

Navigating the COVID-19 Socio-economic Shock:

How infrastructure investments will
facilitate future growth in Ontario

June 2020

This report was commissioned by the
Residential and Civil Construction Alliance of Ontario (RCCAO)



**CANADIAN CENTRE FOR
ECONOMIC ANALYSIS**

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TABLE OF CONTENTS

Table of Contents	ii
List of Figures	iii
List of Tables	iii
Executive Summary.....	1
Preface	1
Results at a glance.....	2
Observations and Recommendations	4
1.0 Introduction	6
1.1 Ontario’s Persistent Infrastructure Investment Gap	6
1.2 COVID-19 and Infrastructure Investment	7
1.3 Objective and Approach.....	8
2.0 Infrastructure Investment & Municipal Financing Scenario Results.....	9
2.1 Risk and Preferred Scenario Comparison	9
2.2 Risk Scenario: Current Trajectory	11
2.3 Preferred Scenario	12
3.0 Conclusions	14
A. Additional Tables	15
A.1. Planned Investments	15
B. References	17
C. 2019 Ontario Infrastructure Investment Bulletin	18

LIST OF FIGURES

Figure 1	Employment: comparison to base case	10
Figure 2	Net present value of revenues less cost: Federal government	10
Figure 3	Net present value of revenues less costs: Ontario government.....	11

LIST OF TABLES

Table 1	Risk Scenario description	12
Table 2	Risk Scenario results.....	12
Table 3	Preferred Scenario description	13
Table 4	Preferred Scenario results	13
Table 5	Planned investments by level of government 2019-2049	15
Table 6	Planned investments by level of government 2049-2069	16

EXECUTIVE SUMMARY

PREFACE

In a relatively short time, COVID-19 has caused a shock to our socio-economic system, which is impacting the private sector, households and the fiscal outlook of governments. Municipalities across Ontario are facing the prospect of operating deficits due to the heightened need for municipal services and the simultaneous drop in revenue streams.¹ This, combined with the large expected decline in both provincial and federal GDP due to the economic slowdown, could put Ontario's planned infrastructure investments at risk while also threatening to limit the financial returns from past infrastructure investments. The government response to this situation will have long-term implications for growth even when the economy starts to recover.

Public infrastructure is essential for supporting economic growth in Ontario. The roadways, hospitals, transit, power grids, broadband and water systems that are all part of Ontario's infrastructure enable and sustain household and commercial activity. Without the proper infrastructure in place, Ontario's economic growth will be constrained. Over time, infrastructure investments generate government revenue through the taxation of the additional economic activity and employment it supports. In the long run, this means that smart investments in infrastructure pay for themselves.

Smart and consistent infrastructure investments lay the foundation for public prosperity and economic growth. For instance, the St. Lawrence Seaway is a large-scale project that provided substantial long-term economic benefit. The full value of this investment could only be fully realized with additional investments in ports, docks and other maritime infrastructure. The same principle applies to smaller projects. Over time, consistent and predictable investments in infrastructure, including proper asset management², are required to safeguard the value of past investments and ensure revenues continue to flow from the use of those assets.

Growing municipal operating deficits could put infrastructure investments at risk because the Government of Ontario may be inclined to cover these deficits using the provincial capital budget, reducing the funds available for new infrastructure projects and necessary ongoing operations and maintenance. In the absence of any action from the Federal or Ontario government, the alternative is for municipalities to downsize their workforces and cut costs, adding to the total job losses precipitated by the pandemic and further eroding services available to the public.

The Federal government, as well as the governments of Ontario and its municipalities, are at a critical decision point and will need to find solutions that address municipal operating deficits while also funding future infrastructure projects in Ontario that will enable long-term economic growth.

¹ This issue is covered in a piece entitled [Covid-19 crisis creates chance to re-examine provincial funding of cities](#) by Enid Slack and Tomas Hachard published April 6, 2020 in The Star.

² Ontario is one of the first provinces to enact asset management legislation in 2017, which can be found on the [Ontario Government website](#).

RESULTS AT A GLANCE

The medium- and long-term effects of various infrastructure investment decisions by the Provincial and Federal governments were simulated using CANCEA's socio-economic analysis platform which uses historical data to simulate the behaviour of individuals, households, governments and firms. A range of plausible infrastructure investment scenarios was simulated within the platform. Results are reported for the two scenarios below which yielded risky and preferred outcomes:

- 1) Risk Scenario: The Federal and Ontario governments adjust their infrastructure spending to the economic downturn and contribute the same share of GDP to infrastructure as they had pre-crisis (0.4% and 2.4%, respectively).³ Municipal operating deficits are covered using funds from Ontario's capital budget.
- 2) Preferred Scenario: The Federal and Ontario government commit to investing the same amount in infrastructure as was planned pre-crisis with the Federal Government contributing additional funds to Ontario's capital budget to cover a portion of municipal operating deficits – calculated to be 56%⁴ - the balance of which would be paid by Ontario, thereby ensuring that municipalities maintain their capital plans.

These two scenarios were modelled and compared to a “status quo” baseline in which the Provincial and Federal governments take no new action – they continue to invest the same share of GDP in infrastructure as they had pre-crisis – and municipalities cut costs to prevent deficits. The Risk Scenario results in significantly lower employment and government revenue over 30 years, while the Preferred Scenario generates net benefits after twenty years. Under the Risk Scenario, the Province risks having 55,000 fewer jobs on average per year (0.7% less on average), as well as \$8 billion and \$12 billion less in Federal and Provincial government revenue over the next decade compared to the status quo. These losses increase even further after 30 years. Key outcomes for this scenario are presented in the table below.

10- and 30-year outcomes of the Risk Scenario compared to baseline

Risk	After 10 Years	After 30 Years
Average Employment loss per year	-55,000 jobs	-79,000 jobs
Federal Government Revenue decline	-\$8 billion	-\$36 billion
Ontario Government Revenue decline	-\$12 billion	-\$51 billion

The opposite is true for the Preferred Scenario. Over the next decade, this scenario results in a gain of 61,000 jobs on average per year (0.9% more on average), as well as \$9 billion and \$13 billion in Federal and Provincial government revenue compared to the status quo. These benefits increase substantially after 30 years, as can be seen in the table below.

