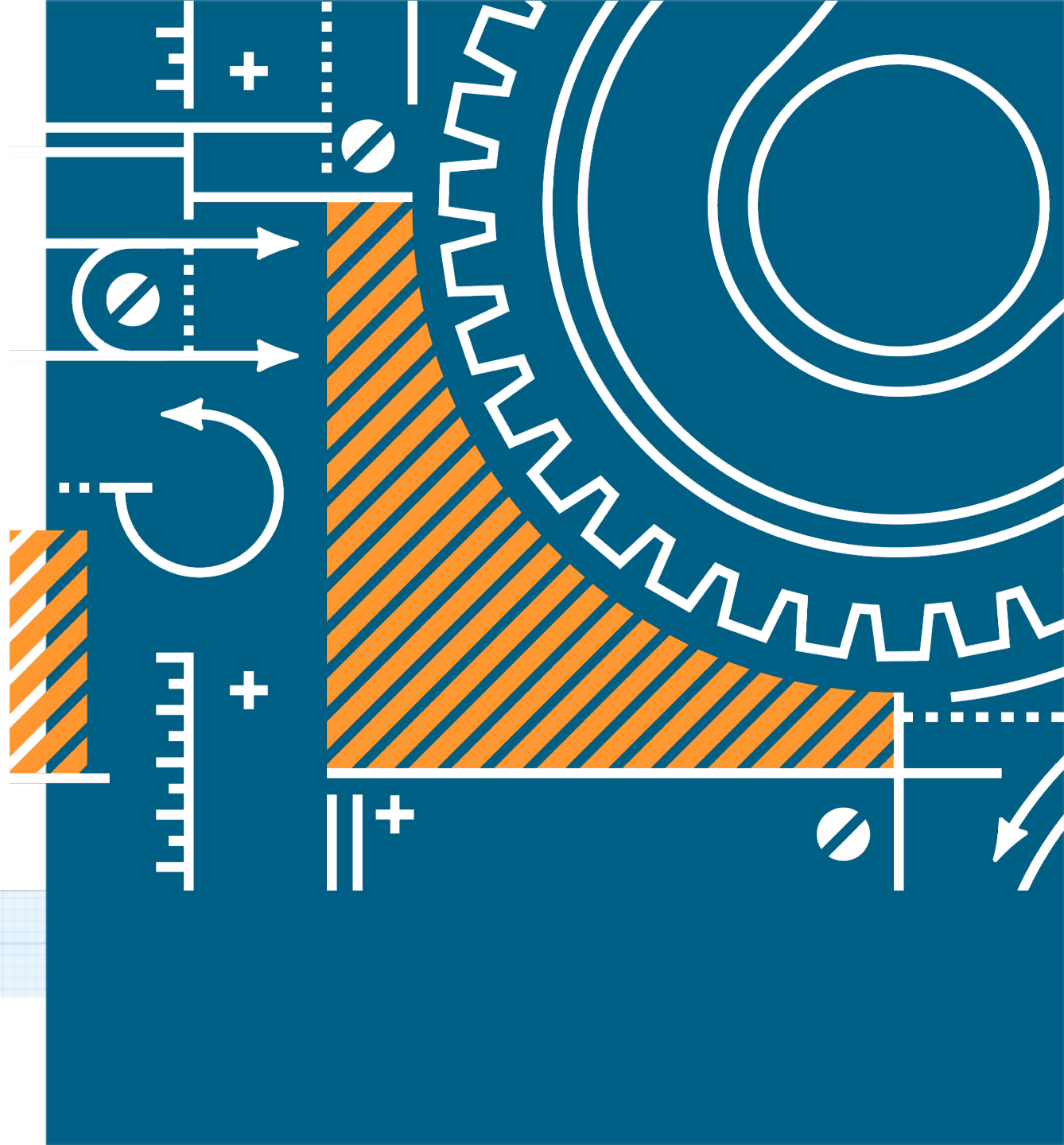
Ontario Society of Professional Engineers

Sandro Perruzza
CEO



About OSPE

We are the voice of the entire engineering community. This community represents over 300,000 professional engineers, engineering graduates, internationally trained engineers and engineering students, who work in virtually every single sector of Ontario's economy, including infrastructure.



COVID-19 Impact on Engineers

The simple truth is that Engineers generate wealth for the province, through the development and commercialization of new technologies and by designing innovative and sustainable solutions that benefit all Ontarians. Engineers also ensure safety and stability, by designing resilient infrastructure, reliable energy grids and clean water systems that Ontarians rely on daily.

The engineering community has been severely impacted by this pandemic, as thousands of engineering jobs were lost that were directly linked to the infrastructure, manufacturing, technology, research and innovation sectors. This talent will be needed in rebuilding the engine that drives not only Ontario, but the rest of the country. As such, the province must support the engineering community if it wishes to capitalize on their economic recovery efforts.

Ontario's COVID-19 Economic Recovery Plan

It is imperative that new funding allocations provide a sustainable benefit for diverse, future generations by ensuring a targeted focus on **sustainable infrastructure, talent development and retention, and fostering innovation.**

Invest in shovel worthy projects by developing a comprehensive project investment pipeline document. This must be informed by currently regulated municipal asset management plans

Recent studies by the University of Maryland and by CANCEA in Ontario have estimated that every dollar invested in infrastructure returns approximately \$3.70 in economic growth over 20 years.

Developing a comprehensive project investment pipeline document, which is informed by current requirement for municipal asset management plans, will prioritize the projects that are both 'shovel-ready', and 'shovel-worthy'. These projects will provide a positive return on investment, as well as, deliver localized social and community benefits.

Support small and medium sized engineering firms by tackling increasing liability insurance costs

Engineers support the provincial and federal government's approach to focus immediately on “shovel-worthy” infrastructure, we mentioned above.

However, to achieve this, engineering firms must be able to compete in the market. Currently, insurance providers consider Ontario a high-risk jurisdiction. These changes have not only resulted in the significant increase in the cost of professional liability insurance, but also in commercial, general liability and property insurance. More dramatically, it has resulted in some engineers and firms being denied access to any insurance coverage whatsoever.

Without access to coverage, small to medium sized engineering companies can not operate in the province and have shut down. This decreases the amount of infrastructure that can be designed and thus built, stunting economic growth.

