UNLEASHING PRODUCTIVITY THROUGH INFRASTRUCTURE

ADVISORY COUNCIL ON ECONOMIC GROWTH

Introduction

For Canada, the opportunity to invest in infrastructure has never been greater.

Few countries on earth can claim greater reliance on infrastructure for their prosperity than Canada. Canadians live in a massive, northern territory that stretches some 7,000 kilometers from coast to coast. As a trading economy of natural resources, energy, foodstuffs, and globally recognized high-value services and products, Canada has come to depend increasingly on infrastructure to connect us to the world and to one another.

The role that infrastructure plays in the daily life of Canadian families is simply immense. Commuting to school and to work every day, drinking clean water, eating fresh food, breathing clean air, having access to affordable energy and telecommunications, and having the ability to travel near and far to seek opportunities in education, employment or entrepreneurship—all of these depend to a substantial degree on the quality of Canada's infrastructure services.

It is imperative for Canada to deliver infrastructure that meets the country's growing needs. Used appropriately, infrastructure can be one of the most powerful levers at the government's disposal for both long term productivity improvement and near term stimulus. In order to fully harness this potential, however, Canada should leverage the trillions in institutional capital waiting on the sidelines and focus this investment productively. We believe that this can be accomplished through three specific initiatives.

1. Develop a focused federal infrastructure strategy that is in line with the government's economic growth agenda

2. Create a Canadian Infrastructure Development Bank (CIDB) to leverage institutional capital and deliver over $200 billion worth of projects over 10 years

3. Create a flywheel for reinvestment by catalyzing the participation of institutional capital in existing assets

The following memorandum lays out the rationale for a further increase in infrastructure investment, and details the three recommendations that we believe will unlock the full potential of this investment.

Canada's infrastructure imperative

Several forces are coming together to produce a moment when investment in infrastructure has become both an imperative investment need, and an opportunity to create the short and long term productivity stimulus that Canada will need in the coming decade.

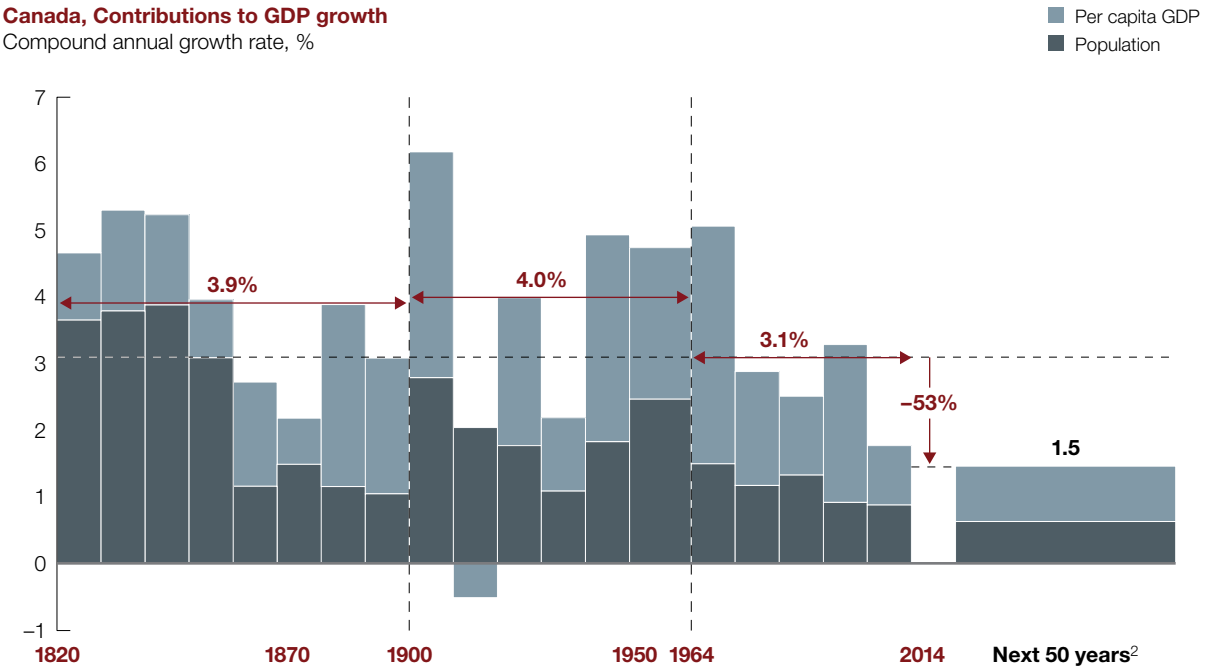
Canada needs productivity-enhancing infrastructure

Canada faces significant economic headwinds in the medium- to long-term, including a significant decline in per capita GDP growth (see Exhibit 1). Historically, Canada's GDP growth has been propelled by the growth of its labour force. To reverse the negative implications of an aging population, Canada will need to invest in productivity. Infrastructure is at the foundation of the Council's vision for a brighter Canada – one that is globally

connected, home to a resilient workforce and numerous global champions, a magnet for talent and capital, and a leader in innovative governance models that mobilize Canada's best capabilities.