³ Note that while investment as a percentage of GDP may be a useful metric for governments in times of economic stability, its use during times of economic downturn threatens the stability and predictability of infrastructure investment.

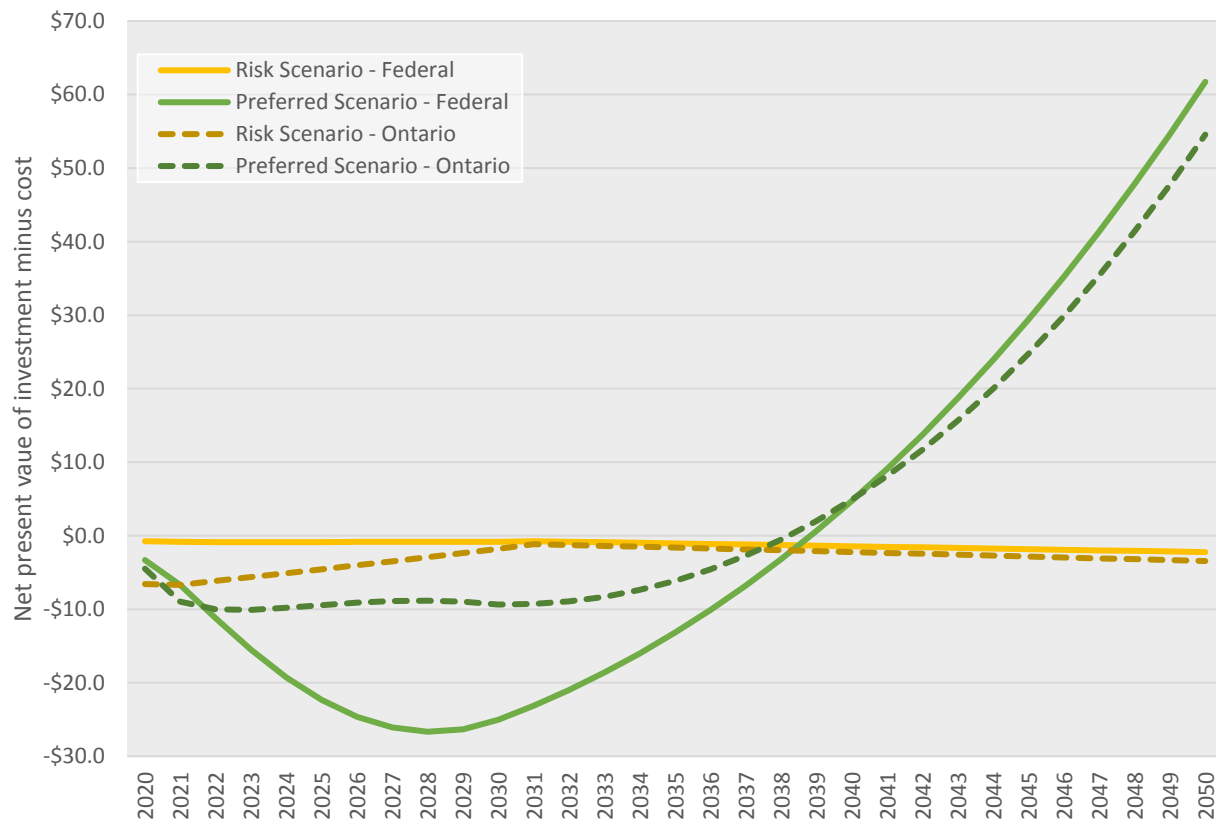
⁴ This is the portion that equalizes the payback period for the Provincial and the Federal governments.

10- and 30-year outcomes of the Preferred Scenario compared to baseline

Benefit	After 10 Years	After 30 Years
Average Employment gain per year	+61,000 jobs	+189,000 jobs
Federal Government Revenue increase	+\$9 billion	\$86 billion
Ontario Government Revenue increase	+\$13 billion	\$123 billion

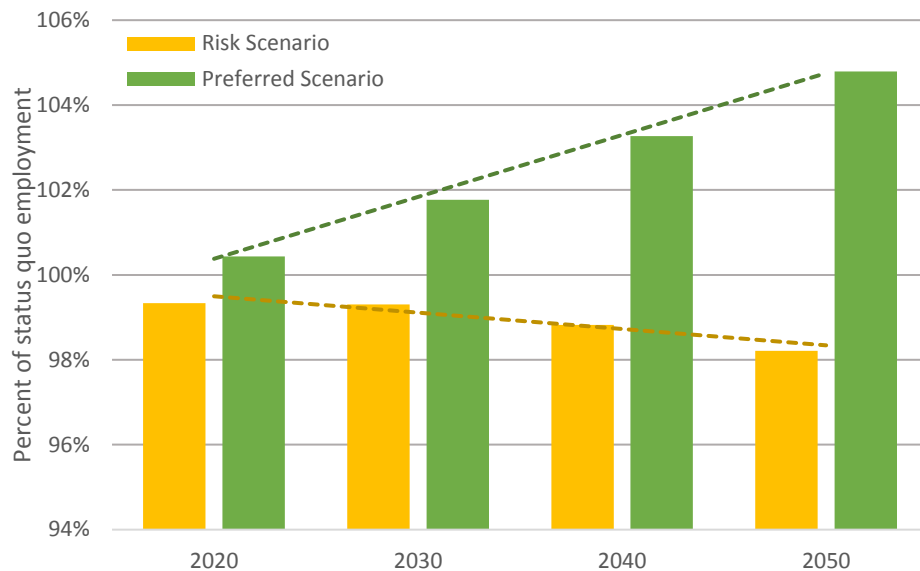
Furthermore, in the Risk Scenario, the benefits of infrastructure investment do not make up for the costs over those 30 years. In the Preferred Scenario, however, the benefits outweigh the costs by a factor of 1.9 and the investments are recuperated by both levels of government within 20 years on a present value basis. The payback curves for the Federal and Provincial governments are shown in the figure below.

Net present value of revenues from investment less costs



The employment outcomes also differ significantly between the two scenarios, and the difference increases over time, as can be seen in the figure below which shows the percentage of status quo employment under each scenario for the next three decades.

