INVESTING IN CANADA

CANADA'S LONG-TERM INFRASTRUCTURE PLAN

Canada

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MINISTER'S MESSAGE

Our government is committed to supporting the middle class and those working hard to join it. We have an ambitious agenda to grow the economy and create jobs and growth in communities across the country. In addition to lowering taxes for the middle class, introducing the Canada Child Benefit and strengthening the Canada Pension Plan, our plan is making unprecedented investments in infrastructure from coast-to-coast-to-coast that will benefit all Canadians. Our goal is to strengthen our economy and provide new opportunities for our families, our youth, our seniors and our communities to enhance their quality of life.

Generations ago, our country made major investments in infrastructure to improve the future prosperity for generations that followed — the transcontinental railway, the Trans-Canada Highway, and the St. Lawrence Seaway, to name a few. These major projects changed the face of Canada and helped propel the country into a new era of prosperity and opportunity.

Five Investment Streams

PUBLIC TRANSIT
Build new urban transit networks and service extensions that will transform the way Canadians live and work.

GREEN INFRASTRUCTURE
Ensure access to safe water, clean air, and greener communities where Canadians can watch their children grow.

SOCIAL INFRASTRUCTURE
Provide adequate and affordable housing and child care and cultural and recreational centers that will ensure communities are great places to call home.

TRADE AND TRANSPORT
Provide sustainable and efficient transportation systems that will bring global markets closer to Canada to help businesses compete, grow and create more jobs.

RURAL AND NORTHERN COMMUNITIES
Grow local economies, improve social inclusiveness and safeguard the health and environment of communities.

The Time to Invest is Now

We know the world is changing. Every day it becomes more digital; international trade grows; and the ways we work, move and communicate are evolving. Climate change presents new challenges and we need to find innovative ways to build a cleaner economy that relies on green, renewable, and adaptive technology. Our investments today will ensure that Canada remains among the best places in the world to call home.

We are committed to ensuring that all Canadians have opportunities that allow them to reach their full potential. Infrastructure is the backbone of our communities and plays a key role in our vision for the future of our country.

We believe our cities should have efficient public transit systems to help reduce traffic congestion and improve air quality. We recognize that when Canadians have access to public transit to get to work and back home to their families quickly and safely, it enhances productivity and quality of life. Whether in rural municipalities, small communities or urban centres, we also need to ensure we are investing in backbone infrastructure like roads and bridges to ensure that people and goods can move freely.

We want to see our communities become cleaner and more digitally connected. We need to find ways to use data more wisely — places where communities install traffic lights that can adapt to congestion to speed up traffic flow, adopt new technology that can identify leaks in our sewer systems, and place more solar panels on rooftops so we can conserve energy and produce energy from renewable sources.

Climate change is happening and it is already affecting communities across Canada. Now is the time to invest in infrastructure that helps make communities more sustainable. Our investments in disaster mitigation and adaptation infrastructure will help reduce our impact on the environment and prepare communities to face the effects of climate change now and in the future.

Our world is more integrated than ever before. To compete in a globally competitive marketplace, we must invest in innovative ways to get our goods to market and onto the world stage. To do this, we need to invest in the next generation of roads, railways, ports and airports that will connect our cities, rural and northern communities to essential trade corridors.

We want to build an economy that benefits all Canadians. To make this a reality, we must put in place social infrastructure — like affordable childcare, safe, affordable and secure housing for all, and support for our aging population — that ensures every Canadian has access to the supports and services they need.

Now is the right time to make these investments. Canada is well positioned economically and can afford to invest in both our short-term successes and the success of future generations.

A Two-Phased Approach

We firmly believe that local decision-making results in better outcomes for Canadians. That is why one of my first priorities was to establish strong working relationships with our counterparts in other orders of government. Through extensive consultations with provincial, territorial, municipal and Indigenous partners, and national and regional stakeholders, it became clear that certain investments had to be made quickly, while others required significant planning. Before making massive investments in major, transformative projects, we needed to restore, modernize and adapt our existing infrastructure. We also learned that all orders of government needed some time to effectively plan for long term projects. This is why we developed a two-phased approach.

The first phase of our infrastructure plan focuses on repairing and upgrading our vital public transit systems; investing in water and wastewater systems to ensure all communities, including Indigenous and rural communities, have secure access to clean drinking water; and that funds were available to build and repair much-needed affordable housing, including essential investment in Indigenous housing. We also provided funding for planning and design work to allow communities to prepare for longer term projects.

The second phase of our historic, long-term plan focuses investment in small and large projects that will help build our economy for the future. Our plan will help Canadian communities face the challenges — and reap the rewards — of the 21st century global economy. These investments will help us achieve our vision for Canadian communities: better movement of people and goods, cleaner air and water, reduced greenhouse gas emissions, smarter and more efficient cities, greener transportation systems, improved water management, better access to affordable housing,

more affordable child care, new public spaces that make our communities even greater places to live, better transportation and digital infrastructure for people living in remote communities, and improved energy security and a reduced reliance on diesel in the North.

To achieve this ambitious vision, we will continue working closely with our provincial, territorial, municipal, Indigenous partners; stakeholders across the country; and of course, with all Canadians. Collaboration and partnership will remain at the heart of our success.

Innovative Approaches

We need to innovate and try new approaches to address Canada's infrastructure gap. The Canada Infrastructure Bank is designed to do just that. The Bank is an additional tool available to our provincial, territorial, municipal and Indigenous partners that allows them to use public funds to attract private sector and institutional investment for new, revenue-generating infrastructure projects in the public interest. By leveraging the capital and expertise of the private sector, public dollars will go further to support projects that might not otherwise move forward and allow grant dollars to support projects that are more appropriate for traditional funding mechanisms.

We also want to empower our partners to take risks and think outside the box. That is why we launched the Smart Cities Challenge — a Canada-wide competition open to communities of all sizes, including municipalities, regional governments and Indigenous communities. The Challenge encourages communities to improve the lives of their residents by using data and connected technology in innovative ways.

Transparency

We are committed to full transparency and using evidence-based planning as we move forward with our ambitious plan to transform Canada for years to come. We will work with our partners to improve the quality of data and reporting and the Government of Canada will report annually to Canadians on the plan's progress and results. We are proud to have launched the online **Investing in Canada plan project map** where Canadians can search for investments made in their communities and I encourage you to check out the project map yourself.

Our Commitment

This plan demonstrates our commitment to ensuring that all Canadians, no matter where they live, have opportunities to reach their full potential. Infrastructure is the backbone of our communities and plays a key role in our vision for the future of our country.

As we move forward, we will continue our close collaboration with leaders across the country to help Canada — and all Canadians — build on our past successes and secure a strong, prosperous, and inclusive country for generations to come.

The Honourable Amarjeet Sohi, P.C., M.P.
Minister of Infrastructure and Communities

EXECUTIVE SUMMARY

The Investing in Canada plan is the Government of Canada's comprehensive, long-term plan for building a prosperous and inclusive country through historic infrastructure investments. Through this Plan, the Government is investing in people: to enable Canadians to get to work and home quicker and spend more time with their families; to have places to play and stay healthy; to enjoy clean drinking water and pristine environments; and to run their businesses and access services regardless of where they live.

Over the 12 years of the Plan, starting in 2016, the Government will invest over $180 billion in infrastructure — more than doubling existing federal funding — to achieve three objectives:

- Generate long-term economic growth to build a stronger middle class;
- Improve the resilience of communities and transition to a clean growth economy; and
- Improve social inclusion and socio-economic outcomes for all Canadians.

The Plan is built upon extensive research and public engagement that made it clear Canada faces a broad-based infrastructure gap which is limiting Canada's economic growth and Canadians' quality of life. Examples of the gap include congestion in urban centres, too many Canadians struggling to meet their housing needs, insufficient and aging water and wastewater systems, community infrastructure that is in disrepair, a lack of broadband Internet connectivity in many rural and remote areas, and a lack of basic infrastructure in many Indigenous communities.

The Investing in Canada plan differs from previous infrastructure plans — it is longer-term and guided by clear priorities, concrete objectives and, instead of outputs, by measurable outcomes. It offers long-term, sustained funding to enable planning and prioritization by all orders of government. It funds a wide variety of needs and priorities including large, transformative investments, from housing, to public transit, to community centers, to highways, that will benefit Canadians now and in the future.