Infrastructure investment is among the most powerful and scalable levers of economic growth, with both a long and short term impact. Over the longer term, infrastructure drives economic productivity year after year to the tune of 20 to 50 cents on every original dollar invested.[1] The better the project selection and design upfront,

Exhibit 1 **Without productivity-focused stimulus, Canada will face a very low level of growth over the long-term.**[4]



the better the economic dividend for Canadian tax dollars, the greater the environmental sustainability, and the better the prospects for economic growth. Productive infrastructure thus translates into competitiveness for the many industries that depend on it. Canada's agrifood, resources, and energy sectors, for example, all underwent positive transformations over the past decade, but our comparative advantages there are all too often curtailed by inadequate capacity in transportation infrastructure.

In the short-term, infrastructure investments translate into additional economic demand. For every dollar invested, it is estimated that the economy grows by a dollar and sixty cents (1.6 times multiplier) in the first year. Jobs are created in each phase of project delivery. For every million dollar invested, approximately 15

jobs are created.[2] Skilled and semi-skilled construction workers are hired, cement and steel manufacturers fill orders, architecture and engineering firms are in demand – all of these, and many more, spend money in the economy.

We also note that Canada is home to some of the OECD's most congested cities. No fewer than 4 of the top 10 most congested cities in North America are Canadian (Vancouver, Toronto, Montreal and Halifax). Congestion not affects the cost and quality of life of everyday Canadians, but it also affects the competitiveness of Canada's export-oriented sectors. In quantified terms, studies show that congestion leads to costs in the vicinity of 0.8% of GDP in a developed country like Canada.[3]

Positive developments requiring major infrastructure investments are also at play for Canada. For instance, Canada may soon have one of the world's highest share of preferential access to global markets should the Comprehensive Economic Trade Agreement (CETA) with the EU be ratified. Canada is also moving towards closer trade relationships with Asian partners. Combined with other factors, this leads us to believe that Canada has a truly historic opportunity to become the world's preferred North American trade hub, not just in the trade of goods, but also in the trade of services where Canada is already punching above its weight. However, this particular ambition will require multi-modal transportation infrastructure investment and reform on a scale detailed by the Canada Transportation Act Review, and in a manner enabled by the new funding and governance mechanisms outlined in this memorandum.

In short, no other area of federal government investment can compare with infrastructure in terms of reach, effectiveness and scale.

There is an infrastructure gap in need of bridging

The exact magnitude of Canada's infrastructure gap is difficult to estimate for a number of reasons. First, there is no nationwide source of reliable data on the current state of the country's infrastructure. Second, top down GDP-driven estimates that compare national infrastructure investments to GDP are imperfect substitutes for bottom up needs assessments made at the local level. Finally, these estimates do not take into account the potential for large scale nation-building projects for governments seeking to make step change improvements in growth and productivity.

Despite these limitations, many estimates do exist. The gap in First Nations infrastructure alone is estimated to be $25 to $30 billion;[5] a large deficit considering that First Nations account for 4.3 percent of the Canadian population.[6] For the rest of Canada, estimates of the gap vary widely. These range from as "low" as $150 billion to as high as $1 trillion.[7] The facts indicate that even though Canada has significantly invested in its infrastructure over the past 8 years (while most OECD countries reduced infrastructure investment following the 2008 financial crisis), governments at all levels have not invested enough to support long-term economic growth.

Bridging the national infrastructure gap through public finances alone would place an unfair and unsustainable burden on taxpayers. The recently announced $60 billion of new federal money over 10 years is a positive action within the realm of public means. Historically, Federal investment has stood at between 10 percent and 20 percent of total infrastructure investment in the country, with the bulk of capital coming from provinces and municipalities.

Institutional capital will be needed

As public revenues alone cannot be expected to bridge the gap, the Council sees the need to innovate in infrastructure financing. It is for this reason that we see greater participation of institutional capital (e.g., capital from banks, pension funds, insurance companies, sovereign wealth funds and other long-term investors) in infrastructure as a national priority and as a condition for success. Wherever possible, federal tax dollars spent on infrastructure should be amplified by institutional capital.