Accelerate the electrification of the transportation system, including EV adoption

Ontario should work towards a safe, green, innovative, and integrated transportation system that is able to support a clean environment, while boosting trade, economic growth, and public safety. Investing in EVs provides the opportunity of achieving short-term results, while allowing clean sectors to grow sustainably and substantially, over a relatively quick timeline.

Modernize Ontario's Building Code

The construction and renovation industries employ hundreds of thousands of Ontario workers, which have been greatly impacted by COVID-19. The National Building Code (NBC 2020) and the National Energy Code for Buildings (NECB 2020) contain new guidelines for energy efficiency in homes, small buildings, and commercial and institutional buildings. Provinces have the option to adopt these provisions. **Ontario should adopt these sections of the NBC 2020 into the Ontario Building Code O.Reg. 332/12 and define clear steps and deadlines to achieve a NZER code by 2030.**

By doing so, not only would Ontario decrease its carbon footprint, but would also create new jobs, build new energy efficient buildings, allow for a retrofits market, and reduce energy costs for homeowners and tenants.

Invest in talent development, knowledge training, and supports for engineers across the province.

Ontario must invest in engineering talent across the province. One of the primary barriers to innovation and growth is the access to a talent pool that possesses the skills needed to adapt to the future economy. Prior to COVID-19, some of Ontario's most strategic sectors, such as infrastructure and transportation, were already facing a talent-gap in their engineering departments.

Engineering projects were being awarded to international firms because Ontario did not have the right talent to do the work. The success of the economy depends on the ability to match talent with job vacancies and to ensure that this talent can adapt to market demands. This problem is now magnified by increased demands for more technologically equipped engineers, due to market capacity challenges caused by the current crisis. Every jurisdiction is investing in infrastructure because they know it works. There is fierce international fight for talent... and we are losing.

Invest in Ontario's Mining Infrastructure

Mining is the backbone of the Ontario economy. This industry produces around \$10 billion in revenues for Ontario per year and employs over 75,000 Ontarians. Mining is also the largest private sector employer of Indigenous people.

The Ring of Fire region of Northern Ontario is an immense and untapped economic opportunity. The development of this region will also provide enormous long-term benefits to northern communities through increased economic activity and job creation. To realize the full economic potential of The Ring of Fire, the government must prioritize key investments in core infrastructure, as well as ways to address the training needs of the labour market and local Indigenous communities.

**Standing Committee on Finance and Economic Affairs
July 30- 4-5pm**

Thank you for the opportunity to share the perspective, knowledge and experience of Ontario's Engineers, this afternoon. My name is Sandro Perruzza, and I am the CEO of OSPE, the Ontario Society of Professional Engineers.

We are the voice of the entire engineering community. This community represents over 300,000 professional engineers, engineering graduates, internationally trained engineers and engineering students, who work in virtually every single sector of Ontario's economy, including infrastructure.

The simple truth is that Engineers generate wealth for the province, through the development and commercialization of new technologies and by designing innovative and sustainable solutions that benefit all Ontarians. Engineers also ensure safety and stability, by designing resilient infrastructure, reliable energy grids and clean water systems that Ontarians rely on daily.

During this pandemic, engineers have led the redesign of manufacturing processes to create much needed Personal Protective Equipment (PPE) and ventilators. They are in the med-tech industry working diligently to bio-engineer new medications and develop vaccines to combat COVID-19. OSPE also donated masks and sanitizer to front line workers to show support to our community.

The engineering community has been severely impacted by this pandemic, as thousands of engineering jobs were lost that were directly linked to the infrastructure, manufacturing, technology, research and innovation sectors. This talent will be needed in rebuilding the engine that drives not only Ontario, but the rest of the country. As such, the province must support the engineering community if it wishes to capitalize on their economic recovery efforts.

It is imperative that new funding allocations provide a sustainable benefit for diverse, future generations by ensuring a targeted focus on **sustainable infrastructure, talent development and retention, and fostering innovation.**

Here are a few of our recommendations:

- 1. Invest in shovel worthy projects by developing a comprehensive project investment pipeline document. This must be informed by currently regulated municipal asset management plans.**

Recent studies by the University of Maryland and by CANCEA in Ontario have estimated that every dollar invested in infrastructure returns approximately \$3.70 in economic growth over 20 years.

Developing a comprehensive project investment pipeline document, which is informed by current requirement for municipal asset management plans, will prioritize the projects that are both ‘shovel-ready’, and ‘shovel-worthy’. These projects will provide a positive return on investment, as well as, deliver localized social and community benefits.

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Engineers support the provincial and federal government’s approach to focus immediately on “shovel-worthy” infrastructure, we mentioned above.

However, to achieve this, engineering firms must be able to compete in the market. Currently, insurance providers consider Ontario a high-risk jurisdiction. These changes have not only resulted in the significant increase in the cost of professional liability insurance, but also in commercial, general liability and property insurance. More dramatically, it has resulted in some engineers and firms being denied access to any insurance coverage whatsoever.

Without access to coverage, small to medium sized engineering companies can not operate in the province and have shut down. This decreases the amount of infrastructure that can be designed and thus built, stunting economic growth. Let me repeat, without the market capacity to design the infrastructure we so sorely need and will depend on for our economic recovery, there will be no infrastructure to build. The liability insurance issue is the sleeper issue no one is talking about and will have the biggest impact on economic recovery in this sector.

3. Accelerate the electrification of the transportation system, including Electric Vehicle (EV) adoption.

Ontario should work towards a safe, green, innovative, and integrated transportation system that is able to support a clean environment, while boosting trade, economic growth, and public safety. Investing in EVs provides the opportunity of achieving short-term results, while allowing clean sectors to grow sustainably and substantially, over a relatively quick timeline.

4. Modernize Ontario’s Building Code.

The National Building Code (NBC 2020) and the National Energy Code for Buildings (NECB 2020) contain new guidelines for energy efficiency in homes, small buildings, industrial, commercial and institutional properties. **Ontario should adopt these sections of the National Building Code and National Energy Code for Buildings into the**

Ontario Building Code (O.Reg. 332/12) and define clear steps and milestones to achieve a NZER (Net Zero) building code by 2030.

By doing so, not only would Ontario decrease its carbon footprint, but would also create new jobs, build new energy efficient buildings, allow for a retrofits market, and reduce energy costs for homeowners and tenants.

