



Infrastructure Update: Investments in Provinces and Municipalities



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The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report examines infrastructure investments made by provinces and some municipalities with the objective to identify the incremental impact of the federal infrastructure funding on provincial and municipal capital spending since 2016-17.

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Executive Summary

The Investing in Canada Plan (IICP) is the 12-year, \$188 billion, infrastructure investment plan introduced in 2016 by the Government of Canada. The IICP is being delivered in two phases between 2016-17 and 2027-28: Phase 1 for short-term infrastructure needs during the first two years, and Phase 2 starting in 2018-19 for longer-term investments.

Federal infrastructure investments require cost sharing with provincial and local governments. These other levels of governments are therefore key actors of the IICP, especially since they own and maintain the majority of public infrastructure. In this report, we examine capital investments made by provinces and some municipalities with the objective to identify the incremental impact of the IICP on provincial and municipal capital spending.

Our results point to a clear difference between provinces and municipalities with regards to the impact of the IICP on capital investments. It appears the IICP has contributed to increase municipal capital spending, but not provincial capital spending. Our main findings are as follows.

- Provincial capital spending has been below budget since the start of the IICP. Based on PBO's calculations, provincial capital spending was \$3.8 billion lower than what it would have been in the absence of the IICP.
- Provincial capital spending was also \$5.4 billion lower than what it should have been after accounting for additional infrastructure funding delivered through the IICP. This spending gap suggests that funding from the federal government probably displaced provincial investments after the IICP began. Another possibility is that provincial governments postponed or cancelled capital investments after the start of the IICP.
- Had provincial governments kept capital investments in line with PBO's post-IICP benchmark, real GDP could have grown between 0.15% and 0.16% in 2016-17, while employment level could have increased in the range of 7,550 to 8,100 jobs.
- In contrast to provinces, capital investment was higher than budgeted in the municipalities selected for review. In 2017 and 2018, actual municipal spending on capital was \$1.0 billion higher than what it would have been in the absence of the IICP (Figure 3-1).
- Some municipalities (Toronto, Montreal and Calgary) have been able to leverage funding they received from other levels of government, as evidenced by the increase in their average spending per dollar of government contribution (+\$2.1 between 2015 and 2017). In contrast, all provinces have reduced their own spending relative to federal contribution after the start of the IICP.

1. Introduction

In Budget 2016, the Government of Canada announced the introduction of the Investing in Canada Plan (IICP) with the objective of creating long-term economic growth, supporting a low-carbon, green economy, and building inclusive communities.¹

The IICP is being delivered in two distinct phases between 2016-17 and 2027-28: Phase 1 for short-term infrastructure needs during the first two years, and Phase 2 starting in 2018-19 for longer-term investments. In addition to an existing envelope of \$92.2 billion until 2027-28, the IICP provided another \$95.6 billion in new funding, bringing the total to \$187.8 billion for the 2016-17 to 2027-28 period.

Federal infrastructure investments require cost sharing with provincial and local governments. These levels of government are therefore key actors of the IICP, especially since they own and maintain the majority of public infrastructure.² The Parliamentary Budget Office (PBO) has published several reports to provide parliamentarians with an update on the advancement of the IICP and estimate the economic impact of Phase 1 infrastructure investments in 2017-18.³ We found that federal spending on infrastructure was behind schedule, partly due to implementation delays by provincial and municipal governments.

In this report, we examine capital investments made by provinces and some municipalities with the objective of identifying the incremental effect of the IICP on provincial and municipal capital spending.⁴ Our hypothesis is that the introduction of the IICP should result in higher capital spending, relative to a benchmark reflecting capital investment plans established prior to the announcement of the IICP (pre-IICP benchmark).

We reached out to Infrastructure Canada regarding the availability of a such a benchmark for provinces and municipalities and we were informed those data do not exist at their level. As it stands, the federal government does not have a framework to identify the incremental effect of the IICP on capital spending from lower levels of governments. PBO has therefore established its benchmark using information contained in provincial and municipal capital plans. The results of our analysis are presented in the following pages.