Above all else, we fundamentally believe that increasing the participation of institutional investors in infrastructure funding will allow the federal government to invest *more, not less* in social and environmental projects that will improve the daily lives of all Canadians residing in cities, regions and First Nations communities.

Trillions of dollars are available for investment

Given the historically low, and in many cases negative, interest rate environment that constitutes the global economy's "new normal," there is an abundance of institutional capital around the world waiting to be deployed. Canadian and global investors are looking for long-lived projects with appropriate risk-adjusted returns in which to invest.

To broadly illustrate this point, we note that approximately $12 trillion are currently "parked" in negative-yield bonds.[8] Infrastructure investments held by pension funds today amount to approximately US $170 billion.[9] However, this is less than one-tenth of the total capital available for this asset class from pension and sovereign wealth funds alone (exhibit 2). Canada is particularly well-positioned to capture a substantial share of this capital if it can set the right conditions to attract it.

Increasing the participation of the institutional capital will allow the federal government to invest more, not less in social and environmental projects.

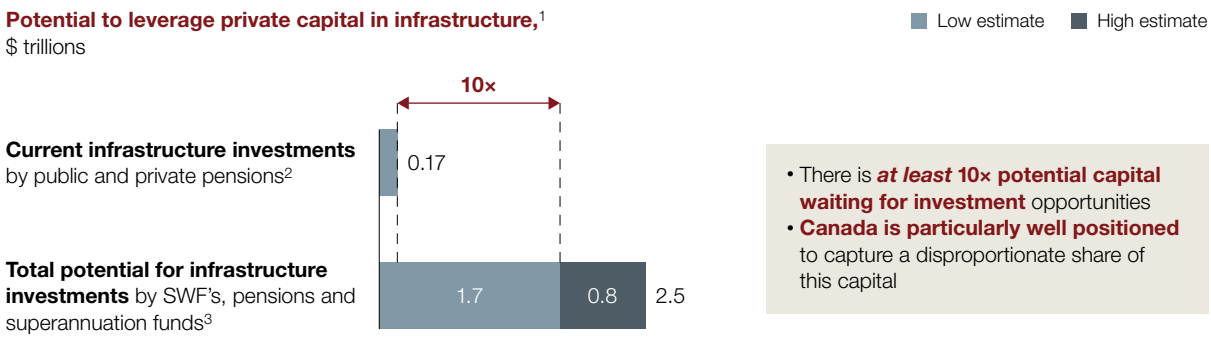
What's needed to attract institutional capital?

The federal government should seek to establish the following conditions to attract institutional capital:

- Promote a pipeline of scalable projects with reasonable certainty. Institutional investors need assurances regarding efficient siting, permitting, approvals and compensation mechanisms – these should be transparent, time-bound and standardized wherever possible. The federal government should ask all government departments involved in greenfield infrastructure projects to publicly declare time standards for approvals and publish their performance relative to those standards. (This approach was highly effective in Australia at attracting institutional capital)

- Install an objective process, predictable regulation and clarity on strategy. Institutional investors need to see clear, long-term investment paths (e.g. Infrastructure Development Plan) with objective investment

Exhibit 2 **There is a massive pool of private capital waiting on the sidelines.**[10]



[1] Doesn't include $66 trillion in total assets managed by insurance companies and banks.
[2] Current infrastructure investments by public and private pensions (~2.6 % of total funds under management).
[3] Infrastructure potential for SWF, pensions and superannuation funds; (10-15% of AuM for SWF's & pensions).

Source: Preqin infrastructure investors report 2016, Infrastructure Pooling Institutional Investors Capital_OECD_April 2014

criteria. There also needs to be clarity about the division of roles between the federal, provincial and municipal governments. Investors do not like getting caught between the differing interests of different levels of governments.

- Develop professional and expert counterparties. Institutional investors will require world-class expertise in procurement, siting, permitting, structuring complex transactions and delivering complex projects that take multiple interests into account.

- Attach revenue streams to new and in some cases existing infrastructure. Institutional investors require some source of revenue potential, which can come from multiple sources: availability payments, ancillary funding models (e.g. property value capture), and user fees. Attaching some form of revenue stream to existing or new assets can also lead to improved productivity and use of the asset as seen in many other jurisdictions.

What should a successful infrastructure strategy look like for Canadians?