Provinces, territories, municipalities and Indigenous communities are key partners. Through the Investing in Canada plan, the federal government's increased investment in infrastructure will be further leveraged by all orders of government to more than double the reach of the Plan's funding.

Of particular importance will be addressing the infrastructure gap within Indigenous communities. To advance reconciliation and the shared economic interests between Canada and all Indigenous Peoples, the Investing in Canada plan makes unprecedented investments in the infrastructure that is most important to Indigenous communities, such as new and renovated housing, clean drinking water and community infrastructure such as roads and wastewater systems, as well as community, culture and recreational facilities, all of which are essential to healthy, safe and prosperous communities.

The Investing in Canada plan not only provides a clear path forward. It is rooted in partnerships with provinces and territories, municipalities, Indigenous communities and other stakeholders. It will help equip governments with the information required to make the right decisions in the future. It will foster innovation so that Canada faces tomorrow's challenges with new tools and ideas.

Addressing Local Needs and National Priorities

The Investing in Canada plan addresses the unique local needs of urban, rural, remote and Indigenous communities while also addressing national priorities. From coast-to-coast-to-coast, Canadians will see the direct impacts of infrastructure investments — including more affordable housing, improved air and water quality, decreased urban congestion and enhanced resilience to a changing climate.

Through the first phase of the Plan, launched in 2016, the Government made significant and timely investments to address immediate infrastructure needs. The next phase, to be delivered over 10 years, will have transformative impacts on Canada's economy and communities. Coupled with ongoing investments, these new investments represent an historic level of federal infrastructure funding.

The focus on outcomes will be key. To allow Canadians to see exactly what difference infrastructure investments are making in their communities and lives, the Government will track and report regularly on the following outcomes:

1. **Rate of economic growth is increased in an inclusive and sustainable way**
2. **Environmental quality is improved, greenhouse gas (GHG) emissions are reduced and the resilience of communities is increased**
3. **Urban mobility in Canadian communities is improved**
4. **Housing is affordable and in good condition and homelessness is reduced year over year**
5. **Early learning and child care is of high quality, affordable, flexible and inclusive**
6. **Canadian communities are more inclusive and accessible**
7. **Infrastructure is managed in a more sustainable way**

Five Priority Investment Streams

The Plan will help close Canada's infrastructure gap by making significant investments over the long-term in five priority investment streams: public transit ($28.7 billion), green infrastructure ($26.9 billion), social infrastructure ($25.3 billion), infrastructure for rural and northern communities ($2 billion) and trade and transportation infrastructure ($10.1 billion) (Figure 1). In addition, the Plan includes permanent funding such as the Gas Tax Fund and funding committed prior to 2016 such as the New Building Canada Fund.

Public Transit — By improving the capacity, quality, safety and accessibility of public transit infrastructure throughout Canada, the Plan will reduce urban congestion and increase the proportion of Canadians who use transit and active forms of transportation to access jobs, education, health care and social activities. Investments will also support the transition to a low-carbon economy and reduce air pollution and GHG emissions.

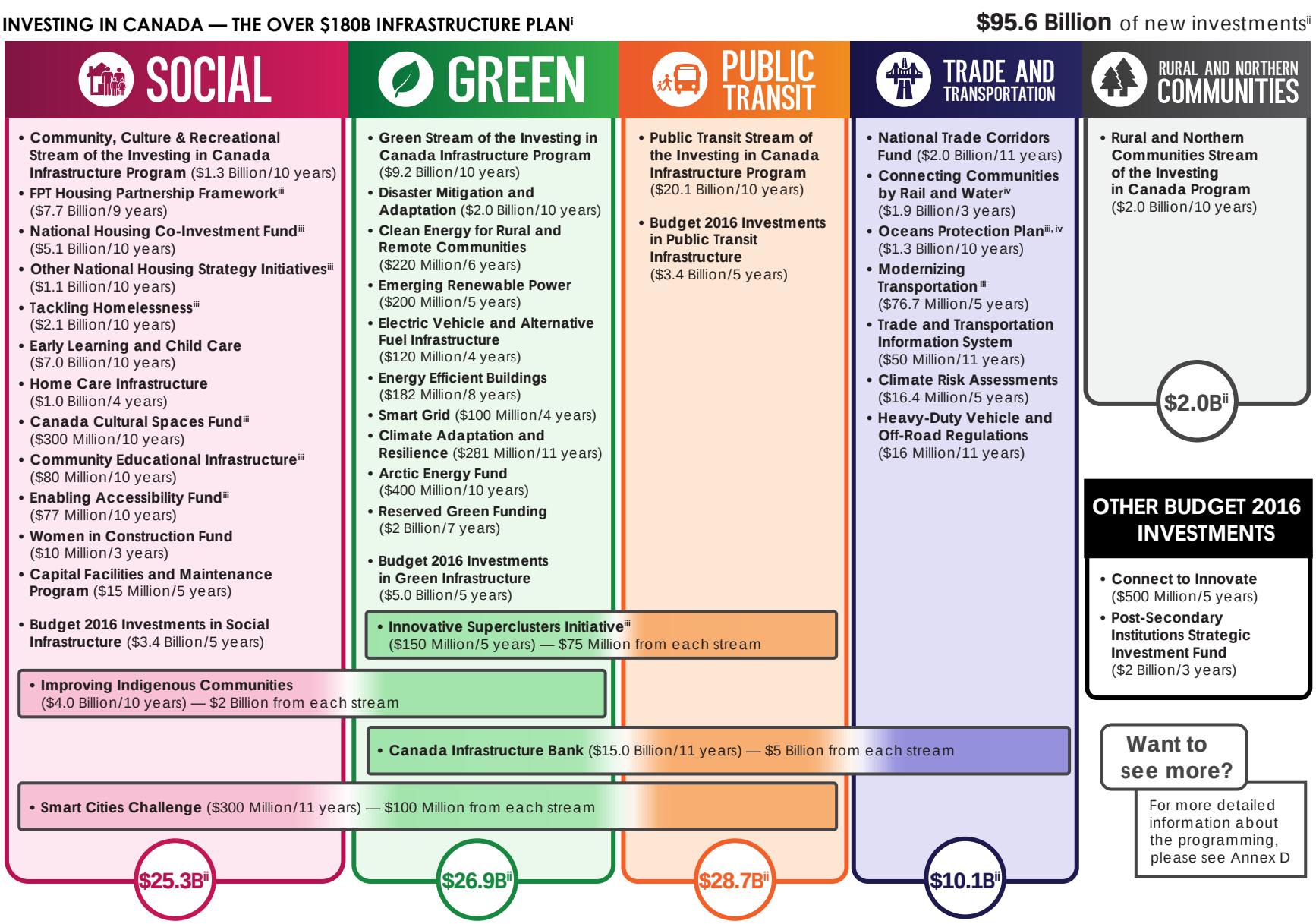
Green Infrastructure — The Plan will address persistent challenges to air, water and soil quality and make Canadian communities, including Indigenous communities, more resilient to climate change, natural disasters and extreme weather events. Infrastructure that reduces greenhouse gas emissions through cleaner electricity grids, energy efficient buildings and transportation systems sets us on a path to a low-carbon future. Other investments in green infrastructure are building Canada's resilience to the risks we face from the impacts of climate change. Collectively, these investments will enable and advance the objectives of the Pan-Canadian Framework on Clean Growth and Climate Change and generate sustainable economic growth.

Social Infrastructure — Investments in housing, early learning and child care, accessible infrastructure and in community, culture and recreation infrastructure will create stronger, more vibrant communities. Funding will be broadly available for large and small projects, depending on the needs of communities. These investments will lead to new opportunities and improved social inclusion for many Canadians, especially Indigenous Peoples and low-income populations. The Plan allocates dedicated funding for housing, early learning and child care, and cultural and community infrastructure for First Nations, Inuit and Métis communities.

Rural and Northern Communities — Investments will help rural and northern communities overcome the challenges that come with small, often widely dispersed populations and long distances from markets, which together make infrastructure projects expensive and complex. This in turn has led to larger infrastructure gaps — including little or no access to reliable transportation and broadband Internet connectivity and a lack of energy security — than for larger communities. By addressing these gaps, the Plan will also create new economic opportunities in these regions.