2. Investments by provinces

Since the introduction of the IICP, provinces have spent \$85 billion in capital over 2016-17 and 2017-18 (Table 2-1).^{5,6} This investment included \$5.9 billion in infrastructure-related transfers from the federal government identified over the same period.⁷

Table 2-1 Provincial capital spending has increased since 2015-16
millions

| | 2015-16 | 2016-17 | 2017-18 | 2016-18 Total |
|-----------------------------|-----------------|-----------------|-----------------|----------------------|
| Total capital spending | \$38,835 | \$38,978 | \$46,135 | \$85,113 |
| Federal transfers | \$2,048 | \$2,608 | \$3,313 | \$5,921 |
| Net capital spending | \$36,787 | \$36,370 | \$42,822 | \$79,192 |

Source: Parliamentary Budget Officer, Public Accounts of Canada, provincial Public Accounts and Quebec Infrastructure Plan.

Notes: Net capital spending is the difference between capital spending and federal transfers.

Around 87% of total capital investments realized since the start of the IICP is attributable to just four provinces, namely Ontario, Quebec, Alberta and British Columbia, which invested \$74 billion in capital programs in 2016-17 and 2017-18.

Overall, net provincial capital spending has grown in 2017-18, increasing by \$6.0 billion relative to 2015-16 (Table 2-2). This was largely due to higher capital spending in Alberta, Ontario and Quebec. In comparison, federal transfers to provinces for infrastructure grew \$1.3 billion over the same period. This represented a total increase of \$7.3 billion in total provincial capital spending since the IICP was introduced.

As the data show, provincial spending on capital has increased since the start of the IICP. However, this increase does not necessarily represent the incremental impact of the IICP on provincial capital spending. For instance, it is possible that provinces had set out to increase their capital spending regardless of the additional funding. Not accounting for such a possibility could lead us to overestimate the effect of the IICP on provincial spending. It is therefore important to compare changes in provincial capital spending to a benchmark that reflects planned capital spending prior to the IICP.

Table 2-2 Provincial capital spending in 2017-18
millions

| | Net Provincial Spending | | Federal transfers | |
|---------------------------|-------------------------|----------------------|-------------------|----------------------|
| | 2017-18 | Change since 2015-16 | 2017-18 | Change since 2015-16 |
| Alberta | \$8,544 | \$2,272 | \$472 | \$186 |
| British Columbia | \$6,034 | \$399 | \$603 | \$237 |
| Manitoba | \$982 | -\$642 | \$141 | \$63 |
| New Brunswick | \$496 | -\$25 | \$146 | \$81 |
| Newfoundland and Labrador | \$1,361 | \$339 | \$129 | \$50 |
| Nova Scotia | \$490 | \$109 | \$181 | \$96 |
| Ontario | \$14,612 | \$2,193 | \$788 | \$407 |
| Prince Edward Island | \$68 | -\$4 | \$45 | \$27 |
| Quebec | \$8,958 | \$1,367 | \$615 | \$5 |
| Saskatchewan | \$1,277 | \$27 | \$193 | \$113 |
| All Provinces | \$42,822 | \$6,035 | \$3,313 | \$1,265 |