Canada has traditionally done well in affording its citizens a good quality of life. However, as we look at the demographic and economic trends that lie ahead – low productivity, continued urbanization, rising cost of housing, etc. – we believe that it is time to rethink the federal approach to infrastructure, which has been relatively passive historically.

Specifically, we believe that federal investments in infrastructure should achieve the following strategic objectives:

A. Grow the prosperity of all Canadians, by:

- Connecting Canadians to better employment and education opportunities through daily accessibility to locations where the most suitable work or education can be found
- Creating a flywheel of institutional capital participation to increase investments in infrastructure while freeing up federal tax dollars for investment in public good projects
- Improving capacity to expedite goods and services to market within and across Canada's borders
- Creating jobs through the construction and operation of productive and efficient infrastructure
- Maximizing the economic benefit per taxpayer dollar through better project selection, structuring, procurement, and delivery

B. Improve the quality, accessibility and sustainability of infrastructure services, in order to:

- Improve the livability (including the affordability) of Canada's cities for families across the economic spectrum
- Promote economic development in First Nations communities as well as in rural and northern regions
- Increase the environmental sustainability of our economy by bettering the efficiency of Canada's transportation and electricity networks, which combined, account for 34% of its greenhouse gas (GHG) emissions[11]

We see the need for a new breed of federal strategy and institution to grow and better the pipeline of projects.

The Bold Idea—Recommendations

Recommendation 1: Develop a focused federal infrastructure strategy

Although nearly 98 percent of public infrastructure assets in Canada are owned by provinces and municipalities, we see a need for a shift in the federal approach to infrastructure. Historically, the federal government has financed substantial provincial and municipal projects, but often without a clear national strategy. We believe that executing a coherent national economic growth strategy requires a more purposeful approach to federal infrastructure funding.

At a high level, such a federal strategy should adopt two clear pathways for project selection, funding and delivery:

Pathway 1 – National economic development infrastructure

This first pathway should address large, "commercializable" types of infrastructure. Projects should target national economic development objectives and enhance productivity.

In priority areas such as expanding the country's trade with emerging markets, an illustrative example would include doubling the throughput capacity of the Asia-Pacific Gateway, or achieving 5G broadband connectivity on a national scale.

In essence, this pathway's primary purpose is to grow the Canadian economy through win-win collaboration with institutional investors. The more institutional capital can be attracted to replace and exceed available federal tax dollars; the more . . .

- . . . infrastructure will be built, narrowing the national gap
- . . . productive and sustainable infrastructure will be, by benefiting from both public and private sectors due diligences
- . . . public funds can be available to create infrastructure for the public good (described in the second pathway).

Specifically, projects on this pathway should accomplish one of two economic priorities:

A. Improving the transportation of people, goods, energy and data within and across our borders

Connectivity is the linchpin of Canada's economy and is highly dependent on the availability and quality of the country's infrastructure.

A recent study evaluated the density of global flows in goods, services, finance, people and data in an effort to rank countries across these areas and in the aggregate. Canada's connectivity index ranking fell from 8th place in 2012 to 13th place in 2015, lagging peers such as the Netherlands, the United States, Germany, Ireland, the United Kingdom, France and Belgium. This is material to Canada's competitiveness and future growth. The same study determined that the most connected countries experience 40 percent more GDP growth from trade than the least connected ones.

We should target infrastructure that will result in the greatest productivity gains. This will often mean investments required to move our natural resources, energy, foodstuffs and products more efficiently. Improving the physical and digital connectivity of Canadians will matter in a world where trade in services is on the rise. Unlocking our educated, multicultural human capital's potential requires infrastructure that allows efficient data communications and physical travel within Canada and abroad.

B. Helping build high-performing and highly livable cities that will attract talent and investments, to spur innovation and trade

Inclusive cities are those that can provide infrastructure services such as public transit and housing to give all of their inhabitants the opportunity to participate actively in their communities and in the economy to the best of

their abilities.[12] With better transportation for example, Canadians can seek better jobs in a wider region. We expect inclusive cities to grow faster and more sustainably than others.

Cities are, in fact, Canada's biggest engines of economic growth and job creation. Cities drive productivity by increasing the frequency of interactions among the people who live and work in them. Innovation and start-ups occur intensively in cities. With human capital as their resource, they are the driving force behind the country's service economy.

Seventy percent of Canadians currently live in cities. Our urban population is growing 2.5 times faster than the rural one. And the rate of urban growth could be expected to increase with step-ups in immigration, which will add to the need for city infrastructure investment.[13]

". . . Successful cities attract talented young highly-skilled workers, are centers of innovation and entrepreneurship and are competitive locations for global and regional headquarters. The proximity of universities to research and production facilities means cities are where new products are developed and commercialized. More than 80% of patents are filed in cities."