Annual employment changes: comparison to status quo



OBSERVATIONS AND RECOMMENDATIONS

- 1) These are difficult times for our governments and the fiscal pressure to help citizens and businesses is growing. Despite these pressures, strong infrastructure investments must be a priority.
- 2) Previous CANCEA research has shown that there is an imbalance in public infrastructure investment levels by tier of government, with the Federal Government continuing to receive a greater share of the benefits from infrastructure investment compared to what it contributes.
- 3) This analysis shows that the decisions made today by all levels of government about how much to invest in infrastructure and how to address municipal operating deficits will have far-reaching impacts. If the Ontario and Federal governments do not invest the same amount in infrastructure as was planned pre-crisis and the Province uses funds from its capital budget to cover municipal deficits, then there will be clear and measurable consequences, namely lower long-term growth, fewer jobs and lower government revenue. The current once-in-a-generation socio-economic crisis caused by the pandemic will only compound the consequences and significance of this decision.
- 4) The economic modelling highlights that smart infrastructure investments are only fully realized over the long-term. For this reason, investing in new infrastructure should not be seen as a reflex stimulus response but rather a consistent, ongoing journey along a path to ensuring conditions are in place for long-term economic recovery and growth. Funding directed at maintaining physical assets in a state of good repair (SOGR), on the other hand, could be considered as a stimulus measure since it tends to be more labour intensive and its economic impacts are more immediate.

Navigating the COVID-19 Socio-economic Shock

- 5) Certain projects deemed worthwhile before the COVID-19 crisis might have to be re-evaluated to ensure that they continue to achieve a sufficient return on investment. This theme was addressed in our [2015 report](#) which captured the importance of infrastructure productivity coupling by comparing the returns on infrastructure investments with an equal-sized investment in non-durable consumer consumption goods.
- 6) CANCEA's independent analysis aligns with the Federation of Canadian Municipalities' estimate that \$10 to \$15 billion is required to cover all municipal operating deficits for 2020.
- 7) The Government of Ontario and its municipalities, as well as the Federal Government, have a shared interest in ensuring that infrastructure investments are sustainable and deliver long-term economic benefits. Choosing smart investment strategies to derive these benefits and support growth requires robust business case analyses that use objective, modern evaluation methods. In addition to re-evaluating past assumptions about infrastructure investments, a coordinated approach which recognizes the shared interest of all orders of government is critical.

1.0 INTRODUCTION

1.1 ONTARIO'S PERSISTENT INFRASTRUCTURE INVESTMENT GAP

Public infrastructure creates the foundation for economic growth, enabling and facilitating economic activity between the actors in an economy. It supports production and transportation across the province and buttresses the economy as a whole. Continued investments in high-quality, modern infrastructure are essential for supporting future economic growth in Ontario. These investments ensure that power systems, roadways, transit and waste and water management systems are built, which encourage and sustain household and industrial activity.

Over the past decade, CANCEA has been reporting on infrastructure investments in Ontario using an approach that considers the broader system effects of infrastructure investments that are not captured in traditional economic analysis, namely the value of infrastructure as a foundation for economic growth. This analysis has shown that in the long term, through increased economic activity, infrastructure investments increase the scale of employment and wages, which benefits individuals. In addition, the business community benefits when these investments support net profits (RiskAnalytica, 2010; 2011; 2018). Further, all levels of government benefit fiscally from investments in Ontario's infrastructure through income taxes. This means that carefully selected infrastructure projects can be cost-effective, in the long term.

Despite their potential long-term benefits, investments in Ontario's infrastructure have remained well below the long-term growth maximizing level (RiskAnalytica, 2010; 2011; 2014; 2018). Our 2011 study found that investing 5.1% of GDP in Ontario's infrastructure would yield the greatest long-term benefits to Ontario's economy. Between 2000 and 2010, infrastructure investment averaged about 3.1% of GDP. Since then, investment as a percentage of GDP further decreased to 2.79% (CANCEA, 2019). Based on our most recent analysis,⁵ the level of investment in infrastructure that maximizes long-term growth is now 5.4% of GDP.⁶

In addition, our macroeconomic analysis has demonstrated that if public infrastructure funding was shared according to the fiscal benefits that accrue to different levels of government, then all Ontario-based governments would be expected to invest 3.25% of GDP and the Federal Government, 2.15%. Instead, their respective contributions are 2.4% and 0.4% (CANCEA, 2018). This limits Ontario-based governments' ability to cover the cost of funding their investments in infrastructure. On the other hand, the Federal Government is a net beneficiary of Ontario's public infrastructure investments since it invests significantly less than the return it receives through income taxes.

⁵ CANCEA's 2019 Bulletin is attached in Appendix C for reference.

⁶ Note that since this is a long-term measure, there is no change to the optimum as a result of the current economic shock.

1.2 COVID-19 AND INFRASTRUCTURE INVESTMENT

Municipalities are experiencing operating budget shortfalls as they expend resources to put in place new measures to support their residents during the COVID-19 pandemic and ensure the ongoing provision of important services. Simultaneously, the mandatory closing of non-essential businesses is causing a significant drop in municipal revenue sources (Federation of Canadian Municipalities, 2020; Slack & Hachard, 2020). Municipal accounts, by law, cannot go into deficit, therefore municipalities must find ways to balance their budgets. The Federation of Canadian Municipalities estimates that \$10 to \$15 billion in funding would be required to cover the budget shortfalls of Canadian municipalities in the near-term (2020).⁷ In response to this situation, the Federal Government announced it would provide municipalities with an advanced transfer of \$2.2 billion for infrastructure projects through the federal Gas Tax Fund.

In the absence of any further action from the Federal or Provincial governments, municipalities are likely to be faced with difficult decisions to rescale their workforces and overall budgets (Rider & Campion-Smith, 2020). This would cost Ontarians both jobs and municipal services that will be required during the crisis. Alternatively, the Province might be inclined to cover municipal operating deficits using its capital budget. Though this approach avoids the immediate job losses and cuts to municipal services, it could lead to a reduction in infrastructure investments with implications for long-term economic and employment growth.