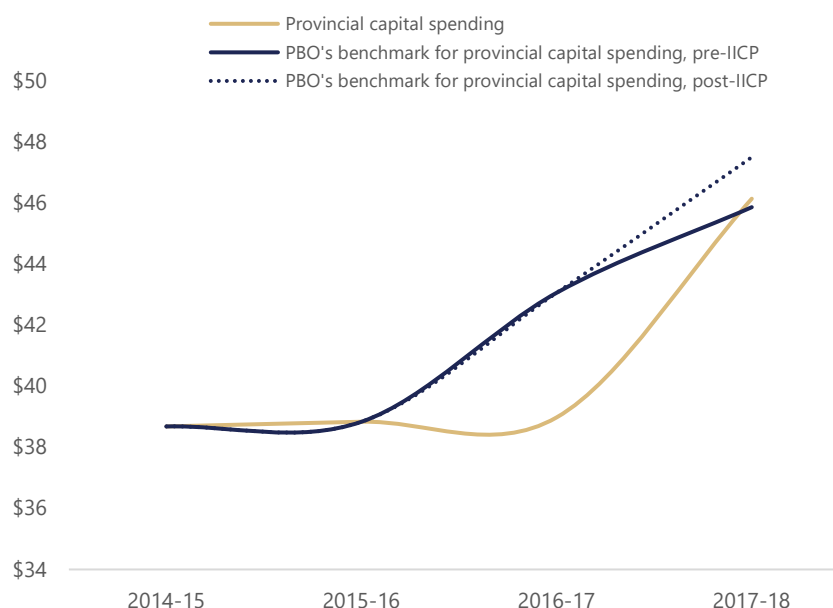
Source: Parliamentary Budget Officer, Public Accounts of Canada, provincial Public Accounts and Quebec Infrastructure Plan.

Notes: A positive (negative) figure represent an increase (decrease) in capital spending. Net capital spending is the difference between capital spending and federal transfers.

To assess incrementality, the PBO has established a benchmark for provincial capital spending that accounts for both investment plans prior to the IICP, and historical lapses (with respect to planned spending). Appendix A provides details on how we constructed this benchmark.

As shown in Figure 2-1, the level of provincial capital spending was \$4.1 billion lower than the PBO's benchmark in 2016-17. It is therefore possible that provincial governments postponed or cancelled capital spending after the introduction of the IICP. Another possibility is that they chose to allocate funding initially destined to capital projects to other areas. This suggests that the additional infrastructure funding from the federal government probably displaced provincial investments on capital immediately after the start of the IICP.

Figure 2-1 Provincial spending on capital lower than the PBO's benchmark
billions



Sources: Parliamentary Budget Officer, provincial budgets and Public Accounts.

Note: The PBO's benchmark for provincial capital spending, post-IICP is presented for illustrative purposes only. The assessment of the effect of the IICP on provincial capital spending is performed by comparing actual spending to the PBO's benchmark pre-IICP.

In 2017-18, provincial spending on capital caught up with the PBO's pre-IICP benchmark. However, on a cumulative basis, provincial spending on capital was \$3.8 billion lower than the PBO's pre-IICP benchmark in 2016-17 and 2017-18. The spending gap is even more significant (-\$5.4 billion) when comparing actual spending to the PBO's post-IICP benchmark (which reflects updated capital spending plans following the introduction of the IICP; see Appendix A for details).

This finding is not surprising given that provinces have spent less than budgeted since the start of the IICP. For instance, according to their 2016-17 and 2017-18 budgets, provinces were planning to spend \$100.6 billion in capital. Instead, they invested \$85.1 billion, which is \$15.5 billion lower than their initial plans. This was largely due to underspending in Ontario, Quebec, British Columbia and Alberta (Table 2-3).

Table 2-3 Provinces invested less in capital than initially planned in 2016-17 and 2017-18 (actuals compared to budgets)
millions