Trade and Transportation Infrastructure — The Plan calls for investments that will help Canadian businesses compete in the global marketplace. By increasing the capacity of major trade corridors and port facilities, the Plan will help exporters get products to market more quickly. By addressing transportation needs and connecting communities in the territories, it will help accelerate northern and Indigenous economic and social development. It will also make Canada's trade and transportation infrastructure more resilient to climate change impacts and position Canada for lower-carbon economic growth.

FIGURE 1: INVESTING IN CANADA PLAN, BY STREAM



NOTES

[i] Existing funding envelope of $92.2B is not presented in this graphic. See Annex A, Figure 10.

[ii] New investments under the IICP represent $95.6B. In this figure, totals do not add up to $95.6B due to fiscal framework adjustments, rounding and other revenues.

[iii] Initiative partially funded through the Investing in Canada plan

[iv] Includes funding to support capital projects where costs are amortized over the useful life of the asset.

Core Science Facility, Saint John's, Newfoundland and Labrador

The construction of the Core Science Facility at Memorial University of Newfoundland in Saint John's, Newfoundland and Labrador will create an integrated learning and research environment that fosters inventive scientific thinking and practices.

Opening the Door to Innovation

Across the five priority investment areas, the Government will work with its partners to foster innovation and transform how public infrastructure investments are made. Key approaches include:

The Canada Infrastructure Bank — Opportunities exist for innovative approaches to funding and financing infrastructure. Fiscal constraints on all governments have increased the interest in exploring private sector investment and alternative financing mechanisms as a means to increase investment. The newly-established Canada Infrastructure Bank (CIB) collaborates with public and private sector partners to facilitate a new, optional partnership model transforming how infrastructure is planned, funded and delivered in Canada.

Smart Cities Challenge — The Smart Cities Challenge applies a new, experimental approach to program and project delivery in the form of pan-Canadian competitions. The Challenge incentivizes communities of all sizes, including Indigenous communities, to apply a smart city approach that leverages data and connected technology to improve the quality of life of their residents. It will fund projects that are ambitious yet achievable, as well as innovative, transferable, replicable and scalable.

Innovation in Transportation — Connectivity and automation have the potential to make Canada's transportation sector more efficient and competitive, driving economic growth. The Plan calls for investments in a range of innovation priorities, including ways to evaluate new unmanned aircraft and safely adopt driverless vehicles.

Innovation in Addressing Climate Change — The Government of Canada is committed to its Paris Agreement pledge to reduce GHG emissions by 30% of 2005 levels by 2030. The Investing in Canada plan is helping Canada achieve its climate goals and supports commitments made by all jurisdictions under the Pan-Canadian Framework on Clean Growth and Climate Change by encouraging innovation in areas such as smart-grid technologies, renewable resources, electric vehicle and alternative fuel infrastructure, clean, renewable energy sources to displace diesel fuel in Indigenous, remote and northern communities, and the use of natural infrastructure to enhance resilience to climate impacts.

Delivering the Plan

The Government of Canada's Investing in Canada plan will be delivered by Infrastructure Canada, along with other federal departments and agencies including Indigenous Services Canada, Natural Resources Canada, the Canada Mortgage and Housing Corporation, Employment and Social Development Canada and Transport Canada. Infrastructure Canada is responsible for the overall coordination and annual reporting on results for the Plan. Reflecting the partnership focus, bilateral agreements between the federal government and each of the provinces and territories are a key delivery mechanism for the Plan.

1. THE INFRASTRUCTURE GAP

The Minister of Infrastructure and Communities' 2015 mandate letter reflects the need to address Canada's broad-based infrastructure gap. Extensive research, public engagement and the advice of the Advisory Council on Economic Growth[1] make it clear that Canada needs a long-term approach to investing in infrastructure to improve the quality, accessibility and sustainability of services that Canadians use every day.

From a lack of access to broadband Internet connectivity in rural areas to congestion in urban centres, these gaps impose limitations on Canada's economic growth and its capacity to build and grow the middle class. The importance of well-maintained, productive, and effective infrastructure cannot be overstated. However, assessing the extent of the infrastructure gap is challenging for all orders of government. Key challenges include difficulty in determining how much to invest, the lack of precise data on the state and performance of existing assets, a lack of innovation in infrastructure development and the need to find new ways to better use public funds and access private capital.

The Government of Canada is overcoming these challenges through new, innovative investments. The Investing in Canada plan builds on the framework announced in Budget 2016, the 2016 Fall Economic Statement and Budget 2017. This document explores the central economic, social and environmental trends that present opportunities and challenges for Canadian communities, and sets out the key Government of Canada initiatives to address them.

Why Infrastructure is Important

Infrastructure is the set of basic facilities and systems required for a country, city or community to function. What kind of infrastructure exists and how well it works affects the success and prosperity of communities and determines whether they have the capacity to deal with economic, social or other challenges.

Roads and railways ease the flow of people and goods, allowing economic activities to be concentrated and specialized across regions, facilitating a strong economy. Telecommunications, especially digital and cellular, enable real-time information transfer regardless of distance, helping Canadians in all regions stay in touch and access services. Secure water supply and sewage treatment safeguard human health so that Canadians are able to enjoy clean drinking water and pristine environments. Housing and early learning and childcare investments provide integral supports for individuals and families. Community hubs bring together health, social, cultural, sport and recreational services providing Canadians with places to play and stay healthy. Increasingly, there is recognition of the role of infrastructure — including natural solutions such as wetlands for storm water retention as an alternative or complement to traditional built infrastructure — in helping societies address the challenges presented by the changing climate and extreme weather events.

The public benefits of infrastructure, including those related to human health and well-being, and the high costs to develop and build it, have naturally emphasized the central role of governments or state-owned enterprises in the sector. In Canada, infrastructure is largely developed, owned and managed by provincial, territorial and municipal governments. This includes highways, roads, bridges and other transportation infrastructure; water and wastewater facilities; education and health infrastructure; and social infrastructure including housing, early learning and child care and community centres.

Policy makers, academics and practitioners increasingly recognize that the private sector can contribute in a variety of ways to infrastructure investments, operations and regulations. Already, private companies build and operate power generating plants, water supply and wastewater treatment facilities and run telecommunication companies, airlines, toll roads, buildings and port facilities. Other infrastructure sectors in Canada are managed by varying degrees of public and private entities. For instance, semi-private entities like Crown corporations play a role in energy, airports and ports, and non-profit associations work with publicly-owned entities to develop sport, recreational and cultural infrastructure.

INVESTING IN PEOPLE

Investing in infrastructure is ultimately about investing in people. Modern, accessible public transit allows people to get around their cities more easily, and reduces gridlock, so that everyone spends less time in traffic and more time with their families. Investing in water and wastewater projects means parents can trust that their children are drinking cleaner, safer water. And investing in social infrastructure provides affordable housing and helps families access early learning and child care, unlocking people's potential to participate fully in economic and community life.

Sugarloaf Bridge, Zeballos, British Columbia

The replacement of the Sugarloaf Bridge in Zeballos, British Columbia with a stronger and bigger one allows local residents to spend less time on the road, and provides people with access to important emergency services.