The Ontario infrastructure investment gap is therefore at risk of growing due to the current crisis. As our previous reports on the subject have shown, the level of investment in Ontario's infrastructure has been decreasing relative to that required to maximize long-term GDP growth. If the Federal and Ontario-based governments (including the Province and municipalities) plan to invest the same percentage of GDP into Ontario's infrastructure as they had pre-crisis (0.4% and 2.4%, respectively), and municipal operating deficits are funded through Ontario's capital budget, the repercussions on future growth are potentially large and the negative effects, long-lasting.

Past infrastructure commitments are made with the expectation of future growth. The St. Lawrence Seaway is an example of a large-scale project that promoted trade, but smaller projects such as subdivisions also provide benefits. Thus, the returns on these past investments from income tax are also at risk. This is because the full value of that investment will only be realized once those follow-on investments are made. For instance, the value of the St. Lawrence Seaway increased with the addition of ports, locks and other maritime infrastructure. Similarly, the value of a new road through undeveloped land will increase if water and wastewater infrastructure to service the land is put in place. If it is not, the road to nowhere has little value.

It is also important to highlight that the economic activity and growth enabled by infrastructure investment is achieved in the long-term. In the context of the current crisis, infrastructure investment should therefore not be seen as a stimulus response, since significant benefits emerge only over decades.

⁷ CANCEA's own analysis confirms that this is a reasonable estimate.

1.3 OBJECTIVE AND APPROACH

The purpose of this analysis is to quantify the medium- and long-term risks of different infrastructure investment scenarios to Canada's prosperity. These impacts are estimated as changes to GDP, employment and government revenue for each level of government over the next decade and the next 30 years, relative to a base case where governments do not take any new action.

To understand the medium- and long-term effects of different infrastructure investment decisions by Provincial and Federal governments on Ontario's economy, CANCEA used its socio-economic analysis platform which produces agent-based statistical simulations. Using historical data, the platform simulates the behaviour of computational economic agents under different infrastructure investment scenario to understand the outcomes that emerge from their interactions.⁸

⁸ Further details on CANCEA's modelling approach for the evaluation of infrastructure investment can be found in our 2016 report entitled [The Economic Impact of Canadian P3 Projects: Why building infrastructure 'on time' matters.](#)

2.0 INFRASTRUCTURE INVESTMENT & MUNICIPAL FINANCING SCENARIO RESULTS

Scenario analysis was conducted using CANCEA's socio-economic analysis platform to estimate the long-term economic outcomes of pursuing different plausible infrastructure investment and municipal funding strategies. This section reports outcomes under these two scenarios and highlights the magnitude of the difference between the best and the worst case. In both scenarios, the impact is measured as the difference in outcome relative to a "status-quo" base case. The base case represents a situation where the governments take no new action.

In the base case, investment as a percentage of federal GDP remains constant at pre-crisis levels. The Federal Government continues to invest 0.4% of GDP in Ontario's infrastructure while the Provincial Government invests 2.4% of provincial GDP. In the base case, municipalities rescale their workforces and costs to cover deficits. In 2020, the combined deficits of Ontario municipalities add up to \$5.47 billion, which narrows over time such that budgets are balanced by 2029. In each scenario, all municipal operating deficits are covered up to 2029.

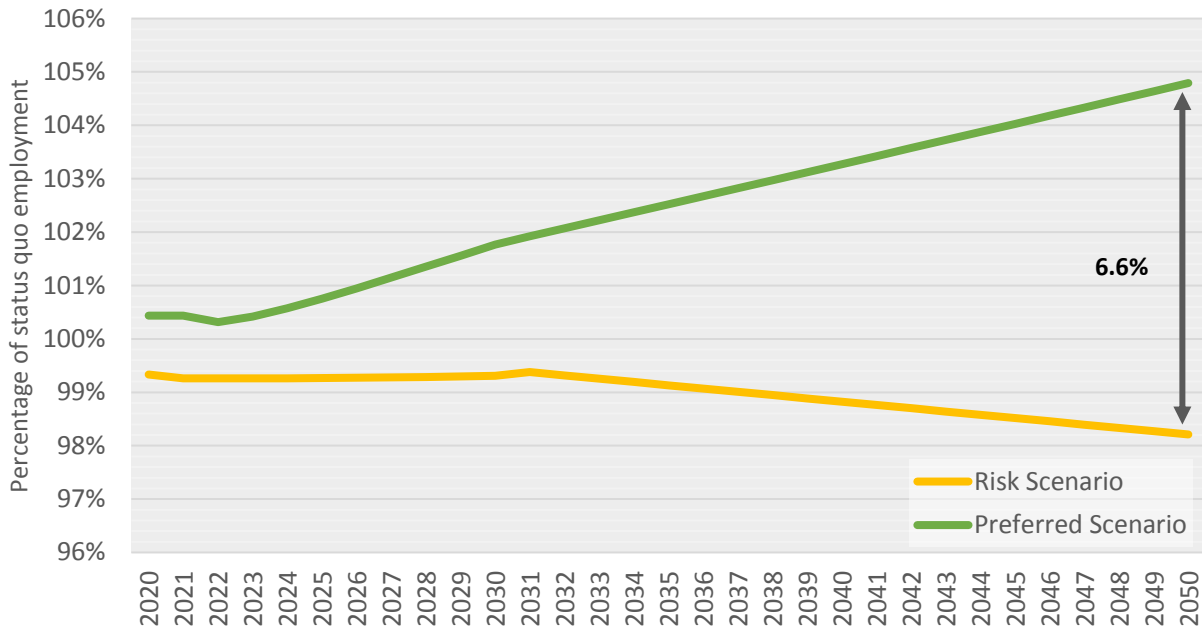
2.1 RISK AND PREFERRED SCENARIO COMPARISON

The Risk Scenario is that in which the Federal and Ontario government adjust their infrastructure spending to the economic downturn and contribute the same share of GDP to infrastructure as they had pre-crisis, and Ontario's capital budget is used to cover municipal operating deficits. In this scenario, Ontario could see 55,000 fewer jobs, on average, over the next ten years compared to the base case.