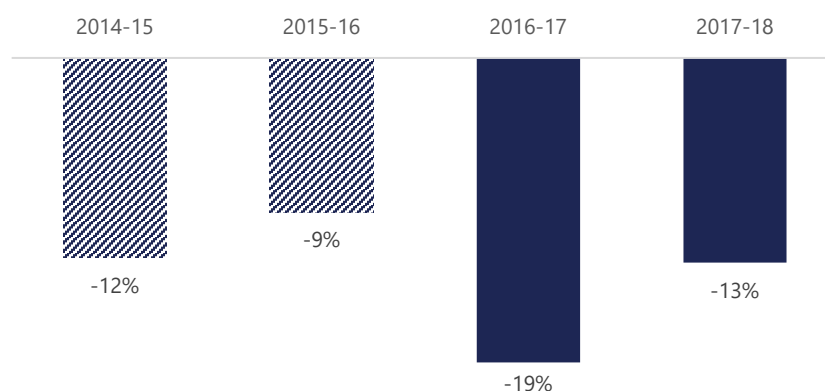
| | |
|---------------------------|------------------|
| Alberta | -\$2,062 |
| British Columbia | -\$2,421 |
| Manitoba | -\$544 |
| New Brunswick | \$45 |
| Newfoundland and Labrador | -\$7 |
| Nova Scotia | -\$109 |
| Ontario | -\$8,200 |
| Prince Edward Island | \$18 |
| Quebec | -\$2,119 |
| Saskatchewan | -\$117 |
| All Provinces | -\$15,515 |

Source: Parliamentary Budget Officer, provincial budgets, provincial Public Accounts and provincial capital plans.

Note: A negative (positive) number indicates spending below (above) budget.

Spending lapses are not unusual when it comes to capital programs. However, it seems that they have been more pronounced than in the past (Figure 2-2). This parameter has been factored into the PBO's benchmark as well.

Figure 2-2 Spending lapses are more pronounced than in the past



Sources: Parliamentary Budget Officer, provincial budgets and Public Accounts.

The combination of underspending (actual spending lower than planned spending) and higher federal transfers have resulted in a reduced provincial contribution to capital spending since the start of the IICP. On average, for each dollar of federal contribution received in 2017-18, provinces spent \$6 on capital, down from \$12 in 2015-16.⁸

3. Investments by municipalities

As mentioned in the introduction of this report, local governments own and maintain a large portion of Canada's public infrastructure. It is therefore important to examine how the additional funding from the IICP has affected their capital spending plans.

Population size being a major driver of infrastructure spending, it is likely that large municipalities will be at the heart of significant capital investments. Therefore, we selected five of the most populous Canadian municipalities, namely the cities of Toronto, Montreal, Calgary, Ottawa and Edmonton, for which financial data is generally publicly available.

The five municipalities selected have spent close to \$9.0 billion in capital in 2017 (Table 3-1),⁹ which represents an increase of \$1.9 billion relative to 2015, a year prior to the start of the IICP.

Table 3-1 Municipal spending on capital has increased since 2015
millions

| | 2015 | 2016 | 2017 |
|--|----------------|----------------|----------------|
| Toronto | \$2,885 | \$2,588 | \$3,043 |
| Montreal | \$1,798 | \$1,851 | \$2,523 |
| Calgary | \$1,051 | \$1,416 | \$1,344 |
| Ottawa * | \$745 | \$911 | \$974 |
| Edmonton | \$988 | \$1,114 | \$1,138 |
| Total capital spending | \$7,467 | \$7,879 | \$9,023 |
| Government transfers (provincial and federal) | \$2,495 | \$2,245 | \$2,626 |
| Net capital spending * | \$4,972 | \$5,634 | \$6,398 |

Sources: Parliamentary Budget Officer, municipal annual reports.

Note: Capital spending is approximated by the acquisition of tangible capital assets. Net capital spending is the difference between capital spending and government transfers.

* Financial information in Table 3-1 for Ottawa was reported incorrectly for 2016 and 2017 (the values were reversed). The error does not materially affect the results. This table was corrected on March 20, 2019.