5. Invest in talent development, knowledge training, and supports for Ontario's engineers.

Ontario must invest in engineering talent across the province. One of the primary barriers to innovation and growth is the access to a talent pool that possesses the skills needed to adapt to the future economy. Prior to COVID-19, some of Ontario's most strategic sectors, such as infrastructure and transportation, were already facing a talent-gap in their engineering departments.

Engineering projects were being awarded to international firms because Ontario did not have the right talent to do the work. The success of the economy depends on the ability to match talent with job vacancies and to ensure that this talent can adapt to market demands. This problem is now magnified by increased demands for more technologically equipped engineers, due to market capacity challenges caused by the current crisis. Every jurisdiction is investing in infrastructure because they know it works. There is fierce international fight for talent... and we are losing.

We are simply not developing the engineers we need for the future. The Engineering Regulator, Professional Engineers of Ontario (PEO), has yet to design and implement a Continuous Professional Develop Program for licenced engineers. This is not only an economic imperative, it is a public safety issue, as identified in the public inquiries into the Algo Mall collapse in Elliot Lake, and the Radiohead Stage Collapse at Downsview Park.

6. Invest in Ontario's Mining Infrastructure

Mining is the backbone of the Ontario economy. This industry produces around \$10 billion in revenues for Ontario per year and employs over 75,000 Ontarians. Mining is also the largest private sector employer of Indigenous people.

The Ring of Fire region of Northern Ontario is an immense and untapped economic opportunity. The development of this region will also provide enormous long-term benefits to northern communities through increased economic activity and job creation. To realize the full economic potential of The Ring of Fire, the government must prioritize key investments in core infrastructure, as well as ways to address the training needs of the labour market and local Indigenous communities.

June 10, 2020

Honourable Rod Phillips
Minister of Finance
Chair, Jobs and Recovery Committee
7th Floor, Frost Building South,
7 Queen's Park Crescent
Toronto, ON M7A 1Y7

RE: Ontario's Post COVID-19 Economic Recovery Plan (Short Term Recommendations)

Dear Minister Phillips,

The Ontario Society of Professional Engineers (OSPE) is the advocacy body and voice of the engineering profession. Ontario currently has over 85,000 professional engineers, 250,000 engineering graduates, 6,600 engineering post-graduate students and 37,000 engineering undergraduate students. The engineering profession's commitment to safeguarding the public interest has always been extremely important, and in these uncertain times, there is no exception.

On Wednesday, May 26, we provided you and the Jobs and Recovery Committee with immediate and urgent recommendations for consideration as part of the province's post COVID-19 economic recovery plan. On this occasion we would like to present you with short-term recommendations to ensure the proper economic recovery of our province. The short-term actions outlined below are required to sustain the initial economic growth developed in Phase 1. These measures should support technologies that drive efficiencies and sustainably maintain the initial progress achieved by the immediate actions.

Engineers generate wealth for the province, through the development and commercialization of new technologies and by designing innovative and sustainable solutions for the benefit of all Ontarians. Engineers also ensure safety and stability, by designing resilient infrastructure and reliable energy and water systems that Ontarians rely on daily. During this pandemic, engineers have led the redesign of manufacturing processes to create much needed Personal Protective Equipment (PPE) and ventilators. Engineers use 3D printers to create tens of thousands of face shields and frames for our front-line workers. They are in the med-tech industry working diligently to bio-engineer new medications and a new vaccine to combat COVID-19. In times of crisis, you will always find engineers working tirelessly, in the background, without much accolade, diligently supporting the communities they serve.

Unfortunately, the engineering community has been severely impacted by this pandemic, as thousands of engineering jobs are directly linked to the infrastructure, manufacturing, technology and research and innovation sectors. This has not only affected engineers and engineering graduates but the entire Ontario economy.

Engineering knowledge and talent is beyond capable of leading Ontario's industries into the future and will play an important role in the immediate, short- and long-term economic recovery of our province. As such, the province must now support the engineering community in rebuilding the engine that drives Ontario, and the rest of the country.

Ontario's historic funding allocations and strategic planning unfortunately fell short of serving the province's needs during this crisis, and we would like to assist in re-introducing resiliency and value in Ontario's workforce and systems. To ensure preparedness for future events and build an economy that is strong and benefits all

people, it is imperative that new funding allocations provide a sustainable benefit for diverse, future generations by ensuring a targeted focus on **building sustainability, investing in talent development and retention, and fostering innovation.**

A resilient economy can be supported by:

- Leveraging Ontario's existing assets
- Building the assets that both businesses and workers of the future need to succeed
- Strengthening Ontario's competitive advantage

The engineering community believes that Ontario's economic recovery plan requires short-term investments in key sectors, to propel Ontario to continued growth in the next months and years to come. These measures should support technologies that drive efficiencies and reflect the work force reality post COVID-19.

OSPE would like to present the following recommendations:

Short-Term Actions

- 1. Implement a clear and transparent analytical process to review new and existing programs, policies and initiatives in order to identify who in Ontario will benefit, who might be harmed and who will be left out – as part of the approval and provincial funding process.**

There is a strong business and social case to advance diversity and inclusion in the Ontario economy. In the next year, the government will be making a series of strategic investments to boost economic performance. It is imperative that these decisions are made in the interest of all Ontarians. The government cannot afford to make decisions that exclude communities and individuals across the province. Failing to guarantee the equitable distribution of economic and social gains is both unethical and economically damaging. It is critical to get ahead of the curve and integrate inclusion from the onset rather than filling the gaps retroactively. To ensure that this does not occur, the Ontario Government can use the federal government's Gender Based Analysis Plus (GBA+) tool as a model. The Government of Canada has been committed to using a GBA+ approach in the development of policies, programs, and legislation since 1995.

Using a tool like GBA+ will ensure that moving forward decisions account for diverse needs and avoid a disproportionality of benefits. Communities across the province experience this today with issues such as limited broadband connectivity in rural locations or unsafe drinking water. GBA+ can be used in all sectors and domains of government such as:

- To review large procurement projects to ensure products and equipment meet diverse needs.
- To improve labour policies and contribute to more diverse and inclusive workplaces both within and outside of the public sector.
- To address labour and talent shortages in sectors such as manufacturing and mining by considering barriers to entry for some segments of the population.

