The Canadian Institute of Plumbing & Heating (CIPH) and Mechanical Contractors Association of Canada (MCAC): National Infrastructure Assessment Consultation Submission

Building the Canada We Want in 2050

SUMMARY OF RECOMMENDATIONS

Investment in Retrofits

1. We recommend that the vision for the future of Canada's infrastructure set out in the National Infrastructure Assessment include a concrete plan to retrofit Canadian homes and buildings, ensuring that Canada's infrastructure in 2050 is sustainable and resilient.

2. This plan should include a detailed assessment of the current state of Canada's built environment, targets and timelines for retrofitting buildings and homes by 2050, and a roadmap to achieve those targets.

Regulatory Harmonization

3. We recommend that the National Infrastructure Assessment examine how the federal government can work with the provinces and territories to develop codes that are properly aligned across Canada and that are adopted quicker. Including this in the Assessment will maximize the efficiencies in achieving future infrastructure goals.

Skilled Trades

4. We recommend that the National Infrastructure Assessment ensure that the training, upskilling and reskilling needs of the skilled tradespeople, who will build the Canada we want in 2050, are a key consideration in the Assessment.

Governance of the National Infrastructure Assessment

5. We recommend that an independent, arms-length body be established to develop, monitor and review the National Infrastructure Assessment on a regular basis.

INTRODUCTION

Infrastructure is central to the lives of all Canadians – from the buildings we live in, to the networks we rely on to connect with others virtually, to the energy systems that keep us comfortable throughout the year. The COVID-19 pandemic has taken a severe economic and social toll in Canada and over a year into the outbreak of COVID-19, every sector of the economy has been hit hard, including the construction sector. Policymakers and economists agree that the recovery from the current crisis will be slow

and uneven across industries. This makes the need for long-term planning to boost Canada's economy and infrastructure through the National Infrastructure Assessment a welcome, and in some ways, more important initiative than ever at this point in our history.

As more Canadians receive vaccinations everyday and countries around the globe set their sights to the post-COVID era, Canada needs to take bold steps to 'build back better.' We are at a crossroads and the actions we take today will shape the future. It is critical that Canada seizes this opportunity and implements a robust plan for recovery and long-term prosperity. This is why the Canadian Institute of Plumbing & Heating (CIPH) and the Mechanical Contractors Association of Canada (MCAC) are firmly supportive of the first-ever National Infrastructure Assessment and the potential it has to chart out the future for Canada's plumbing, heating and mechanical sector. In particular, the Assessment could become a central tool to provide the construction sector and Canadians with a clear path forward to achieve our targets for net-zero emissions and to build the Canada we want in 2050. Since the outbreak of COVID-19, CIPH and MCAC have been advocating that a recovery plan from the pandemic include a strong national strategy for retrofits, regulatory harmonization, and supporting the skilled trades. Investments in retrofits, with a focus on mechanical systems, insulation, heat sources and plumbing will strengthen the economy and create jobs. A comprehensive national approach, including innovative investments in retrofits, regulatory harmonization and support for skilled trades, will not only spur the economy post-pandemic but also lead to immense environmental and health benefits well into the future. However, the need for this type of comprehensive planning in each of these priority areas is not only critical for Canada's recovery from the pandemic but it also must be an integral part of the broader vision for the future of Canada's infrastructure that the Assessment looks to set out.

As CIPH and MCAC have advocated for increased support from the federal government in these priority areas, it became increasingly clear that Canada needed to build on previous successes and prioritize investments in retrofits, regulatory harmonization and support for skilled trades in order to achieve our environmental targets. This submission highlights the economic and environmental impact of these measures and makes concrete recommendations on how Canada can leverage the National Infrastructure Assessment to encourage innovative investment in retrofits to unleash economic growth and job creation, with the ultimate goal of building a better Canada in 2050.

With additional support from the Government of Canada and by providing industry expertise on the development of the National Infrastructure Assessment, the mechanical, plumbing and heating sector are poised to make significant contributions to the economic recovery and work to build back a stronger, more resilient Canada.

SUMMARY OF CONSIDERATIONS

In order to properly chart out a vision for the next thirty years of Canadian infrastructure, the Assessments will need to critically evaluate the current state of our infrastructure. In

doing so, it is also impossible to eliminate the context of the COVID-19 pandemic. While the crisis period of this pandemic may be considered short-term in the context of planning for Canada's infrastructure in 2050, a crisis of this magnitude will shape our decisions for many years to come. An infrastructure vision and the National Infrastructure Assessment are no exception to this. This is why our submission is centred on the following core themes:

- Assessing Canada's infrastructure needs and establishing a long-term vision;
- Achieving net-zero emissions – Investing in retrofits;
- Improving coordination between owners and funders; and
- Governance of the National Infrastructure Assessment.

