



BRIEFING MARCH 2014

# Manitoba's Infrastructure Investment.

## At a Glance

- ◆ The Conference Board analysis of the Manitoba government's five-year, \$5.5 billion core infrastructure plan indicates that it will:
  - lift overall real GDP by \$6.3 billion, or 2 per cent, over 2014–18;
  - create a total of 58,900 person-years of employment;
  - generate \$1.4 billion in retail sales and add over 2,000 housing units to the economy;
  - add \$1,100 annually to the average real income of working-age Manitobans over the next five years;
  - boost exports by \$5.4 billion over 2014–18.

## EXECUTIVE SUMMARY

In 2013, the Manitoba government committed to investing the equivalent of the 1 percentage point provincial sales tax (PST) increase in core infrastructure, beyond existing levels of provincial infrastructure spending. Combined, the additional PST revenue and the previously committed infrastructure investment will total \$5.1 billion over the next five years. An additional \$420 million will bring the Manitoba government's total core infrastructure investment to \$5.5 billion over 2014–18.

A core infrastructure spending plan is an important stimulus to the provincial economy, generating employment and household and business incomes. In addition, infrastructure, and infrastructure renewal

projects boost productivity over the long term. The Conference Board of Canada analysis of the Manitoba government's five-year plan indicates that it will lift overall real GDP by \$6.3 billion, or 2 per cent, over 2014–18 and create a total of 58,900 person-years of employment. The core infrastructure investment will add \$1,100 annually to the average real income of working-age Manitobans over the next five years, generate \$1.4 billion in retail sales, and add over 2,000 housing units to the economy. It will also boost exports by \$5.4 billion over 2014–18.

## INTRODUCTION

In the 2013 Speech from the Throne, the Government of Manitoba committed to invest the equivalent of the 1 percentage point provincial sales tax (PST) increase in core infrastructure, over and above existing levels of provincial infrastructure investment. The increase to the PST is expected to generate about \$1.5 billion in new provincial revenue over the next five years. The pre-PST increase core infrastructure investment, which was \$729 million in 2012–13, would total roughly \$3.6 billion over the same five years. Together, those two figures would total about \$5.1 billion in investment over that time period. However, the Government of Manitoba is launching a five-year, \$5.5-billion core infrastructure-building plan this year—approximately \$420 million more than the PST commitment and the pre-PST increase core infrastructure investment combined.

For the purposes of this briefing, “core infrastructure” includes the transportation network (highways, bridges, and related construction); flood protection and water management (dikes, drainage, and diversion channels); and municipal infrastructure (including roads and water systems).

The purpose of this briefing is to inform policy-makers about the economic impact that the \$5.5 billion in core infrastructure investment will have on Manitoba's economy by quantifying the widespread impact of the investment on real GDP, employment, income, and other key economic indicators.

## KEY ASSUMPTIONS AND METHODOLOGY

The Government of Manitoba has committed to spend a total of \$5.5 billion over five years on core infrastructure projects, starting in the 2014–15 fiscal year. (See Table 1.) According to the investment profile, the province will spend \$3.7 billion over five years on highways, bridges, and critical transportation infrastructure, and over \$300 million on flood protection and water quality projects. Municipal infrastructure investment will average over \$300 million a year for five years, for a total of \$1.5 billion.

The value of this investment has been split into investment in structures and investment in capital equipment (such as new trucks and earth-moving machinery), based on average historical shares.<sup>1</sup> Moreover, the investment stream has been converted to a calendar-year basis and to constant (inflation-adjusted) dollars to better capture the impact on real economic indicators.

The Conference Board's macroeconomic model of Manitoba's economy was used to quantify the impact of real infrastructure investment over the 2014 to 2018 period. The analysis evaluates the combined direct, indirect, and induced economic impacts, defined as follows:

- ◆ **Direct impact** measures the value-added<sup>2</sup> to the economy from the increased infrastructure spending on those firms that would either build structures or manufacture equipment. Because demand for equipment has high import content, the direct effect on Manitoba's economy from capital equipment investment is muted.
- ◆ **Indirect impact** measures the value-added from supply chain effects—as demand for intermediate inputs or other support services is lifted. Increased demand for construction and machinery will bolster activity in transportation, financial, insurance, and other services.