Through our research and advocacy work we know that the engineering profession continues to face challenges in achieving full participation from members of underrepresented groups despite their representation within the province. These challenges are further compounded when considered with diversity dimensions such as race, ethnicity, sexuality, ability, and religion, amongst others. The disadvantages facing these groups are only exacerbated during times of crisis. As a result, we believe that some of Ontario's engineering talent is being disproportionately impacted by COVID-19. Full participation may be achieved by not only ensuring that products and equipment meet diverse needs but by ensuring that government contracts consider workplaces that demonstrate diversity and inclusion.

We request that the government applies an equity lens in developing all policies impacting employment and economic growth to ensure that this talent is not lost in a time when diverse perspectives and experiences, are more important than ever before.

2. Work towards a sustainable transition, by encouraging the use of Distributed Energy Resources (DERs) and emissions free technology.

Restoring our economy in the wake of the COVID-19 pandemic should keep in mind our existing environmental and climate change concerns. DER technologies leverage economies of scale to produce economic, environmental and reliability benefits to the local economy. They also offer consumers the potential for lower-cost, higher-service reliability, high-power quality, increased energy efficiency, energy independence, and energy security to mitigate future effects of climate change.

Widespread use of local and regional district energy systems has been a fundamental and primary contributor to low-carbon communities in countries like Denmark and Finland. Toronto's *TOCore Downtown Energy Strategy* also concludes that district energy systems are fundamental to reducing greenhouse gas emissions from buildings at a lower cost compared to individual buildings.

The Ontario government should encourage the adoption of locally owned energy sources and storage systems that increase local jobs and energy costs throughout the entire province. Although this will require investment in distribution system upgrades, the upgrades will allow for a more optimal use of existing assets and, if designed correctly, can result in the elimination or deferral of other system costs. Furthermore, upgrading Ontario's energy infrastructure represents an ideal opportunity to address the needs of current and future generations, while creating employment opportunities for engineers and energy innovators.

The government should also support technological innovation that reduces energy use, through grants and incentive programs for innovators. These incentives should reward technologies that are able to provide energy efficient solutions that will make Ontario's infrastructure and energy sources more resilient to intensified weather patterns.

3. Accelerate the electrification of the transportation system, including EV adoption.

Ontario should work towards a safe, green, innovative, and integrated transportation system that is able to support a clean environment, while boosting trade, economic growth, and public safety. Policies should seek to develop and foster a transportation system that works for current and future generations.

Electric motors are about 3 times more energy efficient than the internal combustion engine under ideal operating conditions. Electric vehicles also reduce greenhouse gas emissions and take advantage of the province's largely low carbon electricity grid. Transit use will likely decline because of the pandemic, so adoption of EVs may limit the resulting increase in GHG emissions from the transportation sector. Investing in EVs provides the opportunity of achieving short-term results, while allowing clean sectors to grow sustainably over time.

By increasing the uptake of EVs in Ontario and encouraging recharging during evenings, EVs will in effect store Ontario's surplus energy supply, which will significantly reduce the amount of surplus energy that is sold for a loss to external jurisdictions and/or curtailed, which is currently [costing Ontario energy ratepayers approximately \\$1 billion per year](#).

According to the Windfall Centre, if EVs were to reach a 10% share of the total vehicle population by 2025, Ontario would experience a GDP increase of over \$3.6 billion. Ontario would benefit from a growing industry that would be modern, efficient, and create new employment opportunities across the province.

The government also has the opportunity of electrifying its public bus fleet. Investments in electric public transport have an amplified positive impact since the vehicles run several hours per day. For individual consumers, EVs cost a quarter of the price to drive than gas vehicles. This means, the average Canadian driver, who travels 20,000km per year, would save as much as \$2,000 per year on fuel alone. Further to this,

Ontario still has access to skilled talent despite closures of automotive manufacturing plants over the last few years. As Ontario historically has been a leader in automotive manufacturing, now is the time to ensure that we leverage our engineering and manufacturing expertise to supply the next generation of electric vehicles.

Despite all these benefits, the Ontario Government cancelled the EV incentive program, which resulted in a 53% decrease of EV purchases in the first half of 2019. Ontario is the only province in Canada not experiencing an increase in EV sales. With the current pandemic, the government has the opportunity of rectifying this decision, and supporting a clean growing sector right here in our province.

Some of the uptake barriers encountered with EVs, such as a shorter range, longer recharge times, and a higher upfront cost, can be addressed by smart government action. Some jurisdictions, like California, have committed to achieving a “tipping point” of electric vehicle adoption by enacting EV sale mandates requiring automakers to sell a specified number of EVs per year, as percentage of sales. In Quebec, such action has resulted in a 131% percent increase in one year.

To ensure Ontario accelerates the electrification of its transportation system, the province should:

- a) **Work with the federal and municipal governments to allocate specific resources to the electrification of the public transportation system.**
- b) **Develop and implement an incentive program for electric vehicles, until mass adoption “tipping point” is achieved.**
- c) **Enact an EV sales mandate like the ones established in Quebec and California, requiring automakers to sell a minimum percentage of electric vehicles.**
- d) **Permit free or discounted access for EVs to all tolled highways in Ontario.**
- e) **Establish a robust network of electric vehicle charging stations across Ontario.**
- f) **Amend the Building Code to ensure that there is a minimum percentage of electric vehicle supply equipment (EVSE) in residential and non-residential buildings, including condo and apartment buildings.**

4. Modernize Ontario’s Building Code.

The construction and renovation industries employ hundreds of thousands of Ontario workers, which have been greatly impacted by COVID-19. The National Building Code (NBC 2020) and the National Energy Code for Buildings (NECB 2020) contain new guidelines for energy efficiency in homes, small buildings, and commercial and institutional buildings. NBC 2020 section 9.36 focuses on energy efficiency and reducing greenhouse gas emissions to support a long-term goal of a net zero energy ready (NZER) model building code by 2030. Provinces have the option to adopt these provisions. **Ontario should adopt these sections of the NBC 2020 into the Ontario Building Code O.Reg. 332/12 and define clear steps and deadlines to achieve a NZER code by 2030.**

By doing so, not only would Ontario decrease its carbon footprint, but would also create jobs moving forward, especially under the lens of more energy efficient buildings and retrofits. This would also provide opportunity to lower life cycle costs to building owners and retrain workers in particularly hard-hit sectors. Ontario could learn from other jurisdictions, like British Columbia, who in 2017 became the first North American jurisdiction to create a regulated pathway for net-zero energy-ready buildings, through its *BC Energy Step Code*.