The Government of Canada has indicated that infrastructure investments are focused on achieving three core objectives: Promoting economic growth, job creation and competitiveness; tackling climate change and increasing resilience; and improving social inclusion and quality of life for all Canadians. The CIPH and MCAC believe that our recommendations to make retrofits, regulatory harmonization and skilled trades a core aspect of the National Infrastructure Assessment will support the federal government in achieving each of these objectives. The CIPH and MCAC also stand ready to provide the necessary industry expertise to collaborate with government to achieve these objectives through the National Infrastructure Assessment and all other infrastructure programming.

ASSESSING CANADA'S INFRASTRUCTURE NEEDS AND ESTABLISHING A LONG-TERM VISION

Currently, the Canadian economy is reeling from the devasting economic impact of COVID-19. Virtually, all sectors of the economy have been hit hard and no business has been spared. The impact of the global pandemic has been particularly severe for many industries, including the construction sector. While the federal government's financial response to COVID-19 has helped to mitigate job losses in the economy and provided some much-needed liquidity to bridge the gap to better times, more needs to be done to ensure Canada builds a resilient, sustainable and green economy of the future.

Investment in retrofits, particularly in mechanical systems, insulation, heat sources and plumbing, will not only create well-paying jobs and stimulate the economy post-crisis, but it will also help Canada achieve its 2030 greenhouse gas emission targets through significant energy savings in retrofitted buildings and homes. It is a win-win situation for government and industry.

A well-funded national home and building retrofit program based on a public and private partnership carries with it many direct and indirect benefits. These include but are not limited to the following:

- ✓ Reduction of carbon footprint
- ✓ Job creation
- ✓ Energy efficiency
- ✓ Building and home resilience to climate and natural disasters

- ✓ Health benefits
- ✓ Economic stimulus
- ✓ Increased asset value for businesses
- ✓ Utility cost savings

While we are pleased that the federal government announced a number of recent retrofit investments and programs, such as those in *A Healthy Environment and a Healthy Economy* and Budget 2021, Canada needs a long-term sustainable retrofit strategy included in the National Infrastructure Assessment in order to create green jobs and impact GHG emissions.

ACHIEVING NET-ZERO EMISSIONS – INVESTING IN RETROFITS

This crisis has highlighted the need to ensure that our homes and buildings are continuously retrofitted with the most efficient technology and products to make them safe and resilient to climate and natural disasters. There are over 15 million private residential buildings and over 480,000 commercial and institutional buildings in Canada, including offices, retail and warehouses.

Buildings, including our homes, account for 13 per cent of Canada's greenhouse gas emissions. If we include the combustion of fossil fuels for space and water heating; electricity use for cooling, lighting and appliances, the total rises to 18 per cent.[1] Therefore, investing in retrofits can help Canada reach its climate change goals and create stable, well-paying jobs in communities across the country.

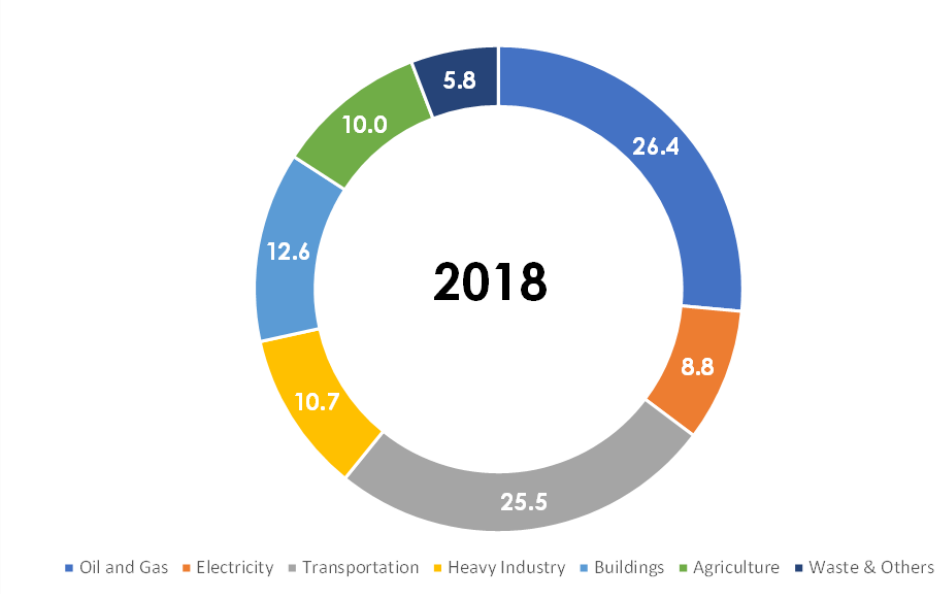
Table 2: GHG Emissions Projections by Economic Sector From 2018 to 2030 (Mt CO_2 Eq)