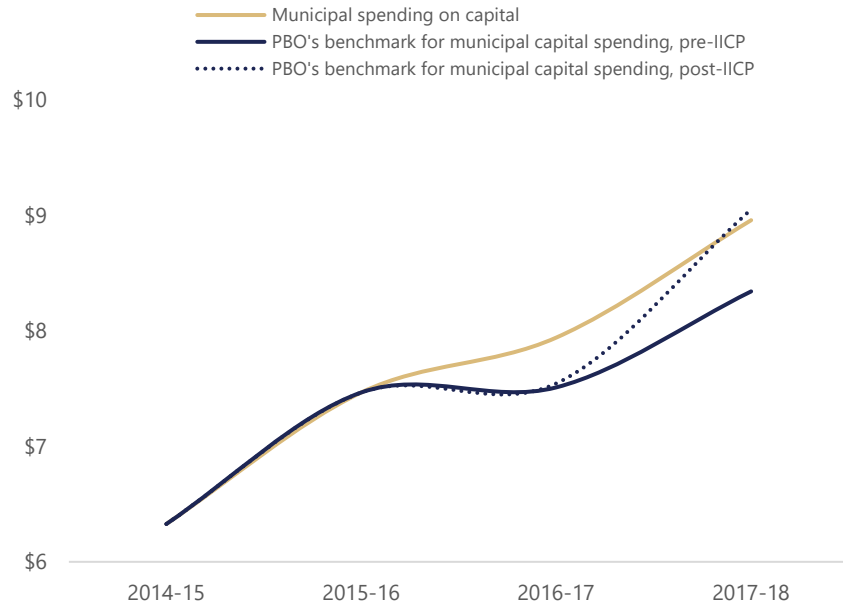
The level of municipal capital investment following the start of the IICP was higher than expected by the PBO. As shown in Figure 3-1, it exceeded PBO's pre-IICP benchmark for municipal capital investment by \$368 million in 2016-17 and \$680 million in 2017-18. This translates into a cumulative impact of

\$1.0 billion since the start of the IICP. Actual municipal spending was also very close to the PBO's post-IICP benchmark.

Figure 3-1

Municipal spending on capital has exceeded PBO's benchmark

billions



Sources: Parliamentary Budget Officer, municipal annual reports.

Note: The PBO's post-IICP benchmark for municipal capital spending is presented for illustrative purposes only. The assessment of the effect of the IICP on municipal spending is performed by comparing actual spending to the PBO's pre-IICP benchmark.

In contrast to provinces, most of the municipalities selected for review have invested more in capital than they had initially planned (Table 3-2), which is in line with the positive impact of the IICP on their overall capital spending, as noted above. It also indicates that municipalities respected the condition of incremental funding to be eligible for federal funds. Calgary was an exception however, with actual spending falling considerably lower than budgeted.

The data also reveal that most of the municipalities selected were able to leverage the funding they received in 2016 and 2017. That was the case for Toronto, Montreal and Calgary which saw their average spending per dollar of government contribution rise from \$1.8 in 2015 to \$3.9 in 2017.¹⁰

However, the cities of Ottawa and Edmonton did not see an increase in their contribution per dollar of government transfers. This can be explained by the fact that government transfers for these two municipalities have increased faster than net municipal spending between 2015 and 2017.

Table 3-2 Most municipalities spent more on capital than initially planned in 2016 and 2017 (actuals compared to budgets)
millions

| | |
|--------------|--------------|
| Toronto | \$615 |
| Montreal | \$953 |
| Calgary | -\$1,118 |
| Ottawa | \$469 |
| Edmonton | -\$109 |
| Total | \$810 |

Sources: Parliamentary Budget Officer, municipal annual reports.

Note: A negative (positive) number indicates spending below (above) budget. The City of Calgary considerably revised upwards their plans for capital spending in 2017, after recovering from the downturn in 2015 and 2016. This may have led to an overestimation of planned capital spending.

4. Economic impact

As illustrated in Figure 2-1 on page 5, actual provincial capital spending was \$5.4 billion lower in 2016-17 and 2017-18 than what it should have been after accounting for the additional infrastructure funding delivered through the IICP (that is, relative to the PBO's post-IICP benchmark).