British Columbia’s success rests on:

- **Prioritizing the Building Envelope.** An envelope-first approach designs a measurable level of performance into the very fabric of the building, permanently wedding energy efficiency to the structure.
- **Prescribing outcomes, not processes** by defining a target, and working backwards with fixed interim deadlines and requirements.
- **Providing a baseline and working towards capacity building** by allowing local governments to adopt higher energy-efficiency requirements at a pace that works for them.
- **Consulting appropriately** with municipalities and local governments, professional associations, and utilities

These measures will help stimulate the COVID-19 economy, as greener buildings have been proven to lead to lower utility bills, and higher property value. Having these provisions in the Ontario Building Code will significantly increase the number of green homes and buildings being built. This is a unique opportunity to both create jobs and increase consumer spending as well as contribute to Canada's transition to a low-carbon future.

The recovery from COVID-19 also provides the Ontario government with the opportunity to further support companies in the retrofitting of existing buildings with energy-efficient and low-carbon options. The goal should be to have existing buildings consume at least 30% less energy than 2005 levels by 2030. This could be achieved through energy labelling or EnerGuide. This requires assessing the energy efficiency of existing buildings on renovating or selling and should also be included in the Ontario Building Code. There needs to be additional financial support to make these cost-efficient, until the retrofit industry is more mature, such as reductions to HST/PST and enhancements to the current SaveONEnergy program.

These are strategic steps towards the development of sustainable communities for current and future generations. Green buildings provide some of the most effective means to achieving a range of goals, such as addressing climate change, creating sustainable and thriving communities, and driving economic growth.

5. Invest in talent development, knowledge training, and supports for engineers across the province.

Ontario must invest in engineering talent across the province. One of the primary barriers to innovation and growth is the access to a talent pool that possesses the skills needed to adapt to the future economy. Prior to COVID-19, some of Ontario's most strategic sectors, such as infrastructure and transportation were already facing a talent-gap in their engineering departments. Engineering jobs were being given to international firms because Ontario did not have the right talent to get the job done. This is deeply concerning to the economic recovery of the province as the success of the economy depends on the ability to match talent with job vacancies and to ensure that this talent can adapt to market demands. This concern has become magnified by immediate demands for more technologically equipped engineers due to changes caused by the current crisis.

The government should create incentives to support a strong culture of lifelong learning across Ontario, where employers and employees are provided with the tools and resources to upskill and retrain local talent. This year, OSPE is launching the [Ontario Engineering Academy](#) (OEA) to up-skill/re-skill engineering graduates exclusively to meet industry needs in Ontario. Your support of this initiative by mandating companies be responsible for the upskilling of local employees is critical for engineering graduates to adequately support Ontario's economic recovery. There is an opportunity for the government to incentivize engineering companies to invest in the professional development of their employees, to ensure that they are equipped with the knowledge and know-how to design and execute based on new realities. Investing in engineering talent allows the economy to shift towards more innovative and efficient processes and systems, which in turn creates jobs for other professionals, stimulating job creation and growth.

6. Support engineering students and recent engineering graduates.

COVID-19 has negatively impacted engineering students and new engineering graduates in numerous ways. Specifically, students and engineering graduates are having difficulty accessing co-op/work integrated learning (WIL) opportunities. Co-op placements provide practical training experience that is needed as part of the work experience requirement for licensing and to obtain the necessary applied skills to succeed in the workplace.

Moreover, the decrease in access to co-op placements/WIL opportunities has a significant impact on engineering students, who use these as a source to finance their studies. As outlined in OSPE's 2019 report *Engineering Students and Graduates: Perspectives on Tuition, Job Prospects, and Co-op/internships*, tuition for engineering students in Ontario is higher than the national average and considerably higher than some other undergraduate degree programs. While survey results indicated that this did not dissuade students from pursuing an engineering degree, most respondents expressed significant concern regarding their ability to pay off student loans or debt, needed to finance these higher tuition fees and educational expenses.

OSPE recognizes that the Ontario government took action to reduce all tuition fees by 10% in the 2019-20 school year and freeze tuition fees for the 2020-21 school year. The government stated this would be a reduction of \$660 on average for university students enrolled in an undergraduate arts and science degree. Northern schools have access to a contingency fee to offset some of their lost revenue due to their inability to attract a high proportion of international students. However, it is also important to note that this cut to tuition was also accompanied by significant proposed cuts to the Ontario Student Assistance Program (OSAP) grants, which is expected to increase student debt loads.

There is deep concern that the financial strain that engineering students are currently facing has only become more pronounced because of these changes. Given the limited availability of such programs, student engineers often seek student loans from banks and credit unions to pay higher tuition fees and are further disadvantaged because (i) commercial bank/credit union student loans typically carry higher interest rates than federal/provincial student loans and (ii) interest paid on student loans provided by banks and credit unions are not eligible for tax deduction purposes.

Government support programs for students and new graduates must recognize that:

- Engineering programs are far more expensive than arts programs (Ontario engineering programs are amongst the costliest in Canada), so current financial support programs, are effectively less supportive for engineering students than arts students/other programs.
- Engineering sources of income are essentially disappearing during the COVID-19 pandemic.
- Historical pre-COVID-19 earnings tests from parents are effectively irrelevant to determining whether a student can pay forthcoming engineering tuition.
- Parental earnings may not be available to support students going forward.
- The value of traditional tax incentives available to students and parents (RESP, Textbook tax credit, tuition credits etc.) have either been cancelled or significantly atrophied as a percentage of real student educational and living costs.

Without effectively addressing this we are compromising access to engineering programs and ultimately constraining the future engineering talent pool, and the industry's future ability to innovate in support of Ontario's economy.