—OECD

Pathway 2 – National transfer programs

This second pathway should address all other projects that are within the realm of Federal funding. Generally speaking, such projects will be socially and environmentally important, but unable to attract institutional capital because of their size, or because of the absence of revenue streams. Examples include affordable housing, First Nations infrastructure, cultural and tourism attractions, regional development and connectivity, and environmental remediation.

It is understood that the vast majority of projects undertaken on this pathway will be led by the provinces or municipalities. With this in mind, the federal government should look to streamline its participation by entering into partnership agreements with the provinces whereby a few "smart" transfer programs consolidate the many project submissions. Each transfer program could set out desired outcomes (e.g. increased housing accessibility). Moreover, these programs should include incentives that reward best practice adoption in project selection, structuring, procurement and delivery. To this end, the federal agency proposed in our second recommendation could play an advisory role to submitters as well as to the federal government.

Successful execution on "Pathway 1" infrastructure projects will expand the amount of capital available for these important investments in social and other types of infrastructure without revenue potential. The goal is to grow the pie for infrastructure investment across all types of projects and all levels of government by leveraging the potential of institutional capital.

Recommendation 2: Create a Canadian Infrastructure Development Bank (CIDB)

In our view, the creation of an infrastructure development bank is a once-in-a-generation opportunity for Canada.

This Council believes that Canada needs to create a new institution in order to deliver on the strategic objectives laid out above, including attracting the institutional capital needed to amplify federal investment, ensuring optimal project selection, and best practice adoption in project procurement and delivery.

While we leave it to the professional policymakers to define the nuts and bolts of such an institution, we have laid out what we believe are important considerations with regards to the CIDB in five areas: a) Objectives of the bank; b) Governance; c) Source of funds; d) Talent, and e) Provincial collaboration

A. Objectives

The primary objectives for the Bank should be to:

1. Attract institutional capital to gain greater impact per taxpayer dollar and meaningfully reduce the infrastructure gap; and

2. Act as a center of expertise to structure and deliver projects in the most cost efficient way, to minimize the tax dollars required

	CIDB Overview
Objective	Deliver over $200 billion worth of projects over 10 years using as few tax dollars as possible
Governance	Sufficiently independent to achieve commercial credibility, balanced against governmental accountability
Financing	Capitalized to $40 billion over 10 years to provide subordinated debt and equity on projects
Talent and operations	Attract expert talent to serve as a center-of-expertise in infrastructure project selection, financing and delivery
Provincial and municipal interface	Complement existing municipal and provincial capabilities through a trusted and tailored partnership approach

The focus of the Bank should be on those National Economic Development projects identified in the first investment pathway. Examples include toll highways and bridges, high-speed rail, port and airport expansions, smart city infrastructure, national broadband infrastructure, power transmission and natural resource infrastructure.