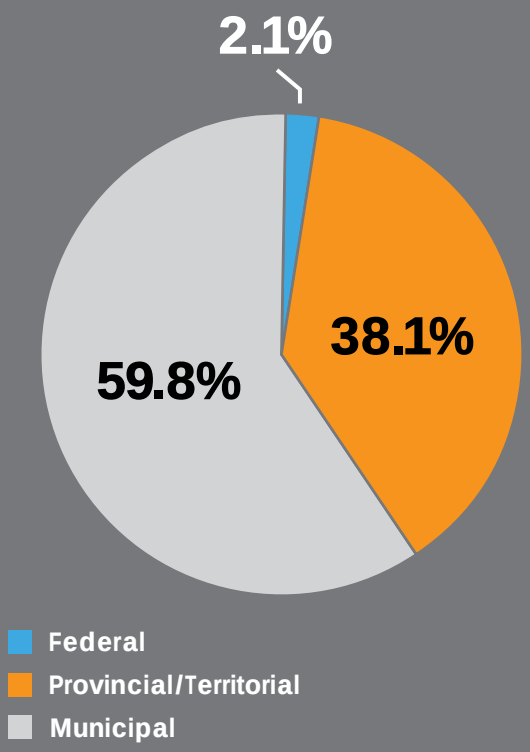
Ownership and Investments in Infrastructure

In recent years, all orders of government in Canada have increased their investments in infrastructure. Provinces, territories and municipalities, which own the vast majority of core public infrastructure (such as roads, bridges, transit systems, water and wastewater systems and culture, sport and recreation infrastructure) (Figure 2), collectively doubled their investments between 2003 and 2013, from $14.5 billion to $29.5 billion.[3]

The federal government also increased its spending on core public infrastructure, from $600 million annually in 2003–04 to $5.5 billion annually by 2014–15.[4] These investments have helped reduce the average age of Canada's public infrastructure from 17.8 years in 2000 to 14.7 in 2013.[5]

Even so, infrastructure demand has outpaced investments for several decades. While the size of Canada's infrastructure gap is a matter for debate — in 2013 estimates ranged from $50 billion to $570 billion depending on the methodology used[6] — there is consensus that significant investments are needed to address it. The additional $95.6 billion in federal support announced in Budgets 2016 and 2017, including more than $7.6 billion for Indigenous communities, along with significant investments in infrastructure by other orders of government, will help to close the gap while also supporting longer term investments to address emerging challenges and opportunities.

FIGURE 2: OWNERSHIP OF PUBLIC INFRASTRUCTURE BY ORDER OF GOVERNMENT[2]



Source: Infrastructure Canada, 2016

The Need for Better Infrastructure Data

To make sufficient and appropriate infrastructure investments, an understanding of the state and performance of existing assets is required. Robust, consistent data trends can assist governments in identifying the gaps in areas such as the age, the physical condition and the performance of core public infrastructure assets, and make it possible to plan and design effective infrastructure investments.

Currently, there are limited data available at the national level on the state of public infrastructure assets in Canada. Some municipalities, in particular the larger centres, collect data related to their infrastructure investments; however, variations in how and what information is collected limit the ability to aggregate this information to produce a robust national picture. Similarly, federal infrastructure investment data collected by Statistics Canada include some of the information to provide a picture of Canada's infrastructure assets but lack the details required to support modern infrastructure planning.

To help address the data gap, a collective of national industry and municipal associations initiated the Canadian Infrastructure Report Card, a voluntary survey of municipally-owned public infrastructure assets. The 2016 Report Card

Port Lands Project, Toronto, Ontario

The Cherry Street Stormwater and Lakefilling project in Toronto, Ontario contributes to the Port Lands Flood Protection project, providing critical flood protection through innovative, green infrastructure that will transform the industrial area into a vibrant and resilient downtown neighbourhood.

collected data from 120 municipalities, primarily large urban centres, representing just over 50% of Canada's population. [7] At the same time, no data were collected from municipalities in Nunavut or the Northwest Territories, and there was low representation from Yukon and the Atlantic region. [8] Four years prior, a 2012 Report Card was undertaken, but due to a number of distinguishing factors the two reports cards have limited comparative value; the associations note that 2012 and 2016 report cards should be viewed as separate snapshots in time. [9]

There is a need to develop a more comprehensive understanding of the national state and performance of public infrastructure through better data collection and analysis. The development of such a baseline would allow for future trends analysis and comparison which will lead to greater and more informed infrastructure decision-making.

However, even with Canada's limited data, the impacts of under-investment are clear. Traffic bottlenecks in Toronto, Montréal and Vancouver cause commuters collectively to spend the equivalent of more than 10,000 years stuck in traffic every year.[10] In February 2018, 81 long-term drinking water advisories were in place on public drinking water systems on reserves.[11] In 2016, 12.7% of Canadian households were in core housing need, that is, housing which is not adequate, suitable or affordable and the household would need to spend 30% or more of its before-tax income on acceptable housing.[12] Among First Nation households on-reserve, about one-third lived below defined standards of adequacy or suitability.[13] Canada lags behind most developed nations in wastewater treatment, which 13% of Canadians lack.[14] An estimated 35% of Canada's wastewater systems, 29% of Canada's potable water systems and 23% of storm water systems were in fair, poor or very poor condition in 2016.[15]

Innovation in Infrastructure

International experience shows that investments in technologies to make better use of infrastructure can significantly increase productivity. For example, embedded remote sensors and real-time wireless technologies enable assets to become "intelligent" by connecting them with one another, so that structures can "talk" to a central data platform. This allows for remote monitoring that can capture critical performance parameters and provide real-time information on how infrastructure is performing, as well as early warning of potential service disruptions so that they can be more easily addressed, minimizing loss of service.

There is great potential for infrastructure innovation: in design, materials, products, processes and methods used to build infrastructure, as well as in the services or functions it provides, including nature-based solutions. Alternative solutions may derive from new ideas, or from existing ideas not yet routinely used either in Canada or across different asset classes. For example, the transportation sector can do more research, development, pilot testing and deployment to integrate innovations such as driverless vehicles. These innovations have the potential to increase transportation productivity, which would position Canada at the forefront of emerging technologies in the sector. The effective use of technology to make buildings more energy efficient cannot only lower energy costs and mitigate environmental impacts, but also spur innovation, create jobs and help advance Canada's transition to a low-carbon economy. Despite this, many investment decisions tend to favour "tried and true" approaches, which can be a barrier to successfully developing infrastructure capable of meeting the needs of tomorrow.

A key barrier to innovation in public infrastructure is a lack of capacity during the pre-development phase of a project, exacerbated by a lack of data and often short time frames for accessing funding. Many municipalities, small and northern communities in particular, sometimes lack the capacity to adopt innovative planning and development methods, a challenge compounded by a lack of capacity for data and asset management.

ASSET MANAGEMENT

Asset management is a structured way to maintain and improve infrastructure while also collecting data about its use and condition. These data are critical for making sound decisions about how to prioritize future spending, avoid costly infrastructure failures and increase resilience through effective maintenance. As a relatively new discipline, asset management is not uniformly practiced across Canada. The Federation of Canadian Municipalities has noted that while there have been advancements in some Canadian municipalities and provinces, it is still uncommon to find asset management effectively incorporated into strategic management systems.[16] Many medium-sized municipalities and most small municipalities and Indigenous communities do not always have the necessary capacity to introduce asset management. This challenge is even greater in Canada's smallest communities, some of which face high staff turn-over rates and limited access to training. Yet the need for asset management is pressing: in 2016, the second Canadian Infrastructure Report Card found that although some progress has been made, one-third of Canada's municipal infrastructure is in fair, poor, or very poor condition.[17]

Research and development is required to fill the knowledge gaps in how to make smart, innovative and resilient infrastructure that will contribute to sustainability, economic growth, improved performance in key sectors such as construction while also solving major societal challenges, including the need to reduce GHG emissions and enhance the resilience of Canadians and their communities to the impacts of a changing climate. Validation and demonstration of emerging technologies encourages their uptake while lowering the costs, creating economies of scale and supporting competitiveness and innovation.

Private Sector Investment and Alternative Financing Mechanisms

There are opportunities for innovation in the way infrastructure is funded and financed. Fiscal constraints on all governments have increased the interest in exploring private sector investment, ownership options, and alternative financing mechanisms as a means to increase investment in infrastructure.

Public-Private Partnerships (P3s) are one such mechanism. P3s for infrastructure can range from minimal private sector involvement, such as delivering garbage collection services, to comprehensive private involvement in the designing, building, owning, operating and financing of a facility.

Canada is generally regarded as a leader in P3s.[18] PPP Canada, a Crown corporation that ran from 2008–18 to promote adoption of the model, invested over $1.3 billion in 25 large or complex infrastructure projects across the country. PPP Canada — as well as provincial agencies to implement P3s in British Columbia, Ontario, Quebec, New Brunswick, Saskatchewan and Alberta — demonstrated that public sector capacity to manage these complex arrangements is mature. There have been over 200 infrastructure projects delivered through P3 arrangements, representing over $70 billion of capital investment and savings of approximately $1.7 billion compared to traditional procurement approaches.[19] Canada's P3 market is strong and stable, and the Government of Canada continues to support the model as an effective way to build more infrastructure across Canada.