	Historical	Projected		Change 2005 to 2030
	2018	2020	2030	
Oil and Gas	193	177	194	36
Electricity	64	38	21	-98
Transportation	186	155	178	17
Heavy Industry	78	65	82	-5
Buildings	92	90	82	-4
Agriculture	73	73	77	5
Waste & Others	42	39	41	-5
Total	729	637	674	-56

Source: Historical and Projected emissions data, Canada's National Inventory Report (NIR) 2020.

[1] *A Healthy Environment and A Healthy Economy*, December 2020.

Chart 2: GHG Emissions by Sector – 2018 (%)



Source: Historical and Projected emissions data, Canada's National Inventory Report (NIR) 2020

Including retrofits as part of the National Infrastructure Assessment will bring economic, health and environmental benefits, create jobs and build community resilience to future crises. Retrofitting homes and buildings, including social housing, can create thousands of jobs and spur the local economies, especially if upskilling and contracts are targeted at local small and medium-sized enterprises. The buildings sector already employs millions of Canadians. The construction industry alone employs over 1.4 million workers and supports over 260,000 businesses[2], many of which are small and medium-sized businesses. In fact, a recent macroeconomics modelling[3] by *Clean Energy Canada and Efficiency Canada* indicates that for every $1 million invested in energy efficiency,16-30 net FTE jobs could be created. The same study also shows that if energy efficiency measures, including home and building retrofits, in the Pan-Canadian Framework are fully implemented, Canada could cut an estimated 79 million tonnes of GHG by 2030 — close to 40 per cent of Canada's Paris climate commitment.

In order for Canada to maximize the environmental and job creation benefits spurred by retrofits, long-term infrastructure investments that provide predictability are critical. Retrofit programs also need to include Canadian made smart technology that endures performance over the life cycle, while also meeting high efficiency and energy standards. A strategic look at retrofits in the Assessment should also make concerted regional considerations to ensure that the most efficient and cost-effective energy sources are available to Canadians in the regions they live in. By taking a regional

2 Canada's Building Trades Union: https://buildingtrades.ca/where-we-stand/industry-facts/
3 Efficiency Canada and Clean Energy Canada (2020), "Less is more."

approach to this strategy and looking at the commercial market space, Canada can take full advantage of high efficiency products that are readily available today.

Investment in retrofits will help households and businesses save on energy bills. These savings will be reinvested in the local economies through increased consumer spending and create jobs in the local communities across Canada. More jobs will also be created as demand for retrofit projects increase and businesses in the energy efficiency sector purchase more materials and tools, spurring manufacturing, and hiring more staff. Investment in retrofits can generate a powerful economic chain of reaction that will catalyze Canada's economic recovery post-pandemic, support Canada in achieving their net-zero emission targets, and contribute to an overall vision for a future for Canada's infrastructure that is greener and more resilient.

Recommendations

We recommend that the vision for the future of Canada's infrastructure set out in the National Infrastructure Assessment include a concrete plan to retrofit Canadian homes and buildings, ensuring that Canada's infrastructure in 2050 is sustainable and resilient.

This plan should include a detailed assessment of the current state of Canada's built environment, targets and timelines for retrofitting buildings and homes by 2050, and a roadmap to achieve those targets.

IMPROVING COORDINATION BETWEEN OWNERS AND FUNDERS

As the Government of Canada has noted in their engagement paper for this consultation that there are a number of components to improving the coordination between infrastructure owners and funders. The following sections review how regulatory harmonization and the skilled trades workforce can play a critical role in this improved coordination if bolstered by further study during the development of the National Infrastructure Assessment.

Regulatory Harmonization

Canada has a well-developed regulatory regime for codes development, implementation and enforcement, however, the misalignment of codes and regulations across jurisdictions remains a significant issue. The disparity in building codes and standards adoption across jurisdictions in the country creates difficulties and slows the process of bringing new and efficient products to the market. Regulatory harmonization is an important part of building greener, more sustainable infrastructure in Canada because consistency of requirements across jurisdictions will allow industry roll out energy efficient products in a fast, economical way.