To address this, the Ontario Government should:

- a) Create accessible and predictable funding opportunities for companies that are looking to hire interns, recent engineering graduates and students.**

- b) Evaluate and restructure the Ontario Student Assistance Program (OSAP) and other educational government support programs to account for the impact of COVID-19 on historical income data.**
- c) Provide additional income support to students and their parents in the form of tax credits through a system that bases financial supports on the cost of their educational program (i.e. implementing transferrable tax credits that are capped based on a percentage of tuition paid rather than a dollar cap).**
- d) Review and enhance the amount of tax incentives and supports available to students and their families to account for diverse family structures and dynamics (multiple children in college and university, child support payments, disabled children, high health care, financial support for aging parents etc.)**

7. Drive the transformation of engineering education.

To rebuild the Ontario economy in the years to come, the province will require engineering talent that possesses the skills to innovate and succeed in new market realities. Engineering is changing, and the requirements for engineers to demonstrate new competencies is needed. As such, the learning objectives and outcomes need to shift to recognize this reality. However, while engineers are highly competent and ready to perform in today's economy, engineering training and education has been constrained by an outdated accreditation system, which impacts the ability for higher educational institutions (HEIs) to adapt curriculum and train the engineers of the future.

Canada has an inputs-based (time allocated to learning) and not outcomes-based (what students have learned) accreditation system. Assessment is based on a measure of curriculum content and quality by Accreditation Units (AU). AUs are an inputs-based metric which measures in-class learning time, instead of focusing and organising programs around clearly defined outcomes students should demonstrate when they leave school.

Engineering Deans Canada (EDC) has been requesting that the accreditation model be changed from an inputs-based to an outcomes-based model, allowing HEIs increased flexibility to be innovative, creative, and inclusive with their curriculum.

Changes to the accreditation model have focused on increasing the curriculum requirements that must be met by university programs, without improving the learning outcomes and skills acquired by students. This has placed an increased burden on students to acquire knowledge that does not reflect current engineering practices. An outdated model means that engineering students are graduating without the skills needed by employers.

To address this the Ontario Government should:

- a) Convene a meeting with OSPE, and other stakeholders including but not limited to Engineering Deans Ontario (EDO), and Professional Engineers Ontario (PEO) to discuss this issue and ensure that the appropriate actions are taken to improve student outcomes.**
 - b) Upon a better understanding of the key issues, convene a meeting with their provincial counterparts and other key stakeholders, including but not limited to Engineering Deans Ontario (EDO), Engineering Deans Canada (EDC), Engineers Canada, and the engineering regulators, to ensure that all provinces are taking action to improve student outcomes.**
- 8. Create a dedicated fund to support Ontario businesses in Research and Development (R&D) activities with a strong focus on local commercialization, including development and protection of Intellectual Property (IP) for Ontario and Canada's benefit.**

Ontario should encourage research and development (R&D) that will accelerate technology transfer and commercialization of innovative products, processes, and services based on immediate demand. As a result of COVID-19, many businesses are having to shift their operations, processes, products, and services, and the need to invest in research and development has become crucial to their ability to remain competitive. Another significant element to the economic success of these businesses and the Ontario economy are investments in IP. As outlined in the province's IP Report titled *Intellectual Property in Ontario's Innovation Ecosystem*, "product enhancements and services based on IP have low or even zero marginal production costs, and result in 'winner take all' economies". Many barriers remain between Ontario's research ecosystem and industry which prevent innovation. To address this, government must incentivize businesses to invest in developing and protecting IP.

A focus on dollars for systems/products/services most impacted by the COVID-19 crisis such as development of large-scale oxygen delivery therapies for emergency and long-term care, and more robust HVAC systems to minimize circulation of viruses, should be of primary importance. What has emerged already and during previous crises provides lessons for our near-term response, but also highlights the underlying and more critical need to better resource research and innovation efforts.

It is critical that the R&D and innovation dollars provided contribute to the Canadian economy long-term. Although this will benefit all businesses, it will have an amplified benefit to small and medium sized enterprises (SMEs), as they do not have the resources to invest in product and process development at the same rate. Through this fund, the government will minimize the risk of investing in local commercialization and will support the retention of key engineering talent throughout Ontario's diverse R&D ecosystem, while promoting competitiveness and innovation.

9. Invest in Ontario's Mining Industry to ensure proper clean-up of Ontario's orphaned and abandoned sites.

Mining is one of the economic backbones of the Ontario economy and is especially important to Northern Ontario. The materials and products delivered help Ontarians stay safe, meet basic needs, and sustain northern communities. This industry produces around \$10 billion in revenues for Ontario per year and employs over 75,000 Ontarians. Mining is also the largest private sector employer of Indigenous Ontarians.

Ontario is responsible for one-third of Canada's total mined metal production. Our province is the largest producer of gold, platinum group metals and nickel, and the second largest producer of copper in the country. The province is also a major producer of salt and structural materials. Mining produces key metals for the development of high-tech products and batteries, as well as medical devices, including ventilators and diagnostic COVID-19 test kits.

Despite its tremendous benefits to the province, investment in this sector has lagged, causing serious concerns with existing legacy issues, that require attention immediately. To keep turning Ontario's natural resource potential into jobs and sustainable wealth, it is essential to invest in activities that keep the mining cycle robust. These include but are not limited to encouraging more sustainable exploration, conducting appropriate project feasibility studies, design work, environmental and impact assessment studies, and ensuring mines are closed properly.

Unfortunately, the lack of proper closure of historical mines in Ontario has been a problem for decades. Ontario currently has over 5,000 known abandoned mines, containing over 15,000 hazards. These abandoned sites are an enormous environmental concern and pose health and safety risks to the surrounding communities.

It was only in 1991, under the *Mining Act*, that legislation established that all mining companies must prepare and submit for approval a Mine Closure Plan certified by a qualified professional engineer that the plan adheres to government's standards and is backed by a financial assurance bond. Therefore, there are thousands of abandoned sites that were closed prior to 1991 that have no current ownership. This means that the government, and ultimately the taxpayer is on the hook for cleaning up these sites. For example, Ontario has spent about \$75 million to date to clean up the former Kam Kotia Mine near Timmins. As we strive towards a robust economy post-COVID-19, it should be noted that these costs will continue to increase if these legacy issues are not dealt with appropriately and in a timely manner.

The Government of Ontario should work with the Federal government to ensure that the Canadian Minerals and Metals Plan (CMMP) achieves all its goals under each of its six strategic directions.