1 Based on data from Statistics Canada, the historical averages in Manitoba for the proportions of investment in structures and investment in capital equipment are 74 per cent and 26 per cent, respectively.

2 Value-added, or net output, is the difference between total revenue and the sum of expenses on parts, materials, and services used in the production process. Summing the value-added across all industries in a region will yield the GDP for that region.

**Table 1**  
Manitoba's Core Infrastructure Spending Plan  
(\$ million)

	Baseline		Core infrastructure: Five-year plan				Five year total
	2012–13 Actual	2014–15 Budget	2015–16 Planned	2016–17 Planned	2017–18 Planned	2018–19 Planned	
Roads, highways, and bridges	478	707	746	755	762	771	3,741
Flood protection and water quality	21	42	49	54	68	107	320
Municipal infrastructure	230	277	288	299	315	327	1,506
Planned investment	729	1,026	1,083	1,108	1,145	1,205	5,567
<b>PST Reconciliation</b>							
One point of PST		276	288	300	313	325	1,502
2012–13 Baseline investment		729	729	729	729	729	3,645
Minimum investment commitment		1,005	1,017	1,029	1,042	1,054	5,147
Investment over/(under)							
PST commitment		21	66	79	103	151	420

Note: Figures are for fiscal years.  
Source: Government of Manitoba.

- ◆ **Induced impacts** are derived when employees of the aforementioned industries spend their earnings and owners spend their profits. These purchases lead to more employment, wages, income, and tax revenues, and can be felt across a wide range of industries.

Thus, increased production in specific industries will not only have direct impacts on the economy but will also have a series of multiplier effects. Direct suppliers are the first industries to feel indirect effects, in the form of increased demand. Induced impacts have wide-spread (albeit usually smaller) effects on all sectors of the economy, largely through a general increase in consumer spending. The overall economic multiplier is calculated as the sum of all value-added impacts (direct, indirect, and induced) divided by the initial constant-dollar spending generated by the core infrastructure program.

The initial constant-dollar value of the capital investment in infrastructure does not necessarily result in a one-to-one increase in real GDP. This is so because a portion of the investment is assumed to go toward the purchase of capital equipment, much of which is typically

imported. Moreover, even as demand for capital equipment produced in Manitoba rises, intermediate inputs from suppliers beyond provincial boundaries may be needed to meet it. This supply chain effect on imported components will dampen the impact of the overall multiplier. However, Manitoba stands to reap the economic benefit of increased productivity resulting from this investment over the long run. Most of the government's core infrastructure investment is being focused on key strategic infrastructure such as CentrePort, key trade routes, and flood protection. This will improve productivity and deliver an additional boost to the economy over and above the economic impact of the actual construction phase. This additional economic impact is worthy of further investigation.

The Conference Board's provincial forecasting model captures the sum of the direct, indirect, and induced impacts on Manitoba's economy, based on its estimated historical relationships. The model incorporates a detailed modelling of prices, households, and businesses, and provides economic impact results for a wide range of economic indicators.

Some key points and assumptions about the methodology are worth mentioning. The Conference Board converted the investment data to a calendar-year basis and to constant dollars. The constant-dollar investment spending totals \$5.4 billion in 2014 prices, with spending allotted over the 2014 to 2018 period on a calendar-year basis. This compares with a current-dollar investment of \$5.5 billion over the same period.

The Conference Board's regional forecasting model accounts for government revenues (including direct taxes, indirect taxes, and corporation taxes). In addition, government accounts in the Conference Board's national and regional models are based on national accounts data and not on the public accounts. In principle, one can assume that the impacts of the simulation on a national account basis and a public account basis would be similar.