In recent years, harmonization has been improved by the Canadian Free Trade Agreement (CFTA). These improvements have included consistent application of enforcement rules, the reduced dumping of non-compliant products and increased productivity for all stakeholders. The CFTA has also encouraged innovation by allowing new products to be marketed quicker, which has created a better product choice for

consumers and contractors, with fewer delays and added projects costs. Finally, the CFTA has also improved interprovincial trade and supported the national Red Seal education system. Building on the successes and improvements achieved through CFTA, there is more that can be done to improve regulatory harmonization across Canada and North America.

For many years, manufacturers and contractors in the plumbing and heating industry have developed and built products that use fuels and water more efficiently. As a result, many of the technologies needed to enhance efficiency in Canada's buildings and homes already exist. Over this time, the industry has coped with disparities in building codes and equipment standards that make it more expensive, difficult, and often impossible to provide the most efficient systems to customers. Many provinces are years behind in adopting national building codes and creating are inefficiencies for wholesalers and distributors that sell these products across Canada.

Our research estimates that different regulatory requirements, time frames for code adoption, and uneven enforcement costs can create added cumulative costs throughout the supply chain of between 30 to 40 per cent on a given project. These issues are creating bottlenecks in the construction industry that are limiting progress and economic growth across the board. This translates into hundreds of millions of dollars in extra costs annually and Canadian consumers are bearing the brunt of a fragmented system.

Our National Code development has failed to keep pace with emerging technologies. Not only is our national code cycle slow but certain provincial jurisdictions further exacerbate the issue by their lagging adoption of the national codes, which often references outdated standards or does not include new standards. The National Infrastructure Assessment has the potential to be a tool for emphasizing current codes and standards while also being a driving force to bring all provinces and territories together to ensure national success. Another key element in this success will be simplifying access to codes and standards on an ongoing basis.

Ensuring builders can easily use the most up-to-date and energy-efficient products that limit waste and reduce environmental contaminants will be fundamental to achieving the vision in National Infrastructure Assessment, particularly as it pertains to achieving the federal government's climate change goals. Considering this in the Assessment would be an important step towards ensuring that historic investments in infrastructure and retrofits can reach their full potential and make construction more efficient and productive.

Harmonization: Positive Effects of Timely Adoption

- ✓ Consistent application of enforcement rules;
- ✓ Less potential for the dumping of non-compliant products;
- ✓ Increased productivity for all stakeholders;

- ✓ Complementary support for the National Red Seal education system;
- ✓ Improved competitiveness for Canadian manufacturers and suppliers;
- ✓ Innovation encouraged — new products can be marketed more quickly;
- ✓ Increased product choice for consumers and contractors, with fewer delays and added costs on projects; and
- ✓ Improved interprovincial trade.

Recommendation

We recommend that the National Infrastructure Assessment examine how the federal government can work with the provinces and territories to develop codes that are properly aligned across Canada and adopted quicker. Including this in the Assessment will maximize the efficiencies in achieving future infrastructure goals.

Skilled Trades

The success of Canada's recovery and long-term infrastructure planning is closely tied to the ability to deliver key infrastructure and retrofit projects in the near and long-term. **To that end, Canada needs to build capacity and invest in training opportunities to upskill and retrain workers from other industries, while promoting skilled trades as retirement in the construction workforce accelerates over the next decade. Canada needs to act now the improve apprentice uptake to grow the industry faster.**

The reality of aging demographics in the sector is especially true for the mechanical trades which faces major labour shortages in the next couple of years. Approximately 22 per cent[4] of the overall construction workforce is expected to retire by 2029 and close to 18 per cent of pipe trades (plumbers, pipefitters, sprinkler, HVAC) workers are retiring over the next decade. This means that greater demands are being placed on the individuals who will remain in the construction labour force. In addition, training and skills certifications have become increasingly complex as technologies evolve and the sector advances. Some programs, like the Union Training and Innovation Program and the new Sectoral Workforce Solutions Program announced in Budget 2021, are assisting by providing opportunities to groups that are traditionally underrepresented, including newly arrived immigrants, Indigenous peoples and women. However, more needs to be done to ensure Canadians benefit from the changing workforce dynamics and the construction sector remains a driver of productivity. Part of this is also providing the right incentives for contractors to hire new apprentices to grow the industry while also providing predictability of work with long-term, sustainable infrastructure investments.

[4] BuildForce Canada, "Investing in recruitment and training still essential to avoid future skilled labour challenges."