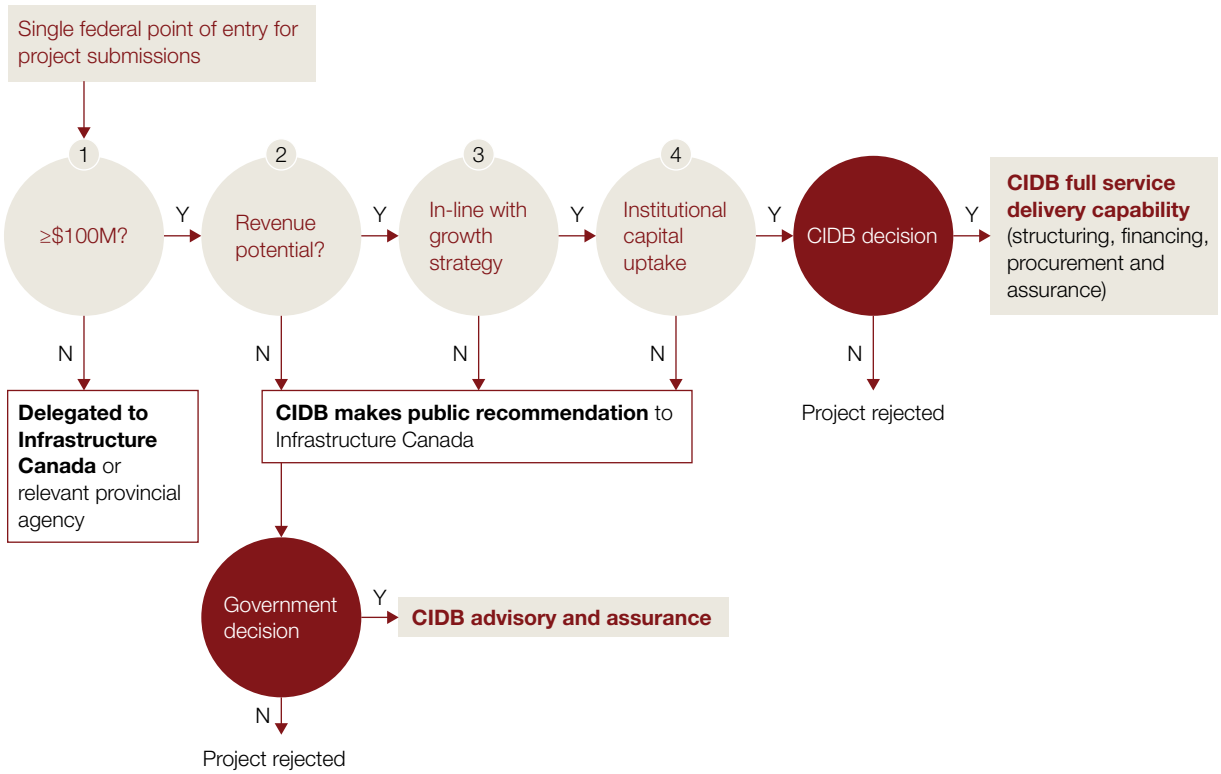
Projects considered by the Bank should generally have an all-in cost in excess of $100 million to meet the minimum scale required to attract institutional investment.

B. Governance

The Bank will require an independent governance structure in order to attract institutional capital and to attract the level of talent required to deliver on its mandate. The Bank could be structured as a Crown Corporation,

Exhibit 3 **Overview of project selection process** FOR DISCUSSION

Decision-making schematic



[1]Total project cost.

similar to the CPP Investment Board, but more important than the legal structure will be the level of independence of the institution, in terms of management and decision-making. This should include the appointment of a highly independent board of governors and a CEO with world-class, relevant business experience.

While independent in its operations, the Bank will nonetheless receive its strategic direction from government on an annual basis, which will inform its criteria for project selection and prioritization.

In addition, the Bank could be mandated to support national economic development objectives set out by Government. This could be achieved, for example, by mandating the Bank to undertake an impartial National Infrastructure Audit followed by a National Infrastructure Development Plan that could be approved or rejected by Government once submitted. The Audit could be updated on an ongoing basis, supported by new and much-needed analytics capabilities. The Plan could be publicly submitted to Government on a periodic basis (e.g. every 3 years), looking out to a 10 or 20-year horizon. These two outputs would thus help inform future federal infrastructure strategy planning.

At the individual project level, a clear decision-making process should be adopted as presented below in Exhibit 3. This process could be accomplished in four steps.

As a first step, project proposals are submitted to CIDB for assessment, with the sole requirement that their total value be above $100 million. These projects can come from municipalities, provinces, and other branches of government, or they may even take the form of unsolicited bids from the private sector. At this stage, the Federal government has the ability to reject a project proposal outright.

Second, projects are screened for their ability to potentially generate revenues. If there is no revenue potential, they should be funded directly by the traditional government granting process, but the CIDB could offer optional advice as to the procurement and execution of these projects.

Third, projects are evaluated against the Federal government's strategic and economic objectives as well as their ability to generate productivity gains for the country.

Fourth, the CIDB leads a process of project structuring with institutional capital providers in order to maximize the multiplier effect on taxpayer dollars while providing a fair return to investors. This may include a competitive bidding process. Once this stage is complete and financing has been arranged, the project is approved and moves to the funding and execution stage.

C. Financing

The Bank should be capitalized at a minimum of $40 billion over ten years by the federal government. The new Bank should be mandated to attract four dollars of institutional capital for every government dollar invested upfront.

The Bank will play a critical role in addressing early stage risks associated with large infrastructure projects. This "de-risking" will often entail investing equity upfront to complete technical drawings, specifications, risk assessments, social impact analyses, early permitting, etc.

As a result, the Bank will likely earn below-market returns for some projects to "clear the market" with institutional investors. In our view, the objective of preserving capital in real terms would be a huge financial success and represent a significant reduction of the long term burden of these investments on Canadian taxpayers.

The Bank's financial participation in projects will generally be in the form of subordinated equity and loan positions. Consequently, mechanisms could be adopted by which the Bank would share in equity upside once a specified return threshold is met.