Government measures to promote alternative financing of infrastructure can be implemented by government departments, but more often they are delivered through agencies or arms-length models. Indigenous Services Canada, for example, is working with several Indigenous organizations to explore options for alternative financing of infrastructure. This ranges from pilot funding for individual homeownership tools to long-term financing supported by federal transfer agreements.

To meet infrastructure financing needs, some jurisdictions have developed infrastructure banks. A prominent example is the Nordic Investment Bank (NIB), an international financial institution owned by Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden, which provides loans on commercially sound banking terms with no subsidy. The NIB complements other financing sources and adds value through its long-term financing and status as an international financial institution. Infrastructure UK offers UK Guarantees, used primarily to fund nationally significant, large-scale projects that encourage economic growth. The strong financial credibility of the UK government makes it possible to finance projects unable to access private financing.

At home in Canada, loans and loan guarantees have been used by the federal government to achieve a variety of policy objectives. For example, the Business Development Bank of Canada lends directly to Canadian small- and medium-sized enterprises on a commercial basis, at interest rates commensurate with risk. Similarly, the Canada Small Business Program (Innovation, Science and Economic Development Canada) guarantees portions of a loan obtained by a small enterprise. Federal loan guarantees have been applied to $1.3 billion of debt for the Maritime Link Project, a large-scale infrastructure project that is part of the strategy to address the growing need for renewable energy in Canada's easternmost provinces. The guarantee will lower the costs of borrowing for the proponents, with projected savings of over $1 billion for rate-payers in Newfoundland and Labrador and Nova Scotia.

Project bundling is a potential means of expanding the use of alternative financing. By combining a number of small projects into one large project, the public sector owner can create the critical mass necessary to attract institutional investors, designers and operators. A coordinating body at the provincial or territorial order of government could support smaller communities in bundling projects with other jurisdictions. For example, Indigenous Services Canada has used an innovative bundled approach for the delivery of new or renovated school projects that promotes partnership and collaboration between government, First Nations and industry leaders. The projects allow community members to play a hands-on role in designing their own school.

Another financing approach is attracting increased risk-bearing investment from private sector and institutional investors such as pension funds, infrastructure funds and insurance companies. This builds on the P3 model by having investors assume additional risks related to usage or revenue, which can encourage innovation in meeting infrastructure needs. In recent years, institutional investors have been trying to diversify their portfolios, seeking assets such as large infrastructure projects that provide a stable return on investment over a long period. To date, however, the focus of such institutional investors has been on investing in existing infrastructure assets rather than investing in construction of new assets.

Champlain Bridge, Montréal, Quebec

The construction of the new Champlain Bridge in Montréal, Quebec will provide a sustainable and long-term solution to the evolving transportation needs of the region, and ensure the continuous and safe flow of people and goods.

The current infrastructure environment is framed by the need for strengthened data, the potential for innovation, and the demand for infrastructure financing. Within this context, Canada also faces a number of challenges and opportunities, explored in Section 2, for addressing its infrastructure gap.

2. CANADA'S INFRASTRUCTURE CHALLENGES AND OPPORTUNITIES

Governments support the development and maintenance of infrastructure to ensure that Canadians, particularly the middle class and those working hard to join it, have what they need to grow and prosper. Some assets, like water and wastewater facilities, are necessary for human health. Others, like transportation and communication networks, have tangible impacts on economic growth. The types of infrastructure a community requires depends on many factors, including demographic trends. As work and living patterns change, and as communities grow or contract, what Canadians need to participate in the economy, to engage with others in their community, and to mitigate the effects of disasters exacerbated by climate change, will also change.

The gaps in infrastructure and their effects are felt by Canadian communities grappling with rapidly evolving challenges in global trade, the environment and society. These gaps also make it difficult to take advantage of opportunities presented by these changes.

Furthermore, infrastructure gaps and challenges are felt more keenly by some than by others. For example, Indigenous communities face unique challenges, especially in the context of rapid population growth and existing gaps in even basic infrastructure. This section explores current and future challenges that Canadians face in how they live and work. It is these challenges that the Investing in Canada plan will address to help secure a prosperous future for all Canadians and support reconciliation with Indigenous Peoples.

Global Challenges and Opportunities

CLIMATE CHANGE

Canada's climate is changing. Temperatures in Canada have been increasing at roughly double the global average; in Canada's North, they are rising at roughly three times the global average.[20]

Increased temperatures have brought with them: longer heat waves; more intense, frequent and extreme storms; permafrost degradation; diminishing sea ice and snow cover; and rising sea levels.

Climate change and extreme weather events threaten existing infrastructure across the country, impacting its effectiveness, lifespan, cost, maintenance, rehabilitation and renewal. For example, some older water systems cannot process an increase in precipitation, which increases the risk of flooding.[21] Climate-related infrastructure failures can threaten health, safety and social well-being, disrupt essential services and economic activity, and often require expensive repair or replacement. For example, one of Canada's costliest disasters — the June 2013 floods in Alberta — resulted in an estimated $6 billion in damages and recovery costs, saw 1,000 km of roads destroyed, caused hundreds of bridges and culverts to wash out, and forced an 11-day shut-down of two main rail lines. Some areas are at greater risk than others: coastal regions and the North are particularly vulnerable to the effects of rising temperatures such as thawing permafrost and higher sea levels.

Rising GHG emissions continue to be a serious concern. Under the Paris Agreement, Canada has set an economy-wide target to reduce GHG emissions by 30% below 2005 levels by 2030.[22] If no further measures are taken by the federal, provincial or territorial governments, Canadian GHG emissions are projected to reach 722 megatonnes (Mt) in 2030, 38% higher than Canada's Paris Agreement target of 523 Mt.[23]

The technology for achieving this target is available but deploying it will require coordinated action. For example, the transportation sector is Canada's second largest source of GHG emissions (after the oil and gas sector) accounting for 24% or 170 Mt in 2015.[24] The wide-scale deployment of electric and alternative fuel vehicles would substantially reduce emissions. At the same time, however, challenges to deployment remain, including the lack of an extensive recharging and refuelling network.

The estimated cost of responding to climate impacts in Canada — including impacts from extreme weather and other climate-related natural disasters — is projected to grow from an annual average of $5 billion in 2020 to $21–$43 billion by 2050.[25] The Parliamentary Budget Officer forecasts that over the next five years the Government of Canada can expect weather-related disasters to cost the federal government an average of $902 million per year.[26]

Disaster mitigation actions provide significant return on investment. Benefit-cost ratios for flood prevention measures in Australia, the United States and the United Kingdom are 3:1, 4:1 and 5:1, respectively. In Canada, $63.2 million invested in the Manitoba Red River Floodway in 1960 has saved an estimated $8 billion in potential damage and recovery costs. [27] Ensuring assets are designed, built, operated and maintained in consideration of current and future climate risks will reduce vulnerability, enhance resilience and help protect Canadians and their communities.

CHANGING GLOBAL TRADE PATTERNS AND TRANSPORTATION NEEDS

Over 60% of Canada's gross domestic product (GDP) is tied to international trade.[28] The state of Canada's trade infrastructure directly affects the ability of Canadian businesses to compete in global commerce.

Shifting global trade and production patterns, increased global demand for Canadian commodities, larger vessels requiring less frequent port stops, and opportunities from new trade agreements exert and shift pressure on existing infrastructure and trade corridors. Regions of high economic growth (e.g., Asia), are distant, which increases the complexity, time and risks associated with trade connectivity. Canadian trade and exports continue to expand, which increases the demand on transportation infrastructure capacity and performance.

For all these reasons, current trade and transportation infrastructure is not sufficient to meet the needs of the future. A 2015 report by the International Transport Forum estimates that by 2050, international freight volumes will quadruple; the North Pacific will overtake the North Atlantic as the world's most important trading route; and shifting trade patterns will increase average shipping distances by 12%.[29] Congestion and bottlenecks could put Canadian shippers at a disadvantage compared to international competitors able to deliver more cost effectively and quickly. The federal government's strategies for attracting

Cascumpec Bridge and Collector Roads, Alberton, Prince Edward Island

Replacement of the Cascumpec Bridge in Alberton, Prince Edward Island improves driver safety and connects farms and wharves to markets.

foreign direct investment would also be undermined as investors gravitate towards countries with more efficient trade systems. With other countries looking at investing substantially in their domestic transportation infrastructure, Canada is at risk of falling behind should it fail to make its own investments.