On the other hand, the Preferred Scenario is when the Federal and Ontario governments stick to their pre-crisis infrastructure investment plans and the Federal Government makes an additional contribution to Ontario's capital budget, earmarked for municipalities, that covers 56% of municipal operating deficits. In this scenario, employment increases relative to the base case, as do the revenues of the Federal and Ontario governments.

The difference in employment by year between the Risk and Preferred Scenarios over the next three decades is shown in Figure 1.

Figure 1 Employment: comparison to base case



In the Risk Scenario, the revenue generated by infrastructure investments does not exceed the costs in a 30-year period. In the Preferred Scenario, however, the Provincial and Federal governments both recuperate their investments in infrastructure in the form of taxation revenue within 20 years. After 30 years, the benefits exceed the costs by a factor of 1.9. The payback curves for both the Federal and Ontario government over time are shown in Figure 2 and Figure 3 below.

Figure 2 Net present value of revenues less cost: Federal government

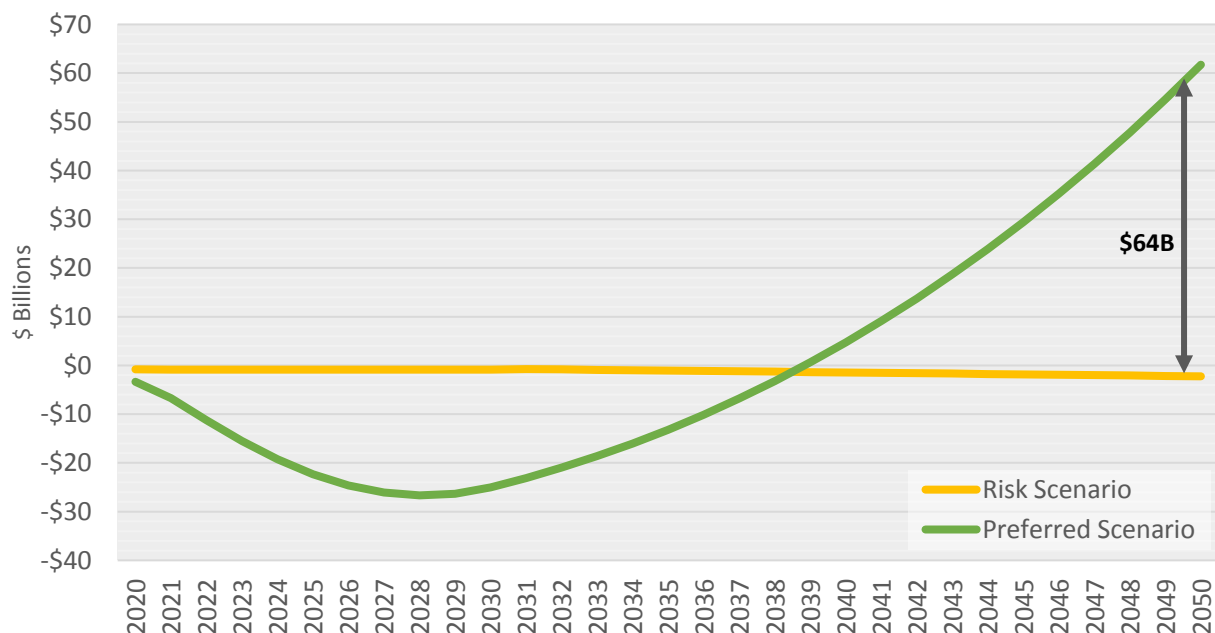
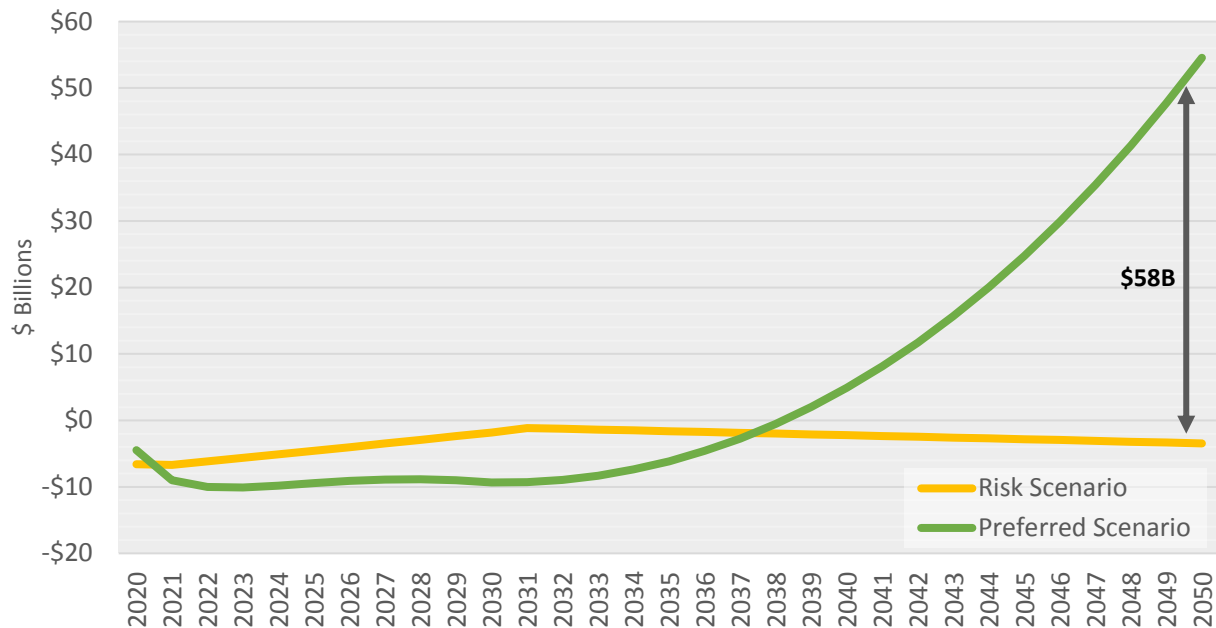


Figure 3 Net present value of revenues less costs: Ontario government



This analysis demonstrates that the approach in the Preferred Scenario benefits the municipal and Provincial governments of Ontario, as well as the Federal Government. This highlights infrastructure investment in Ontario as an area of common interest for all levels of government.