- a) Direct funding should support the re-imagination of the National Orphaned or Abandoned Mines Initiative (NOAMI)**
 - i. NOAMI should develop a long-term plan that outlines key steps for the remediation of orphaned and abandoned mine sites.**
 - ii. Funding should mirror the type of funding that the federal government has destined to help clean up orphaned and abandoned oil and gas wells in Alberta, Saskatchewan, and British Columbia (\$1.7 billion).**

10. Improve home affordability by eliminating the HST on new construction home purchases

The Harmonized Sales Tax (HST) was introduced in Ontario on July 1, 2010, combining the federal Goods and Services Tax (GST) with provincial sales tax (PST) into a single tax. In this same year and recognizing the harmful effect of large HST bills on new home purchase affordability, the Ontario Government implemented a cap of 75% of the 8% of the provincial portion of HST up to a maximum of \$24,000. This cap has not been increased ever since, lacking a true reflection of current construction costs and inflation.

With the higher costs, significantly tightened regulatory lending requirements and employment uncertainty, home affordability is increasingly beyond the reach of today's families, especially in major urban centres. A large reason for this affordability crisis is the significance of HST costs that increasingly are born by the purchaser without rebate. This reality has been heightened by the current COVID-19 pandemic.

Design and construction of new multifamily and residential construction is desperately needed in Ontario. The residential construction industry contributes over \$51 billion dollars to Ontario's economy, employing more than 330,000 people across the province. Engineers are required to undertake small and large residential projects, leading innovation, and incorporating latest technologies. This work employs significant numbers of engineers of all disciplines but cannot start unless there are qualified home buyers that can afford the ultimate product.

Elimination of the HST on newly constructed residential purchases for owner-occupiers is long overdue and will jump-start an important sector of the economy while satisfying a vital public need for affordable housing.

OSPE believes that these recommendations are essential for the economic recovery of our province. We look forward to working with the government to further develop these recommendations. If you have any additional questions please contact Stuart Atkinson, OSPE Policy and Government Relations Lead at satkinson@ospe.on.ca or 416-223-9961 ext. 225.

Sincerely,



Réjeanne Aimey, P.Eng.
Chair and President
Ontario Society of Professional Engineers



Sandro Perruzza
Chief Executive Officer
Ontario Society of Professional Engineers

2020019

CC:

Hon. Doug Ford, Premier of Ontario
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Hon. Peter Bethlenfalvy, President of the Treasury Board
Hon. Caroline Mulroney, Minister of Transportation
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Hon. Lisa MacLeod, Minister of Heritage, Sport, Tourism and Culture Industries
Hon. Lisa Thompson, Minister of Government and Consumer Services
Hon. Monte McNaughton, Minister of Labour, Training and Skills Development
Hon. Prabmeet Sarkaria, Associate Minister of Small Business and Red Tape Reduction



May 26, 2020

Honourable Rod Phillips
Minister of Finance
Chair, Jobs and Recovery Committee
7th Floor, Frost Building South,
7 Queen's Park Crescent
Toronto, ON M7A 1Y7

RE: Ontario's Post COVID-19 Economic Recovery Plan

Dear Minister Phillips,

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession. We represent professional engineers, engineering graduates, students, interns, and retirees. Our members provide expertise and insight into the different sectors that they work in and our advocacy efforts are intended to elevate the profession for the entire community. Our profession's commitment to safeguarding the public has always been extremely important, and in these uncertain times, there is no exception.

Engineers generate wealth for the province, through the development and commercialization of new technologies and by designing innovative and sustainable solutions for the benefit of all Ontarians. Engineers also ensure safety and stability, by designing resilient infrastructure and reliable energy and water systems that Ontarians rely on daily. Engineers create opportunities and hope. During this pandemic, engineers have led the redesign of manufacturing processes to create much needed Personal Protective Equipment (PPE) and ventilators. Engineers use 3D printers to create tens of thousands of face shields and frames for our front-line workers. They are in the med-tech industry working diligently to bio-engineer new medications and a new vaccine to combat COVID-19. In times of crisis, you will always find engineers working tirelessly, in the background, without much accolade, diligently supporting the communities they serve.

In order to demonstrate the commitment and dedication of our member's dedication to assisting in the fight against COVID-19, OSPE has donated surgical masks and hand sanitizer to our front line health care workers, when they needed these scarce supplies the most.

Unfortunately, the engineering community has been severely impacted by this pandemic, as thousands of engineering jobs are directly linked to the infrastructure, manufacturing, technology and research and innovation sectors. Key activities such as the development of technical designs, studies, planning, operations management, and construction have ceased. This has not only affected engineers and engineering graduates but the entire Ontario economy.

Engineering knowledge and talent is beyond capable of leading Ontario's industries into the future and will play an important role in the immediate, short- and long-term economic recovery of our province. As such, the province must now support the engineering community in rebuilding the engine that drives Ontario, and the rest of the country.

Ontario's historic funding allocations and strategic planning unfortunately fell short of serving the province's needs during this crisis, and we would like to assist in re-introducing resiliency and value in Ontario's workforce and systems. To ensure preparedness for future events and build an economy that is strong and benefits all people, it is imperative that new funding allocations provide a sustainable benefit for diverse, future generations by ensuring a targeted focus on **building sustainability, investing in talent development and retention, and fostering innovation.**

We would like to commend the Government of Ontario for its leadership to date in addressing the impacts of the COVID-19 pandemic and taking an inter-ministerial approach to provide solutions for businesses and individuals alike.

OSPE would like to provide you and the Jobs and Recovery Committee with specific recommendations for consideration as part of the province's post COVID-19 economic recovery plan.

The engineering community believes that Ontario's economic recovery plan will be better suited to deliver tangible results if it is considered from a three-phase approach:

- **Phase 1:** Immediate and urgent measures needed today to create the conditions to re-open the economy, looking at strategic multi-sectoral economic levers.
- **Phase 2:** Short-term investments required to sustain the initial economic growth in Phase 1. These measures should support technologies that drive efficiencies and reflect the work force reality post COVID-19.
- **Phase 3:** Additional medium and long-term supports that create a prosperous transition to a knowledge-based, innovative economy that engineers are key in helping create and sustain.