In addition, strategies to retain and attract new foreign direct investment must ensure that supply chain access remains reliable through multiple transportation channels and on cost-competitive terms. The Advisory Council on Economic Growth recognized that Canada must expand its freight transportation capacity.[30] Canada's current capacity constraints include congestion along some of the nation's most significant trade corridors. The growing volumes of containerized and bulk cargo at major ports, especially on the west coast, place pressure on connected rail and road systems. To curtail congestion, inefficiencies, and declining performance, capacity needs to be increased.

Diverse Needs: Cities and Small Communities

Canada's municipalities and Indigenous communities are diverse and have differing needs and capabilities.

The demographics, size and geographic location of a community significantly affect its needs. The Canadian population continues to grow, increasing 5% from 2011 to 2016; however, growth is not equal across Canada. Growth rates were higher between 2011 and 2016 in northern and western Canada, with Nunavut and Alberta leading with 12.7% and 11.6% growth respectively. None of the Atlantic provinces, on the other hand, had population growth over 2%; and New Brunswick had a slight net decline.[31] Among the 25 municipalities located outside major cities with the highest rates of declining populations, 17 were in the Atlantic provinces or Quebec. Overall, one in four Canadian municipalities had a population decrease between 2011 and 2016.[32]

CITIES

82% of the Canadian population live in large- and medium-sized cities,[33] and these cities continue to grow. For example, between 2011 and 2016, Calgary and Edmonton grew 14.6% and 13.9% respectively.[34] The three biggest metropolitan areas in the country — Toronto, Montréal and Vancouver — are now home to more than one-third of all Canadians, with a combined population of 12.5 million.[35] Population growth, especially rapid growth, can increase congestion, population density and demand for services, making infrastructure needs more complex.

Urban congestion can have significant economic and trade impacts. Based on 2006 data, Transport Canada estimates that congestion in Canada's nine largest cities costs between $3.1 and $4.6 billion annually.[36] Other estimates are even higher: the C.D. Howe Institute estimates the economic, social and health costs of congestion in Toronto alone at $7.5 to $11 billion annually,[37] while the Toronto Board of Trade estimates that the direct annual costs of congestion for the Greater Toronto and Hamilton areas could rise to $15 billion by 2031.[38]

The liveability of cities is important for Canada's ability to attract and retain trade, businesses and talent, which together impact Canada's global competitiveness. From 2009 to 2013, more than half of Canada's GDP was produced in the six census metropolitan areas with a population of 1 million or more — Toronto, Montréal, Vancouver, Calgary, Edmonton, and Ottawa–Gatineau.[39] Toronto accounts for nearly one-fifth of Canada's entire economic output, which is larger than that of every province except Ontario and Quebec.[40]

Cities are home to about half the global population and produce 70% of carbon emissions.[41] Acknowledging this challenge, many Canadian cities have positioned themselves on the front line in efforts to combat climate change. Vancouver, for example, is implementing its "Greenest City Action Plan," which has long-term goals such as eliminating the city's dependence on fossil fuels.[42]

Investments in public transit can reduce congestion, improve the livability of cities, reduce air pollutants and under certain circumstances contribute to reducing GHG emissions. However, public transit infrastructure investments are also capital intensive; the Canadian Urban Transit Association (CUTA) survey of infrastructure needs, which drew on information from its members, estimated capital needs of $56.6 billion for 2014–18. While the majority of these needs are funded, unfunded new construction and expansion needs were estimated at $16.8 billion and unfunded rehabilitation and replacement needs were estimated at $1.6 billion.[43]

SMALL COMMUNITIES

Small communities make significant contributions to Canadian society and the economy and they too face infrastructure gaps. In fact, many small communities face unique challenges of their own due to their size, distance to markets, and changing demographics, all of which can make it more difficult to ensure basic infrastructure needs are met. Construction, operation and maintenance costs can be high due to the lack of economies of scale, and small communities tend to have a small tax base that limits the capital available for infrastructure. Local administrations in small communities may also face capacity challenges when developing their own projects or collaborating with other communities to gain efficiencies and cost savings.

In addition, Canada's small communities face changing demographics and other challenges. For example, they often lag behind urban areas in access to broadband Internet connectivity, with the gap growing as broadband speeds increase. A lack of broadband can limit access to services and information and can make economic growth difficult. Often these communities lack the density to support private sector investment.

Kenojuak Cultural Centre, Cape Dorset, Nunavut

The construction of the new Kenojuak Cultural Centre and Print Shop in Cape Dorset, Nunavut provides a space where artists can work and visitors can learn about the local heritage.

INDIGENOUS COMMUNITIES

Sustainable infrastructure helps Indigenous people participate more fully in Canada's political, social and economic development but for many Indigenous communities, transformational change is needed to meet basic infrastructure needs while existing infrastructure is repaired and improved.

Since 2006, the Indigenous population in Canada has grown at over four times the rate of the non-Indigenous population. The median age of the Indigenous population was 29.1 years in 2016 — more than a decade younger than the non-Indigenous population (41.3 years).[44] Many Indigenous communities are struggling to accommodate this growth with inadequate basic infrastructure such as roads, bridges and water treatment systems.

Additional challenges and pressures include:

- **Housing availability:** 24.2% of First Nations people, 11.3% of Métis and 26.2% of Inuit lived in a dwelling that was in need of major repairs in 2016. Overcrowding is also an issue, and it contributes to housing deterioration.[45]
- **Deteriorating water and wastewater systems:** Although progress has been made in improving water and wastewater systems on-reserve, much more needs to be done. As of February 2018, 81 long-term drinking water advisories were in effect on public drinking water systems on reserves.
- **Inadequate waste management:** Improper waste management on-reserve results in contaminated sites, which have a significant negative impact on the environment, human health and safety as well as secondary impacts on economic development and effective land use.[46]

NORTHERN COMMUNITIES

Northern communities are affected by many of the same issues as small and Indigenous communities, in addition to their own unique challenges. Nearly 300 remote communities, most in the North, have no access to the continental electricity grid. Most of these communities rely on fossil fuels for electricity generation.[47]

Communities are investing in cleaner energy, but for larger renewable systems that displace use of diesel, technical, financial and policy challenges need to be addressed. In northern communities connected only to local grids, fossil fuel is usually still the most effective option and in many cases, the need for investment is urgent. For example, in 2014–15, Qulliq Energy reported that half of Nunavut's communities had power plants over 40 years old — long past the end of their useful life.[48]

The North has unique challenges regarding trade and transportation infrastructure. For many northern communities, year-round access is possible only by air transport, which is vital for travel, resupply of perishable foods, as well as access to health care, law enforcement and other public services. Winter roads and summer marine services are relied upon for resupplying other essential needs that cannot be feasibly or economically transported by air, including many household goods, vehicles, fuel, construction equipment and materials.

The challenges of a difficult climate and season-dependent access lead to logistical and procurement challenges, limited competition, and design and project management complexity, resulting in high costs for building infrastructure. Moreover, the challenges posed by the North's limited transportation systems are expected to worsen with climate change while the need for increased food and energy security, natural resource extraction and tourism will require more transportation infrastructure.

Investments in northern infrastructure are clearly needed,[49, 50, 51] particularly in ground, air and marine transportation infrastructure, to protect the safety of travellers and communities while laying the foundations for economic growth.

Infrastructure and Social Development

Infrastructure is essential to the delivery of services required to build inclusive communities where all people can participate and contribute to society.

HOUSING AND HOMELESSNESS

Across Canada, homelessness affects a diverse cross-section of the population and the communities in which they reside. In 2014, an average of 13,857 Canadians slept in an emergency shelter on any given night, accounting for over 90% of Canada's 15,000 shelter beds.[52]

Additionally, in 2016 over 1.7 million Canadian households (12.7%) were in core housing need, meaning that their housing was either in poor condition, crowded or unaffordable, and the family was unable to access acceptable alternative housing in their community. [53] For 76% of Canadian households considered to be in core housing need, the main challenge is affordability.[54] Indigenous Peoples are disproportionately affected by poor housing; for example, Indigenous Peoples are 10 times more likely to use a shelter than non-Indigenous people.[55]

Carcross/Tagish First Nation Learning Centre, Carcross, Yukon

The construction of the Carcross-Tagish First Nation learning centre in Carcross, Yukon has become a central gathering place for the community to connect with each other, learn and grow.