One of the objectives of the IICP being to foster economic growth,¹¹ we have therefore estimated the impact of this \$5.4 billion provincial spending gap on the economy in 2016-17 and 2017-18.¹² We have also accounted for the impact of monetary policy in our estimation. Indeed, depending on the economic context, monetary policy may respond to new fiscal measures to prevent the economy from overheating and inflation rising above its target.¹³

When the IICP was introduced in early 2016, Bank of Canada's (the Bank) policy interest rate was close to its effective lower bound, which meant the Bank was unlikely to respond to Budget 2016 measures. The economic context has evolved, and the Bank's policy interest rate has increased since 2016 which could have contributed to reduce the economic impact of fiscal measures such as the IICP. We present our results with and without monetary policy response in Table 4-1.

Table 4-1 Potential economic impact of higher provincial spending

Without monetary policy response

| | 2016-17 | 2017-18 |
|---------------------------------------|---------|---------|
| Change in capital spending (millions) | \$4,078 | \$1,359 |
| Infrastructure multiplier | 0.90 | 1.05 |
| % Difference in Real GDP | 0.16% | 0.08% |
| Employment (persons) | 8,098 | 9,912 |
| FTE Employment (persons) | 12,376 | 13,493 |

With monetary policy response

| | 2016-17 | 2017-18 |
|---------------------------------------|---------|---------|
| Change in capital spending (millions) | \$4,078 | \$1,359 |
| Infrastructure multiplier | 0.80 | 0.79 |
| % Difference in Real GDP | 0.15% | 0.05% |
| Employment (persons) | 7,550 | 7,587 |
| FTE Employment (persons) | 11,508 | 9,988 |

Source: PBO.

Note: GDP is Gross Domestic Product, FTE is Full-Time Equivalent.

The economic impacts are smaller under the assumption of a monetary policy response. Our results indicate that real Gross Domestic Product could have grown between 0.15% to 0.16% in 2016-17, if provincial governments had kept investments levelled with the PBO's post-IIICP benchmark. (Table 4-1). Employment levels could have also increased in the range of 7,550 to 8,098 over the same period.

In section 2, we mentioned that the provincial spending gap could be indicative of a displacement of provincial investments toward other sectors of the economy. If that were the case, the economic impacts presented in Table 4-1 could have been achieved – partly or entirely – insofar as public spending would have still occurred.

The final economic impact would then largely depend on the economic multipliers associated with the sectors that have benefited from the additional funding. A lower multiplier than that estimated for infrastructure would result in a smaller economic impact, and vice versa.

Appendix A: Calculating a benchmark for capital spending

This appendix briefly describes the methodology the PBO used to estimate its capital spending benchmark for provinces and municipalities. The methodology relies on information contained in capital budgets and Public Accounts, which are publicly available.

The PBO estimated two types of benchmarks:

1. A **pre-IICP** benchmark that reflects capital spending plans prior to the announcement of the IICP;
2. A **post-IICP** benchmark that reflects updated capital spending plans following the announcement of the IICP.

Below, we present the steps followed to estimate the PBO's benchmark pre-IICP. We use the same methodology to estimate the post-IICP benchmark, except that planned capital spending pre-IICP in Step 2 have been replaced by planned capital spending post-IICP.

Step 1: Obtain actual spending

We used figures published by the provinces of Alberta, British-Columbia, Ontario and Quebec for actual capital investments. For the remaining provinces that do not provide a figure for actual capital investments, we used the acquisition of tangible capital assets as a proxy. This data can be obtained from the provincial Public Accounts.