## FINDINGS

Table 2 summarizes the findings of the economic impact analysis on a number of key economic indicators for Manitoba. After adjusting for inflation, Manitoba's core infrastructure spending program will invest a little over \$1.1 billion a year from 2014 to 2018. Total real-dollar investment is estimated at \$5.4 billion. Most of the investment will be spent on construction materials, roads, bridges, dikes, and water treatment facilities. In addition, investment will go toward wages and salaries in the province. Only about a quarter of the investment will be spent on capital equipment, much of which is usually imported.

Based on the Conference Board's provincial model simulations, the \$5.4-billion investment will boost Manitoba's real GDP by an average of \$1.25 billion a year from 2014 to 2018. The cumulative impact represents \$6.3 billion or a 2 per cent lift to real GDP over the period. As such, combining direct, indirect, and induced effects, the overall economic multiplier is 1.16 during the construction phase. This simply means that for each dollar of real capital investment spent on the core infrastructure program, real GDP is lifted by \$1.16. Manitoba will also benefit from

additional economic growth resulting from increased productivity related to this investment. Further studies will be required to assess the additional impact resulting from productivity gains, since the literature suggests a positive link between private sector productivity gains and increased public infrastructure spending.

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**We estimate that new investment in the core infrastructure program will add roughly \$6.3 billion to real GDP and create nearly 58,900 person-years of employment over the next five years.**

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The Conference Board's economic model of Manitoba's economy contains an intricate modelling of labour markets. When demand for labour increases, as is the result in this analysis, it does not result in a one-for-one decrease in the number of unemployed people. In fact, the model captures a number of other effects that mitigate the impact on the unemployed. For example, labour is regionally mobile, so net interprovincial migration into the province will increase as the new infrastructure projects increase demand for workers in Manitoba. Moreover, as job prospects improve, more people naturally enter the workforce. The increase in participation rates can occur among all age groups but is typical of people in younger cohorts, who often opt to work, rather than remain in school, when employment prospects become more favourable. Thus, the simulation results suggest that, although the infrastructure investment will increase total employment by roughly 58,900 person-years of employment over the five-year period, the number of unemployed persons will drop by roughly 23,750. (See Table 2.) This gap will occur because the labour force will increase by 35,100 over the period, as more people decide to enter or re-enter the workforce and as net interprovincial migration increases. Since the boost to employment will be stronger than the boost to the labour force, Manitoba's unemployment rate will improve by an average of 0.7 percentage points over the period. The increase in labour demand will boost average weekly earnings by an average of 0.3 percentage points and subsequently improve personal household incomes by

**Table 2**  
Impact of Manitoba's Infrastructure Spending on Key Economic Indicators  
(level difference shock minus control, except where otherwise indicated)

<b>Investment</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2014–18 Total</b>
Total investment generated (current \$ millions)	769.3	1,068.7	1,198.7	1,235.7	1,294.7	5,567.1
Total investment generated (2014 \$ millions)	769.3	1,055.2	1,166.3	1,189.3	1,233.0	5,413.2
<b>Effects</b>						
Real GDP at basic prices (2014 \$ millions)	917.5	1,358.5	1,359.2	1,317.6	1,333.4	6,286.2
GDP deflator (percentage difference)	0.0	0.1	0.2	0.2	0.2	
GDP at market prices (current \$ millions)	983.2	1,521.0	1,631.6	1,628.2	1,669.7	7,433.7
Consumer price index (percentage difference)	0.1	0.1	0.1	0.1	0.1	
Average weekly wages, industrial composite (percentage difference)	0.2	0.5	0.4	0.2	0.2	
Personal income (current \$ millions)	517.4	794.9	839.8	849.1	875.1	3,876.3
Personal disposable income (current \$ millions)	406.4	619.7	651.7	657.7	678.3	3,013.8
Population of labour-force age (000s)	2.1	1.8	0.8	0.3	0.5	5.5
Labour force (000s)	5.1	6.7	7.5	8.0	7.9	35.1
Employment (000s)	8.5	11.1	12.5	13.4	13.4	58.9
Unemployment rate (level difference in rate)	-0.5	-0.7	-0.8	-0.8	-0.8	
Retail sales (current \$ millions)	178.6	283.6	306.3	307.4	308.9	1,384.9
Housing starts (000s)	0.4	0.3	0.3	0.4	0.6	2.1
Total indirect taxes (current \$ millions)	84.3	130.6	139.9	137.3	141.1	633.2
Federal personal income tax collected (current \$ millions)	44.3	69.2	73.2	73.9	76.1	336.8
Provincial personal income tax collected (current \$ millions)	34.4	54.0	57.1	57.6	59.3	262.4
Corporate profits (current \$ millions)	130.6	209.7	225.4	190.4	195.2	951.4