2.2 RISK SCENARIO: CURRENT TRAJECTORY

This scenario is probable given the current situation. Here, the governments of Canada and Ontario (including the Province and municipalities) adjust their infrastructure investments to the downturn in GDP. In other words, they continue to invest the same share of GDP as they did pre-crisis, leading to a decrease in the dollar amount invested. In this scenario, Ontario uses its capital budget to fund the operating deficits of its municipalities.

Table 1 Risk Scenario description

Level of Government	Financial Approach
Municipal	Municipal deficits are paid for by the Province out of the Capital Budget.
Ontario	The Provincial Government maintains its investment in infrastructure at 2.4% of GDP (pre-crisis share of GDP). Municipal deficits are subtracted from this total.
Federal	The Federal Government maintains its investment in Ontario's infrastructure at 0.4% of GDP (pre-crisis share of GDP).

The results of this scenario demonstrate that over the next ten years, this course of action will cost Ontario 55,000 jobs⁹, on average. In addition, it will cost the Federal and Ontario governments \$8 billion and \$12 billion in taxation revenue, respectively, over the same period. Over 30 years, there will be 79,000 jobs¹⁰ lost, on average, compared to the base case, and the Federal and Ontario governments will lose \$36 billion and \$51 billion in taxation revenue, respectively (at 2020 present value). The key results under this scenario are presented in Table 2 below. Additionally, the Federal and Provincial governments cannot recuperate their investment through taxation revenue within 30 years.

Table 2 Risk Scenario results

10-Year Cumulative Impact			30-Year Cumulative Impact		
Impact	Federal	Provincial	Impact	Federal	Provincial
Municipal Deficits Covered (\$B)	-	\$29.2	Change Taxation Revenue from Base Case (\$B Present value)	-\$35.9	-\$51.4
Change in Infrastructure Investment (\$B)	-\$0.1	-\$36.7	Additional Cost from Base (\$B)	\$0.0	\$0.0
Change in % Invested	-0.2%	-18.6%	Benefit-Cost Ratio	N/A	N/A
Investment as % of GDP	0.4%	2.0%	Payback Period (Years)	N/A	N/A
Average Annual Job Impact	-55,329		Average Annual Job Impact	-79,034	

2.3 PREFERRED SCENARIO

In this scenario, the Federal Government maintains its planned dollar amount contribution to Ontario's infrastructure. It also pays a capital contribution to Ontario equal to 56% of municipal operating deficits. Similarly, the Ontario Government maintains its planned dollar amount investment and pays a capital contribution to Ontario's municipalities equal to the operating deficits out of the capital budget. With

⁹ The equivalent of 55,000 people employed full-time over ten years.

¹⁰ The equivalent of 79,000 people employed full-time over 30 years.

their deficits covered by the Federal and Provincial governments, municipalities keep their pre-crisis capital plans

Table 3 Preferred Scenario description

Level of Government	Financial Approach
Municipal	Municipal deficits are paid for by the Province out of the capital budget.
Ontario	The Provincial Government maintains its investment in infrastructure at the pre-crisis planned dollar amount ¹¹ , \$21 billion. Municipal adjustments come out of this investment (noting that 56% is covered by the Federal government's capital contribution).
Federal	The Federal Government keeps to its infrastructure investment plans. It maintains its dollar amount investment in Ontario's infrastructure, which is \$3.6 billion in 2020. Additionally, it pays a \$3.0 billion capital contribution to Ontario, which is equal to 56% of municipal deficits.

The results of this scenario demonstrate that over the next ten years, this course of action would result in an additional 61,000 jobs¹², on average, compared to the baseline. Federal and provincial government revenues also increase by \$9 billion and \$13 billion, respectively. Over 30 years, the annual average job gain will climb to 189,000¹³ and the Federal and Ontario governments will see an increase in their taxation revenue of \$86 billion and \$123 billion, respectively (at 2020 present value). This represents a benefit-to-cost ratio of 1.9, with a payback period of 20 years for the Federal Government and 19 for the Provincial Government. The full results under this Preferred Scenario are presented in Table 4 below.

Table 4 Preferred Scenario results

10-Year Cumulative Impact			30-Year Cumulative Impact		
Impact	Federal	Provincial	Impact	Federal	Provincial
Municipal Deficits Covered (\$B)	-	\$29.2	Change Taxation Revenue from Base Case (\$B Present value)	\$85.6	\$122.6
Change in Infrastructure Investment (\$B)	\$36.1	\$2.0	Additional Cost from Base (\$B)	\$45.9	\$65.7
Change in % Invested	109.6%	1.0%	Benefit-Cost Ratio	1.9	1.9
Investment as % of GDP	0.8%	2.4%	Payback Period (Years)	20	19
Average Annual Job Impact	60,975		Average Annual Job Impact	188,665	

¹¹ See the Appendix for a full table of the planned investment dollar amounts pre-crisis.

¹² The equivalent of 61,000 people employed full-time over ten years.

¹³ The equivalent of 189,000 people employed full-time over 30 years.

3.0 CONCLUSIONS

The current COVID-19 crisis continues to affect Ontario's economy and cause employment losses. At this crucial juncture, holding back on infrastructure investments in Ontario can exacerbate the effects of the crisis and hamper our recovery. On the other hand, choosing the Preferred Scenario will go a long way to addressing the social and economic upheaval which we are now facing. Investing for recovery will pave the way for long-term growth. To date, the Federal Government's response to municipal operating shortfalls, namely to fast-track \$2.2 billion in infrastructure funding through the Gas Tax Fund, is insufficient. To shift away from the Risk Scenario and towards the Preferred Scenario, new money must be allocated for this purpose.

Infrastructure in Ontario is an especially high-paying investment for the Federal Government: the Federal Government enjoys large tax revenue surpluses as a result of these investments. However, if the Provincial and municipal governments reduce their infrastructure investments (in relative or real terms) as a result of this crisis, the returns to past investments are at risk. The Federal, Provincial and municipal governments must, therefore, work together to ensure the necessary investments in Ontario's infrastructure are in place to facilitate economic recovery and foster long-term economic growth. In a post-COVID-19 world, robust business case analyses for infrastructure investments are essential, but the usual assumptions about strategic investments will have to be re-evaluated.