The Bank's toolbox of financial instruments should be diverse enough to enable highly tailored project support for provincial, municipal and private sector counterparties. Financial instruments could include performance bonds, loan guarantees, etc.

Eventually, the Bank could aim to achieve some degree of financial autonomy. Once its portfolio of projects has grown large enough, for example, the Bank could consider ways to further amplify its capital (e.g., through securitization of revenue streams). We expect Infrastructure-backed bonds to find wide appeal. The Bank's ability to raise such debt independently would reduce its dependence on periodic federal allocations, resulting in both greater funding predictability and attractiveness to institutional investors.

Active traffic management on England's M42 roadway, for example, directs and controls the flow of traffic; this has reduced journey times by 25 percent, accidents by 50 percent, pollution by 10 percent, and fuel consumption by 4 percent – at only 20 percent of the cost of widening the road.

The performance of the Bank should be measured against the leverage it can achieve from its capitalization, as well as the degree to which it can accelerate the "recirculation" of federal tax dollars in productive infrastructure investments.

D. Talent and operations

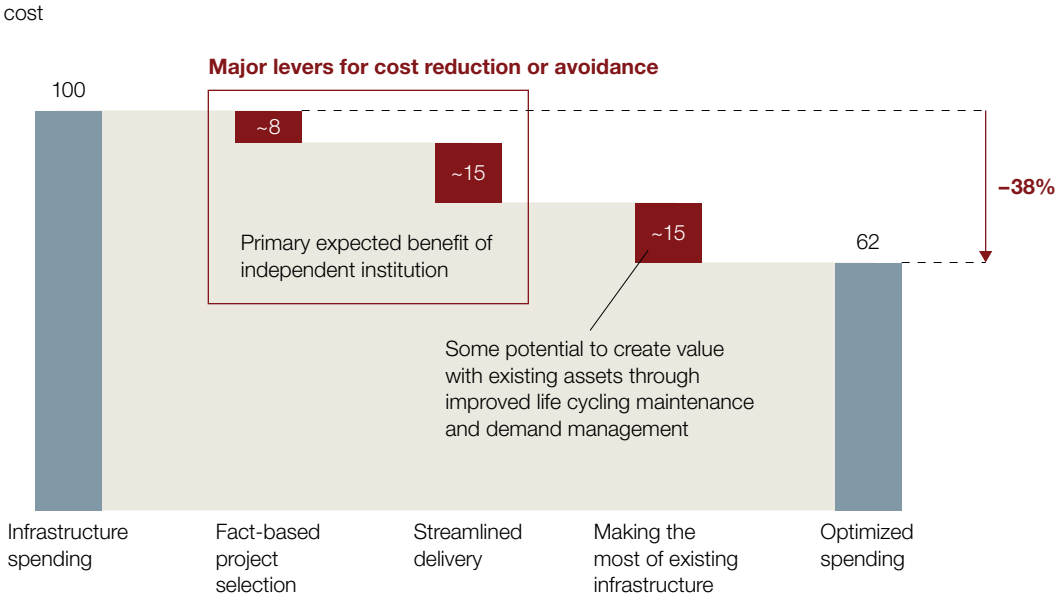
The Bank should be enabled to attract and retain top talent and become a national center of excellence in infrastructure. Only with world-class talent will the bank have the credibility and capabilities it will need to attract institutional capital.

Functionally speaking, the Bank should be capable of full service infrastructure project structuring, financing and delivery, from project evaluation to procurement.

Moreover, the Bank should take core responsibility in developing a national pipeline of projects as described further below. This must include developing the analytical abilities to act as the prime evaluator of Canada's infrastructure needs.

In those large infrastructure projects where the Bank's financing services are not required, the Bank could be invited to play an advisory role to provincial and municipal agencies who request it. The Bank should also play such an advisory role (e.g. assurance) for federal infrastructure investments outside of the Bank's financial

Exhibit 4 **There is significant opportunity for the institution to improve outcomes using best practices—in the range of 23 percent savings.**[14]



Source: McKinsey Global Institute analysis

purview. In doing so, the Bank should become a steward of efficiency throughout the project cycle and across levels of government. As such the CIDB could deliver substantial savings to taxpayers. Cost-reduction levers like fact-based project selection and streamlined delivery are estimated to bring average savings of 8 percent and 15 percent respectively (Exhibit 4).

E. Collaborating with provinces and municipalities

Collaboration with the provinces and municipalities will matter greatly.