Note: Figures are for calendar years.

Source: The Conference Board of Canada; Statistics Canada.

\$3.9 billion over five years. On average, this represents an annual \$1,100 increase in the real income (in 2014 constant dollars) of working-age Manitobans during the core infrastructure-building period.

Higher labour income and corporate profits will boost both federal and provincial government revenues. In current-dollar terms, the core infrastructure investment will allow the federal and provincial governments to cumulatively generate \$1.2 billion in federal and provincial personal income taxes and indirect taxes. In addition, corporate income taxes will generate cumulative totals of \$24 million and \$70 million for

the provincial and federal governments, respectively. The federal government will also benefit from reduced employment insurance (EI) payments and an increase in EI revenues due to the increase in employment and subsequent reduction in unemployment. Overall, the EI balance will improve by a cumulative total of \$59 million over the period.

Table 3 details the nominal GDP impact on an expenditure basis. The direct impact of the increase in capital investment is first captured under gross fixed capital formation (government spending on structures and

**Table 3**

Impact of Manitoba's Infrastructure Spending on GDP Expenditures at Market Prices  
(level difference shock minus control, except where otherwise indicated; \$ millions)

	2014	2015	2016	2017	2018	2014–18 Total
Consumer expenditures	400	620	663	650	668	3,002
Government spending on goods and services	22	23	24	26	27	123
Gross fixed capital formation	844	1,166	1,314	1,371	1,433	6,128
Government non-residential investment	571	793	890	917	961	4,133
Residential construction	60	83	96	106	109	454
Non-residential construction	14	17	19	22	23	96
Machinery and equipment	199	272	308	326	340	1,445
Final domestic demand	1,267	1,809	2,001	2,048	2,128	9,253
Exports	565	960	1,121	1,340	1,389	5,375
Imports	852	1,252	1,495	1,764	1,853	7,217
Net exports	-287	-292	-374	-425	-464	-1,842
GDP	983	1,521	1,632	1,628	1,670	7,434

Note: Figures are for calendar years.

Source: The Conference Board of Canada; Statistics Canada.

capital equipment). However, the economic impact data in Table 3 also incorporate the indirect and induced economic impacts resulting from the simulation.

Partly reflecting the increase in employment, relative to the baseline, consumer spending in Manitoba will increase by \$3 billion over five years. Increased production in Manitoba will boost exports by \$5.4 billion over five years. However, because many consumer products and a great deal of capital equipment come from outside Manitoba, imports will rise, thereby dampening the overall impact on GDP and eroding the trade balance.

## CONCLUSION

The simulation results from our economic model of Manitoba suggest that for each (inflation-adjusted) dollar of direct investment by the government in the core infrastructure program, real GDP will rise by \$1.16.

Over the 2014 to 2018 calendar years, we estimate that new investment in the core infrastructure program will add roughly \$6.3 billion to real GDP and create nearly 58,900 person-years of employment. The effect of the investment on economic activity will grow over time, as the influx of the new capital investment boosts the economy through supply-chain effects. Increased economic activity will boost labour income and corporate profits, important sources of revenue for federal and provincial governments. Over the five-year period examined, federal and provincial governments will benefit from a cumulative \$1.2-billion increase in personal income taxes and indirect taxes. Corporate income taxes will cumulatively add another \$94 million to these levels of government, while the federal government's EI balance will improve by \$59 million.

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