This analysis also shows that the economic benefits associated with infrastructure investments are best appreciated in the long-term. Given the speed and volatility of the current crisis infrastructure investments should not be evaluated based on their ability to provide rapid economic stimulus. Instead, it is important to recognize that infrastructure brings long-term value to Ontario by expanding the foundation upon which economic activity can take place. Infrastructure investments, therefore, pave the way towards higher ground that can only be reached if all levels of governments work together.

A. ADDITIONAL TABLES

A.1. PLANNED INVESTMENTS

Table 5 Planned investments by level of government 2019-2049

Year	Expected GDP (pre-crisis)	Federal Planned Investment	Provincial Planned Investment
2019	\$898	\$3.6	\$21.6
2020	\$909	\$3.6	\$21.8
2021	\$920	\$3.7	\$22.1
2022	\$931	\$3.7	\$22.3
2023	\$942	\$3.8	\$22.6
2024	\$953	\$3.8	\$22.9
2025	\$965	\$3.9	\$23.2
2026	\$976	\$3.9	\$23.4
2027	\$988	\$4.0	\$23.7
2028	\$1,000	\$4.0	\$24.0
2029	\$1,012	\$4.0	\$24.3
2030	\$1,024	\$4.1	\$24.6
2031	\$1,036	\$4.1	\$24.9
2032	\$1,049	\$4.2	\$25.2
2033	\$1,061	\$4.2	\$25.5
2034	\$1,074	\$4.3	\$25.8
2035	\$1,087	\$4.3	\$26.1
2036	\$1,100	\$4.4	\$26.4
2037	\$1,113	\$4.5	\$26.7
2038	\$1,126	\$4.5	\$27.0
2039	\$1,140	\$4.6	\$27.4
2040	\$1,154	\$4.6	\$27.7
2041	\$1,167	\$4.7	\$28.0
2042	\$1,181	\$4.7	\$28.4
2043	\$1,196	\$4.8	\$28.7
2044	\$1,210	\$4.8	\$29.0
2045	\$1,225	\$4.9	\$29.4
2046	\$1,239	\$5.0	\$29.7
2047	\$1,254	\$5.0	\$30.1
2048	\$1,269	\$5.1	\$30.5
2049	\$1,284	\$5.1	\$30.8

Table 6 Planned investments by level of government 2049-2069

Year	Expected GDP (pre-crisis)	Federal Planned Investment	Provincial Planned Investment
2050	\$1,300	\$5.2	\$31.2
2051	\$1,315	\$5.3	\$31.6
2052	\$1,331	\$5.3	\$31.9
2053	\$1,347	\$5.4	\$32.3
2054	\$1,363	\$5.5	\$32.7
2055	\$1,380	\$5.5	\$33.1
2056	\$1,396	\$5.6	\$33.5
2057	\$1,413	\$5.7	\$33.9
2058	\$1,430	\$5.7	\$34.3
2059	\$1,447	\$5.8	\$34.7
2060	\$1,464	\$5.9	\$35.1
2061	\$1,482	\$5.9	\$35.6
2062	\$1,500	\$6.0	\$36.0
2063	\$1,518	\$6.1	\$36.4
2064	\$1,536	\$6.1	\$36.9
2065	\$1,554	\$6.2	\$37.3
2066	\$1,573	\$6.3	\$37.8
2067	\$1,592	\$6.4	\$38.2
2068	\$1,611	\$6.4	\$38.7
2069	\$1,630	\$6.5	\$39.1

B. REFERENCES

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C. 2019 ONTARIO INFRASTRUCTURE INVESTMENT BULLETIN



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Ontario Infrastructure Investment: Underinvestment Trend Continues

An independent research update prepared for the Residential and Civil Construction Alliance of Ontario.

INVESTMENTS IN ONTARIO INFRASTRUCTURE OVER THE LAST 10 YEARS

After Ontario's latest budget announcement, it is an important time to assess whether the proposed level of infrastructure investment sets Ontario on track for long-term economic growth. Historically, investments into Ontario's public infrastructure have been significantly lower than the growth-maximizing target levels suggested by CANCEA's 2010 econometric analysis. (Econometric models use statistical techniques to study relationships between economic variables, such as between GDP and infrastructure investment, and to produce forecasts.)

CANCEA reported that there was a gap in infrastructure investment in a 2010 report called "Public Infrastructure Underinvestment: The Risk to Canada's Economic Growth"¹. The analysis quantified the associated significant economic risks to workers, business and long-term GDP growth. The investment situation of 2010 put Ontario on a risky slope, whereby small decreases in investment could have a negative impact on future GDP growth.

Subsequent updates to the study (2011, 2014, 2015, 2016 and 2018, all commissioned by the Residential and Civil Construction Alliance of Ontario, or RCCAO) demonstrated persistent underinvestment, effectively pushing Ontario further down the risk slope and away from the level required to maximize long-term GDP growth. While the dollar value of infrastructure investment grew by 11% between 2011 and 2018, investments as a percentage of Ontario's GDP decreased from 3.25% to 2.79% – a 14.2% drop in this key measure. This indicates that infrastructure investment is not keeping pace with economic growth. These levels are well below the 3.5% of GDP anticipated in the 2011 report based on the announcement of Ontario's 10-year "Building Together" plan.

¹<https://www.cancea.ca/cancea/reports/47/public-infrastructure-underinvestment-risk-canadas-economic-growth>



As a result of this continual decrease in investment relative to GDP, the target level – the level at which long-term real GDP growth is maximized, which is determined through econometric modelling – was revised from 5.1% in 2011 to 5.4% based on the 2018 update report (combined Ontario/municipal, plus federal investment in the province).