OSPE would like to present the following recommendations, pertaining to **Phase 1:**

Immediate and Urgent Actions

OSPE believes that the government must prioritize certain actions that will enable the most prosperous recovery for Ontario. COVID-19 has taught everyone the great importance of building a resilient economy that is better prepared to withstand unknown threats of this magnitude.

A resilient economy can be supported by:

- Leveraging Ontario's existing assets
- Building the assets that both businesses and workers of the future need to succeed
- Strengthening Ontario's competitive advantage

These urgent actions should seek to build a sustainable, resilient, and innovative Ontario, where its talent is properly developed and nourished.

- 1. Adopt, in the immediate term, the recommendations presented by the Construction & Design Alliance of Ontario (CDAO) in their letter dated April 22, 2020.**

OSPE believes that proper, smart, and prioritized investment in sustainable infrastructure will help alleviate the economic burden the province is facing, while decreasing unemployment rates in several critical sectors of the economy.

Developing a comprehensive project investment pipeline document, which is informed by existing regulated municipal asset management plans will facilitate the prioritization of early works. These projects are not only 'shovel-ready', but 'shovel-worthy' and will provide a positive return on investment. By immediately utilizing these plans to select projects for investment, the province will be able to reduce application timelines and ensure a speedy and safe recovery.

2. Support small and medium sized engineering firms by tackling increasing liability insurance costs through regulatory reform.

Engineers support the provincial and federal government's approach to focus immediately on "shovel-worthy" infrastructure projects that can deliver short- and long-term benefits for Ontarians.

However, to achieve this, engineering firms must be able to compete in the market. Currently, insurance providers consider Ontario a high-risk jurisdiction. This has impacted engineering firms greatly, causing an increase in insurance costs and implications on coverage. These changes have not only resulted in the rising cost of liability insurance (professional liability as well as commercial general liability/property) but have prevented some engineers access to specific aspects of insurance coverage that were historically readily available.

This impacts the ability of small to medium sized engineering companies to operate in the province, which limits the amount of infrastructure that can be built, further debilitating economic growth. Further, this increases the costs of engineering projects, costs which are being downloaded to consumers. As the largest procurer of infrastructure projects, the government should be deeply concerned with these escalating costs, and the availability of design talent required to build the infrastructure needed in this province.

Several factors have caused these conditions:

- The regulatory body, Professional Engineers Ontario (PEO) does not currently make continuing professional development (CPD) mandatory in Ontario, despite the recommendation brought forward by the Elliot Lake Commission of Inquiry;
- There is no minimum required liability insurance for professional engineers with a Certificate of Authorization, thus offering services to the Public;
- Engineers are not regularly focused on projects within their specialization, and many lack micro-credentials.
- Engineering firms are not required to train and develop their own talent

3. Provide further relief to Ontario's businesses and families by making surplus electricity available at current market rates.

Ontario must leverage its existing assets, which include its low-emission electricity system. This system has already been transformed into a low emission system, which produces significant amounts of emission-free electricity that is in surplus to domestic needs. Ontario currently exports most of this surplus to other Canadian provinces and the United States at low wholesale market energy prices and discards the amounts it cannot export. Unfortunately, Ontario consumers cannot access this low-cost surplus electricity, as Ontario's retail price plans do not allow surplus electricity to be made available at its low wholesale market energy price.

The government's recent announcements of suspending time-of-use rates for 45 days and deferring a portion of Global Adjustment (GA) charges for some industrial and commercial electricity consumers are only beneficial to some energy users.

The Government of Ontario should take this opportunity to implement **permanent electricity price reform** that will allow consumers to purchase surplus electricity now and in the future. This will alleviate the economic burden posed by COVID-19 by reducing energy bills for consumers and businesses, as well as decreasing greenhouse gas (GHG) emissions. This reform is required to achieve real economic relief both in the short and long term. Additionally, low-cost, carbon free electricity can support increased adoption of electric vehicles (EV), supporting job creation in the selling of EVs and its required infrastructure in both public and private locations.

4. Work with the Federal Government to upgrade and modernize the digital infrastructure that will ensure businesses and workers succeed.

COVID-19 has shown all of us that technology and high capacity infrastructure is no longer a luxury, but a necessity for both businesses and consumers to engage in today's economy. Unfortunately, access to high-speed internet is inconsistent or not available to some Ontarians. This has made working remotely challenging to certain businesses and individuals, having an impact on economic productivity.

In an environment geared towards e-commerce and online learning solutions, the government should prioritize access to broadband internet to all Ontarians, keeping in mind the need to properly connect remote and rural communities. Once construction sites open, investment in digital infrastructure will also ensure that certain simple practices and permit issuing is kept online, in order to help maintain physical distancing protocols.

As digital becomes embedded into business models and operations, it is imperative that all of Ontario's engineering companies have the capacity to operate in the new ecosystem. There is a clear chasm that exists between organizations and companies in their digital capacity. Funding digitization will enable the government to close some of the gaps that exist and keep business operating and safeguard engineering jobs in the province.

5. Support local manufacturing innovation and production

The Government of Ontario has launched a procurement tool that will remove barriers and leverage Ontario manufacturing capacity in the fight against COVID-19. Immediately, the government must continue to support the manufacturing sector to maintain strong supply chains.

The government should refocus investment in "Made-In Ontario" solutions and products. This could be achieved by working with the federal government to identify nationally strategic products and services and establish a minimum level of domestic production of these. Items such as medical supplies, PPE, food, energy, and other essentials should be included.

The uptake of technology and digitization will improve the sectors ability to be able to switch production to respond to consumer demand more quickly, not only in times of crisis but also in response to market shifts. For economic recovery it is critical that engineering expertise be deployed to ensure the safety and optimization of innovative solutions within industrial spaces. Ontario should

work with the federal government to provide additional advanced manufacturing (AM) focused programs with potential financial incentives for Ontario companies to enhance their competitiveness both domestically and internationally. Supporting businesses in improving current manufacturing processes and methods, developing, and implementing digital technologies and focusing on developing more sustainable and energy-efficient products, will help create resiliency in this sector and improve Ontario's export potential.

OSPE believes that these recommendations are essential for the economic recovery of our province. We look forward to working with the government to further develop these recommendations. If you have any additional questions please contact Stuart Atkinson, OSPE Policy and Government Relations Lead at satkinson@ospe.on.ca or 416-223-9961 ext. 225.

Sincerely,



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