EARLY LEARNING AND CHILD CARE

Quality early learning and child care systems play an important role in promoting the social, emotional, physical and cognitive development of young children and can support positive lifelong benefits. Yet only 1 in 4 children in Canada have access to regulated early learning and child care. [56] Affordability also remains a concern for many families. The lack of affordable, quality child care can also limit the ability of parents to participate in the labour market. Various studies have found that creating affordable child care spaces in Quebec enabled some 70,000 mothers to join the workforce.[57]

Socio-economic challenges that can impact children have a disproportionate effect on Canada's young and fast-growing Indigenous population. Access to culturally appropriate early learning and child care is a critical building block for the success of Indigenous children and families. However, as of 2009, less than 18% of Indigenous children had access to these programs.[58]

COMMUNITY, CULTURE AND RECREATION INFRASTRUCTURE

Canada's culture and recreation infrastructure is in critical need of repair and refurbishment. The Canada Infrastructure Report Card determined that sport and recreation facilities in the public realm are in the poorest condition of all asset categories surveyed, with 19% of sport and recreation infrastructure rated in poor or very poor condition, which negatively impacts the functioning of the facilities. The estimated replacement cost of facilities in poor and very poor condition is $9 billion.[59]

With the fastest growing population in Canada, the need for cultural and recreational infrastructure is especially felt in Indigenous communities.

PUBLIC TRANSIT'S ROLE IN SOCIAL DEVELOPMENT

To participate in their communities, Canadians need reliable and reasonably priced public transit that connects them to hubs of commerce, recreation and work. Public transit infrastructure investments can provide better access to housing, shelters, early learning and child care, as well as to cultural, sport and recreation infrastructure. Transit systems are struggling to meet existing demands and increasing urbanization is continually adding more pressure.

ACCESSIBILITY

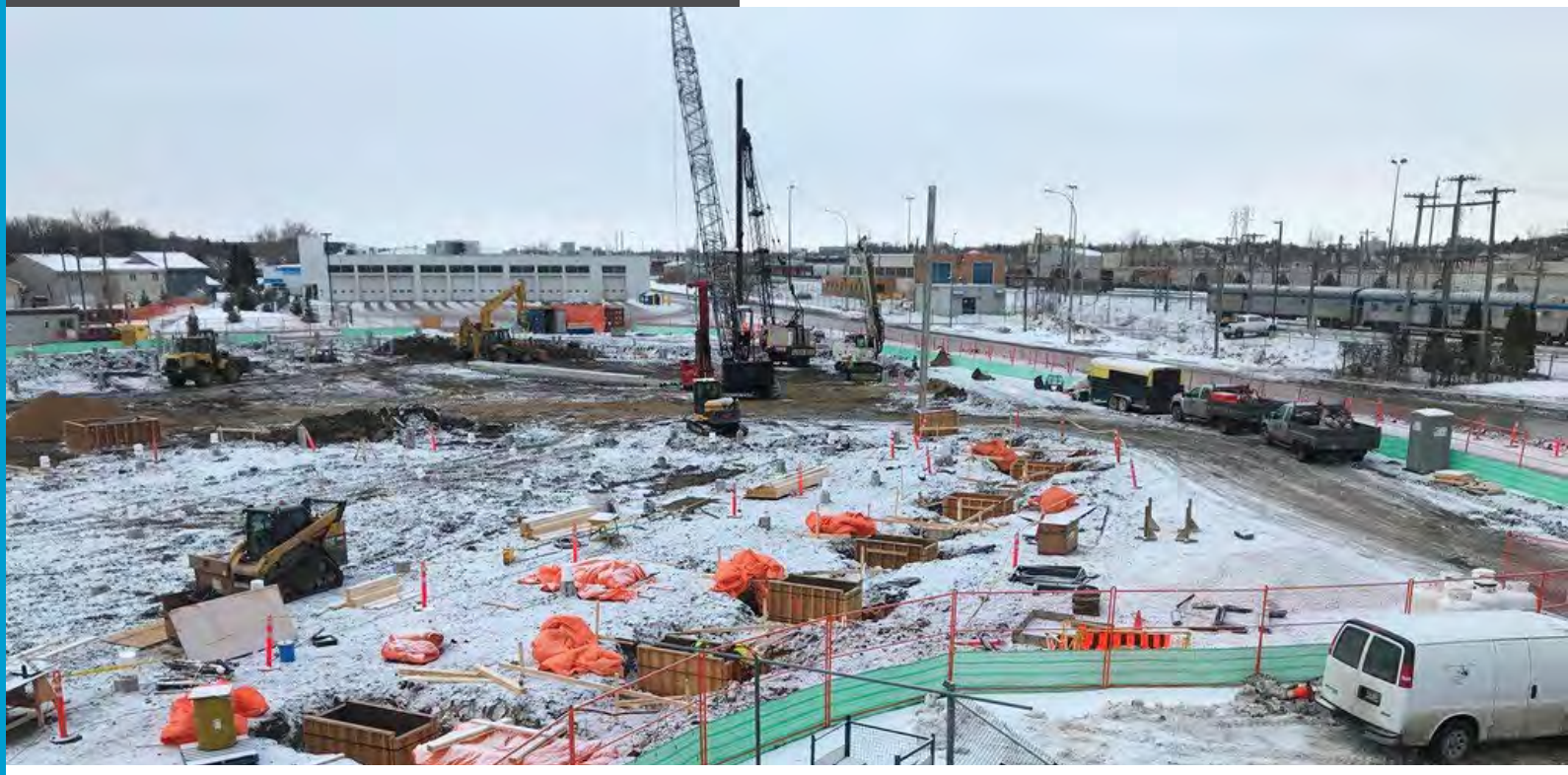
Due to a variety of barriers, persons with disabilities are more likely to face exclusion, poverty and isolation. They have almost twice the rate of poverty of persons without disabilities, and nearly 60% of working age adults with disabilities are unemployed or out of the labour market. [60] Physical barriers in the built environment can also exacerbate economic and social exclusion. However, properly designed infrastructure can address some of these unique challenges by increasing access to transportation, public spaces and buildings.

A Need for Action

Facing a growing infrastructure gap, and pressures of climate change, trade patterns, diverse community needs and demands for essential social services, the time for transformational investment in Canada's infrastructure is now.

Transit Garage Upgrades, Winnipeg, Manitoba

Upgrades to the public transit facilities in Winnipeg, Manitoba will increase the reliability, safety, accessibility and efficiency of the City's transit system, improve its environmental outcomes, and contribute to a greener local environment.



3. INVESTING IN CANADA: A COMPREHENSIVE, LONG-TERM PLAN

Through the Investing in Canada plan, the Government of Canada is making historic new investments in infrastructure to build the cities of the 21st century and provide communities across the country with the tools they need to prosper and innovate. The Investing in Canada plan provides over $180 billion of federal infrastructure investment over 12 years — more than doubling existing funding.

The Plan includes $92.2 billion for permanent funding such as the Gas Tax Fund and for funding committed prior to 2016 such as the New Building Canada Fund. Details on these established programs are provided in Annex A.

The Plan also includes $95.6 billion in new funding for infrastructure programs. Sections 3 and 4 detail how the Government will determine where and how to invest this new funding, the implementation approach and how progress will be measured.

The Minister of Infrastructure and Communities is responsible for coordinating the Plan across the federal government and ensuring that the outcomes of infrastructure investments are reported to Canadians in an open and transparent manner.

The Investing in Canada plan considers the unique needs of urban, rural, remote and Indigenous communities while also addressing national priorities. The Plan builds on the Government's robust partnerships with provinces, territories, municipalities and Indigenous communities. From coast-to-coast-to-coast, Canadians will see the direct impacts of infrastructure investments — including more affordable housing, improved air and water quality and greater resilience to the impacts of a changing climate.

A Bold Vision for an Inclusive Country: Three Key Objectives

The Government of Canada is investing in Canadians' well-being through a focus on three key objectives that shape the direction, priorities and approach of the Plan:

- Generate long-term economic growth to build a stronger middle class;
- Improve the resilience of communities and transition to a clean growth economy; and
- Improve the social inclusion and socio-economic outcomes of Canadians.