Part of including skilled trades considerations in the National Infrastructure Assessment will be ensuring that training provides skilled tradespeople with a wider educational horizon to understand more than one system. For example, for the interconnected nature of the operations, functions and interferences of systems to properly understood, a plumber should also have a basic education in hydronics and base electrics.

This aspect is important to the Assessment as businesses in the construction sector need to be supported through training opportunities for apprentices and the promotion of skilled trades. They also need predictability of forthcoming work and Canada's ability to deliver infrastructure projects is critical to providing recruits with on-the-job experience and hours to qualify as tradespeople.

Recommendation

We recommend that the National Infrastructure Assessment ensure that the training, upskilling and reskilling needs of the skilled tradespeople, who will build the Canada we want in 2050, are a key consideration in the Assessment.

GOVERNANCE OF THE NATIONAL INFRASTRUCTURE ASSESSMENT

In order to ensure that Canada's first-ever National Infrastructure Assessment is set up for success, there are some considerations to be made around the governance of the Assessment itself. In this context, there is much we can learn from the United Kingdom's experience. The CIPH and MCAC are recommending that some lessons are taken from the UK model in how Canada's Assessment will be governed, managed and reviewed.

First, CIPH and MCAC recommend that an independent, arms-length body be established to develop, monitor and review the National Infrastructure Assessment on a regular basis. This independent model for the Assessment will provide long-term credibility by ensuring that it is truly non-partisan and informed by industry and experts. This type of non-partisan body will be critical to ensuring that the Assessment is successful and that the vision set out within it are achieved for many years to come. Another benefit to this independent governance is the potential for this body to become a central hub not only for the National Infrastructure Assessment itself but also other tools, best practices and resources for government, industry, and private sector partners alike.

In addition, the CIPH and MCAC recommend that the National Infrastructure be reviewed and updated regularly. While the Assessment aims to set out the vision for the Canada we want to build in 2050, it will need to be reviewed and monitored on a rolling basis to ensure that Canada achieves its infrastructure goals even beyond 2050. These regular reviews should also include public reporting on the state of Canda's infrastructure, the progress being made, and how this progress measures against the goals defined in the Assessment. In sum, the National Infrastructure Assessment will need to serve two primary needs – setting out a bold vision for Canada's infrastructure in 2050 while also providing for this initiative to be a living, flexible tool that can move Canada forward to our goals for 2050 and far beyond.

CONCLUSION

The Canadian Institute of Plumbing & Heating and the Mechanical Contractors Association of Canada looks forward to continued collaboration with the Government of Canada, industry and other stakeholder partners to develop Canada's first-ever National Infrastructure Assessment. Our two national associations are well-positioned to serve in leadership or advisory aspects of developing the Assessment. We would also be pleased to bring together industry leaders through our respective memberships and networks to provide expertise and feedback on the development of the National Infrastructure Assessment. We share the federal government's goal of working to create a successful and green economic recovery from the COVID-19 crisis and beyond. The Canadian Institute of Plumbing & Heating and the Mechanical Contractors Association of Canada stand ready as partners to work in collaboration with the government achieve these goals through the development of a comprehensive National Infrastructure Assessment.

ABOUT US

MCAC
Mechanical Contractors Association of Canada
BUILDING SMARTER TOGETHER

The Mechanical Contractors Association of Canada (MCAC) is a national, non-profit federation of autonomous provincial associations working for the betterment and advancement of the trade and mechanical contracting industry in Canada. Established in 1895, MCAC is a vibrant and diverse national association serving the needs of mechanical contractors of all sizes engaged in such disciplines as plumbing, heating, ventilation, air conditioning, controls systems, medical gases, welding, and fire suppression primarily within the industrial, commercial and institutional sectors. With offices in each province and 15 regional offices in Ontario, the MCAC is Canada's largest trade contractor Association.

CIPH
Canadian Institute of Plumbing & Heating

Founded in Montreal in 1933, the Canadian Institute of Plumbing and Heating (CIPH) is a not-for-profit trade association that is committed to providing members with the tools for success in today's competitive environment. More than 283 companies are members of this influential Canadian industry association. They are the manufacturers, wholesaler distributors, master distributors, manufacturers' agents, and allied companies who manufacture and distribute plumbing, heating, hydronic, industrial PVF, and waterworks, and other mechanical products. CIPH wholesalers operate more than 700 warehouses and showrooms across Canada. Total industry sales exceed $7 billion annually and CIPH members have more than 25,000 employees from coast to coast.