Step 2: Determine planned capital spending pre-IICP

Provincial governments generally publish capital spending plans over a one-year period, while local governments do so for multiple years. As such, the methodology used to determine planned capital spending is different for each type of government, depending on the year considered. This is explained in the following table.

| Provinces | | |
|-----------|---|--|
| Years | 2016-17 | 2017-18 |
| Details | <p>Planned capital spending is taken from budgets published in early 2016 for 2016-17.</p> <p>We assume that provinces had no knowledge of the details of the IICP, and therefore had not reflected the additional infrastructure funding in their capital plans for 2016-17.</p> | <p>Planned capital spending is estimated as follows:</p> <p>Planned capital spending (2016-17) x Average annual growth in planned capital spending since 2014-15.</p> <p>Note: A different growth horizon will likely change the estimated spending for 2017-18.</p> |

| Municipalities | | |
|----------------|--|------|
| Years | 2016 | 2017 |
| Details | <p>Planned capital spending is taken from capital budgets published prior to the announcement of the IICP.</p> <p>We only account for information published by municipalities around the end of 2015, or early 2016.</p> | |

Step 3: Calculate completion ratio (actual/planned spending) pre-IICP

Actual spending tends to differ from budgeted spending. To account for this fact in our calculations, we estimate the average ratio of actual/planned spending over a two-year period (2014-15 and 2015-16 for provinces; 2014 and 2015 for municipalities).

Step 4: Estimate benchmark for capital spending pre-IICP

The benchmark pre-IICP is obtained by multiplying the completion ratio for each province/municipality (Step 3) by the planned capital spending (Step 2), for each province, municipality and year of estimation.

Implicitly we assume that the average completion ratio will remain constant in the absence of the IICP. If this assumption no longer holds, the estimated benchmark will change.

Notes

1. Infrastructure Canada. [Investing in Canada — Canada's Long-Term Infrastructure Plan](#). April 2018 (accessed January 28, 2019).
2. [2016 Canadian Infrastructure Report Card](#). 2016 (accessed February 15, 2019).

Standing Senate Committee on National Finance. [Smarter Planning, Smarter Spending: Achieving infrastructure success](#). February 2017 (accessed February 15, 2019).
3. Office of the Parliamentary Budget Officer:

[Canada's New Infrastructure Plan: 1st Report to Parliament – Following the money](#). February 2, 2017 (accessed January 28, 2019).

[Budget 2018: Issues for Parliamentarians](#). March 15, 2018 (accessed January 28, 2019).

[Status Report on Phase 1 of the New Infrastructure Plan](#). March 29, 2018 (accessed January 28, 2019).

[Status Report on Phase 1 of the New Infrastructure Plan](#). August 22, 2018 (accessed January 28, 2019).
4. Infrastructure Canada has indicated that the federal government has moved away from its initial incrementality requirement that funding was to be allocated to projects that would not have been undertaken without federal funding. Going forward, the focus will be to ensure funding received from the federal government does not replace or displace existing sources of funding.
5. For provincial and local governments, infrastructure investment is included in capital spending, along with other capital acquisitions such as motor vehicles.
6. We used actual figures for capital investments provided by the provinces of Alberta, British-Columbia, Ontario and Quebec. For the remaining provinces that do not provide actual capital investments, we used the acquisition of tangible capital assets as a proxy.
7. The federal transfer payments considered for provinces are the following: Gas Tax Fund, Building Canada Fund, New Building Canada Fund, Clean Water and Wastewater Fund, Green Infrastructure Fund, Public Transit Infrastructure Fund, Provincial-Territorial Infrastructure Base Funding Program, Post-Secondary Institutions Strategic Investment Fund, Early Learning and Child Care Framework, Gateways and Border Crossings Funds, Asia-Pacific Gateway and Corridor Transportation Infrastructure Fund, Canada Cultural Spaces Fund.
8. Federal cash transfers are compared to provincial investments on capital reported in the Statement of Cash Flows.

9. Actual municipal capital spending is approximated by the acquisition of tangible capital assets.
10. Government transfers (federal and provincial) are compared to municipal investments on capital reported in the Statement of Cash Flows.
11. See Note 1.
12. The PBO has not estimated the economic impact of municipal spending considering our analysis was only conducted on a small sample of municipalities.
13. See Note 3. [Status Report on Phase 1 of the New Infrastructure Plan](#). August 22, 2018 (accessed January 28, 2019).