Acknowledging the varying degrees of capability and resources of existing provincial and municipal infrastructure agencies, the Bank should adopt a "trusted and tailored partnership" approach. The Bank should seek to complement and not substitute existing capabilities at the municipal and provincial levels. We note that in some cases the competencies at the provincial or municipal level may exist, but the assisted agencies may not have the scale to deal with some of the exceptionally-large projects on which the CIDB will generally focus.

While provincial representation in the Bank's governance or ownership are options worth considering in the future; in the interest of expediency, we do not see these as imperatives to the launch of the Bank. Nevertheless, the door should be left open.

Recommendation 3: Create a flywheel of reinvestment

Canada currently has a massive storehouse of value within its national infrastructure. The question is how can this value be harnessed and amplified for the benefit of all Canadians?

We believe that Canada can create a flywheel of reinvestment in its infrastructure by catalyzing the participation of institutional capital in existing assets, and using this capital to multiply investment into new infrastructure.

This does not necessarily mean an outright sale or 100 percent transfer. Indeed, there is a broad spectrum of options available including minority participation and long term lease structures that could allow Canadians to tap into the value of their collective infrastructure assets for reinvestment. In many cases, the Federal government could retain control of these assets.

In order to trigger this flywheel, the Federal government should lead by example and begin with successfully structuring and executing on this idea with one or more assets in the Federal portfolio. The CIDB will be well-positioned to structure and deliver on these transactions to ensure that Canadians receive the best outcome possible.

How should the government transition to this new model for infrastructure investments?

The CIDB cannot be built overnight. Three major elements must be put in place before the government can begin to adopt the model and entrust projects to this new institution. First, it will take time to draft and enact legislation to set up the institution. Second, the right talent will need to be identified and put in place. Finally, adequate funding will need to be earmarked and allocated to the CIDB to ensure its credibility with the private sector as well as capacity to deliver on the chosen projects.

Since the need for a fiscal and productivity-boosting catalyst is now, we advise against delaying federal investment in the interim period.

One implication of this delay is that the government will need to develop a transitional approach to shift to this new model of investment for large projects. We would encourage the government to keep this transition period as short as possible, with a target of no longer than 2 years. During this period, the current funding mechanisms will need to stay in place. This would mean that many projects would follow the traditional funding process while the bank is being set up, even though they may have qualified for additional funding under the CIDB.

That said, this approach should be considered for a transition period only. Over the long term, we believe the objective criteria to allocate project selection decisions to the CIDB, detailed in this memorandum, should be implemented in full. ■

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1 International Monetary Fund and McKinsey Global Institute.
2 McKinsey Global Institute. Note that figures vary based on impact-assessment methodologies, invested asset classes, and project types.
3 In 2013, the expenses from congestion totaled $200 billion (0.8% of GDP) across four countries studied: USA, UK, France and Germany – "The Cost of Traffic Jams," The Economist, November 3, 2014.
4 Assuming past 50 years (1964-2014) productivity growth. Jutta Bolt and Jan Luiten van Zanden, "The first update of the Maddison Project: Re-estimating growth before 1820," Maddison Project Working Paper Number 4, University of Groningen, January 2013, ggdc.net; UN Population Division; McKinsey Global Institute.
5 "P3's: Bridging the First Nations Infrastructure Gap," The Canadian Council for Public-Private Partnerships, 2015, pppcouncil.ca.
6 Statistics Canada, 2016.
7 Center for Policy Alternatives, Canadian Chamber of Commerce, Federation of Canadian Municipalities and interviews
8 "There are Now $11.7 Trillion Worth of Bonds with Negative Yields", Jeff Cox, CNBC.Com, 29 June 2016
9 Prequin Infrastructure Investors Report – 2016.
10 Does not include $66 trillion in total assets managed by insurance companies and banks. Current infrastructure investments by public and private pensions are ~2.6 % of total funds under management. Infrastructure potential for sovereign wealth funds, pensions, and superannuation funds are extensive, and estimated at 10 to 15 percent of AuM for SWF's & pensions. "Preqin Infrastructure Investors Report 2016," prequin.com; and " Pooling Institutional Investors Capital – Selected Case Studies in Unlisted Equity Infrastructure," Organisation for Economic Co-operation and Development, April 2014, oecd.org.
11 "Environment and Climate Change Canada, "National Inventory Report 1990–2014: Greenhouse Gas Sources and Sinks in Canada," ec.gc.ca.
12 "Inclusive Cities are Productive Cities", Jonathan Woetzel, McKinsey Global Institute, April 2016.
13 Statistics Canada, 2015.
14 McKinsey Global Institute.