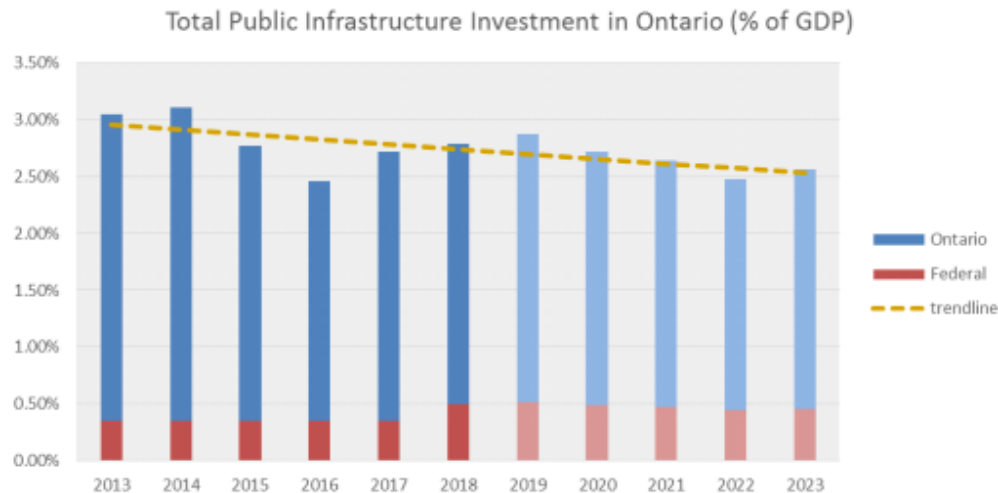
These studies also found the share of infrastructure investments borne by the federal, provincial and municipal governments to be unfairly allocated. The federal government is a significant net beneficiary, receiving a larger share of the benefit from the infrastructure investments made in Ontario than the share it directly invested. In the years since the initial study, we found that the federal government remains significantly underinvested, at 25% of what benefit analysis suggests. This leaves the province in a precarious situation, as any increases in investments relative to provincial GDP would have to be financed using debt, which can pose a structural risk of deficit. However, choosing to reduce the amount invested would cause greater long-term economic risk.

2019 UPDATE: BUDGET INDICATIONS SHOW CONTINUED DOWNWARD TREND

This update uses the recent budget announcements from the federal and provincial governments to track these trends. The combined annual dollar value of infrastructure investments is expected to decrease from 2019 to 2022. This translates into a continued downward trend in the percentage of provincial GDP invested annually (-0.04 percentage points per year, on average), as depicted in Figure 1 below. Given these recent numbers, investments are expected to be near the 10-year low of 2.45% seen in 2016 again by 2022.

This indicates a continuing historical trend of growing economic underinvestment. The expected total investment over the next five years is 2.65% of provincial GDP – less than half the target investment (5.4%) for long-term growth – leaving an investment gap of 2.75% of provincial GDP.

Figure 1 Total Public Infrastructure Investment in Ontario by Year



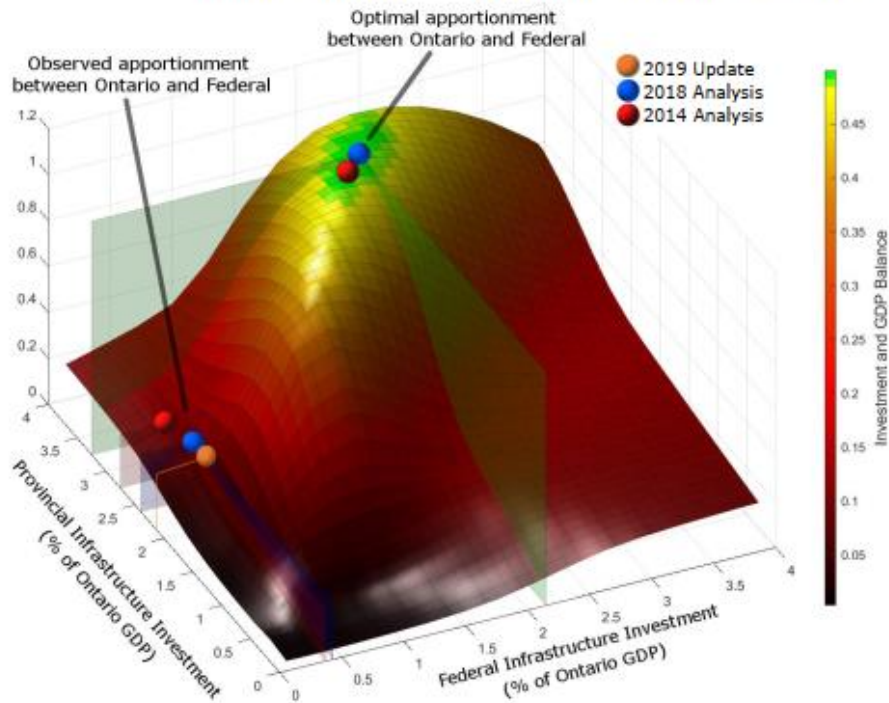
IMPLICATIONS

The combined infrastructure investments in the 2019 budgets represent a further move away from the econometric target levels for long-term growth. The growing investment gap is plotted on Figure 2. The current investment level has shifted further away from the sustainable allocation, as represented by the orange dot in the figure. The shift can be attributed to a decrease in investment relative to GDP from the provincial government, since federal investments as a percentage of GDP have remained relatively constant over time. Nonetheless, the federal government's share has remained significantly and structurally low, at a quarter of what it could be² (see green marker in Figure 2 for target level).

The growing investment gap presents a long-term challenge. As both levels of government continue to underinvest relative to the optimal levels, making up the difference will require an increasingly large investment relative to provincial GDP in the future. Public infrastructure is a long-term investment, and sub-optimal investment decisions made today will continue to have negative economic implications in the years to come.

² <https://www.cancea.ca/cancea/reports/45/ontario-infrastructure-investment-federal-and-provincial-risks-and-rewards>

Figure 2 Comparison of Optimal and Actual Investment Levels, Provincial and Federal



CONCLUSION

Systematic infrastructure underinvestment by the federal, provincial and municipal governments poses significant risk to Ontario's economy. Given the importance of public infrastructure, a continuation of this trend will mean projects that provide fundamental support to Ontario's growing economy will have to be delayed or perhaps cancelled. Ratcheting up the percentage of GDP spent on infrastructure sustainably requires a collaborative effort between all levels of government. To be sustainable, the investment should be apportioned between different tiers of government according to expected future benefit.

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