GENERATE LONG-TERM ECONOMIC GROWTH TO BUILD A STRONGER MIDDLE CLASS

Investments in 21st century infrastructure will strengthen Canada's economy. Economic change — both at home and around the world — presents incredible opportunities for middle class Canadians and those working hard to join it.

Competing globally for trade and investment will require a sustained effort to ensure Canadian trade corridors are efficient. New opportunities in emerging markets, including the North, require investments in transportation infrastructure such as highways, ports and airports.

Cities are drivers of economic growth. To compete and prosper, Canadian cities need to be great places to live, work and invest. To manage population growth and increasing urban density, Canada's cities need high quality and accessible transit, housing and early learning and child care.

For smaller Canadian communities, including Indigenous communities, investment and growth can be supported with basic infrastructure as well as broadband Internet connectivity, energy security and new trade corridors.

IMPROVE THE RESILIENCE OF COMMUNITIES AND TRANSITION TO A CLEAN GROWTH ECONOMY

To ensure that Canada's communities are healthy and productive places to live, now and in the future, Canada is investing in sustainable solutions. A healthy environment and a strong economy go hand-in-hand. Green infrastructure investments have the potential to help achieve GHG reductions across various sectors and can drive innovation and growth by increasing technology development and adoption. This will ensure Canadian businesses are competitive in the global low-carbon economy.

Disasters related to climate change are increasing in scale and severity. Investments in infrastructure specifically designed for climate impacts, including innovative nature-based solutions, enhance the resilience of Canadian communities while continuing to safely provide essential services. By accounting for the effects of climate change in infrastructure development, communities will be better prepared to respond to and recover from severe weather events.

The Investing in Canada plan supports delivery of the Pan-Canadian Framework on Clean Growth and Climate Change, Canada's plan to meet its GHG emissions reduction target, grow the economy, and build resilience to a changing climate.[61]

Light Rail Transit Stage 2, Ottawa, Ontario

The expansion of the Light Rail Transit system in Ottawa, Ontario provides more urban transit options for residents and visitors, shortening commute times and making travel across the city more efficient.

INFRASTRUCTURE AND CLIMATE CHANGE

Infrastructure underpins all major sources of GHG emissions: energy, transportation, industry, land use and the built environment. This is why climate change considerations need to be incorporated into infrastructure planning, design and investment decisions. Indeed, in September 2016 the House of Commons adopted a Private Member's Motion committing the Government to analyze the impacts of infrastructure funding proposals on GHG emissions and prioritize investments in proposals which help mitigate the impacts of climate change.

The Investing in Canada plan makes it clear that federal infrastructure investments should reduce or minimize GHG emissions and also enhance resilience to the impacts of climate change. Infrastructure Canada has developed a climate lens which will ensure that project proponents consider and evaluate GHG emissions reduction and climate resiliency when they seek funding through the Investing in Canada Infrastructure Program, to be delivered through integrated bilateral agreements between the federal government and the provinces and territories (Annex C), the Disaster Mitigation and Adaptation Fund, and the Smart Cities Challenge. The climate lens will provide insight into the climate impacts associated with individual projects, and encourage project planners to make choices consistent with shared federal, provincial and territorial objectives articulated in the Pan-Canadian Framework for Clean Growth and Climate Change — including a commitment to reduce Canada's GHG emissions by 30% below 2005 levels by 2030. To support this target, the Investing in Canada Infrastructure Program bilateral agreements with the provinces and territories have established a national reduction target of 10 Megatonnes (Mt) per year in 2030.

The climate lens requirement will incent behavioral change in project proponents and increase the consideration of climate impacts into the long-term planning of infrastructure projects to further the implementation of Canada's mid-century goals of a clean growth low-carbon economy. By systematically evaluating each project's GHG emissions and/or resilience to the impacts of climate change, project planners will become increasingly familiar with key considerations, risks, and mitigation strategies. This will facilitate better decision-making in the long term and ensure that future infrastructure projects will be designed to produce meaningful action in mitigating GHG emissions and increase the resiliency of communities. Assessments prepared under the climate lens will also enable the Government and proponents to communicate the GHG emission reductions and adaptive measures of federally-supported infrastructure projects to Canadians to show the efforts to tackle climate change.

Transport Canada is also applying a climate lens to its first call for proposals under the National Trade Corridors Fund. The goal is to obtain information on the degree to which projects are taking climate change resiliency into consideration, and on the anticipated impacts on GHG emissions of proposed projects.

IMPROVE SOCIAL INCLUSION AND SOCIO-ECONOMIC OUTCOMES FOR ALL CANADIANS

Canada's strength lies in its diversity. Future success depends on building an economy and society that are inclusive of all Canadians. As the Plan progresses, all Canadians — including women, children, seniors, newcomers to Canada and persons with disabilities — will benefit and play a role in nation-building.

The Investing in Canada plan will contribute to building communities where all Canadians have the opportunity to succeed. It will do this by improving access to quality affordable housing, shelters, early learning and child care, cultural, sport and recreation infrastructure and reliable public transit. Respecting the Government's nation-to-nation, Inuit-to-crown, government-to-government relationship with Indigenous Peoples, the Plan addresses pressing needs in Indigenous communities. Investments will also improve physical accessibility and safety for persons with disabilities.

Outcomes

To allow these programs to be viewed collectively and understood as a whole, departments will track how programs are achieving the following seven outcomes:

1. Rate of economic growth is increased in an inclusive and sustainable way
2. Environmental quality is improved, GHG emissions are reduced and resilience of communities is increased
3. Urban mobility in Canadian communities is improved
4. Housing is affordable and in good condition and homelessness is reduced year over year
5. Early learning and child care is of high quality, affordable, flexible and inclusive
6. Canadian communities are more inclusive and accessible
7. Infrastructure is managed in a more sustainable way

The Government will report publicly on progress towards these outcomes through a series of indicators measuring the long-term impacts of new investment on the quality of life of Canadians, as well as short- and medium-term progress on implementation, program outputs, and overall trends regarding the use and state of public infrastructure in Canada. Indicators used to measure the success of the Plan are selected based on the extent to which they can demonstrate change over time towards the seven outcomes.

The Government measures progress on these indicators against existing data sources where available, and by developing new data sources. For indicators where data are currently unavailable, departments are developing data strategies to establish baseline information; for example, Canada's Core Public Infrastructure (CCPI) survey, described below in "Addressing the data gap".

Annex B lists example indicators for each outcome; these indicators will be refined as enhanced data becomes available. Results will be reported to the public through **Canada.ca/results** and through the website of **Infrastructure Canada**, the lead department for reporting on the Plan.

Five Principles

The Investing in Canada plan is built on five principles:

1. Partnership
2. National leadership
3. Evidence-based decision-making
4. A focus on outcomes
5. Inclusivity

1. PARTNERSHIP

Stronger relationships among the federal government, provinces, territories, municipalities and Indigenous communities are essential to deliver on the outcomes of the Plan.

Each jurisdiction has distinct responsibilities for infrastructure and each has a unique role to play in the Investing in Canada plan. Transformation requires well-planned and coordinated investments at the local, regional and national levels.

Strong partnerships respect local expertise and do not try to force a one-size-fits-all solution on Canada's diverse communities. Local needs vary considerably across Canada and local governments are best placed to know what their communities need, and how to find the right solutions. Cities have different infrastructure needs than rural communities, which have different needs than communities in Canada's North. Climate change impacts, demographics, and economic sectors with potential for growth differ by jurisdiction and community.

INVESTING IN INDIGENOUS COMMUNITIES

Resolving past injustices takes time and can only be achieved with sustained collaboration with Indigenous partners. To advance reconciliation and shared economic interests between Canada and all Indigenous Peoples, the Investing in Canada plan makes unprecedented investments in the infrastructure that is most important to Indigenous communities, such as new and renewed housing, clean drinking water and community infrastructure such as roads and wastewater systems, as well as community, culture and recreational facilities, all of which are essential to healthy, safe and prosperous communities.

While Indigenous communities own and operate their infrastructure and are responsible for managing projects to renovate or build new infrastructure, it is key for Canada to continue to work with Indigenous communities to support adequate and sustainable infrastructure.

As such, in Budget 2016, the Investing in Canada plan committed $3.4 billion over five years, beginning in 2016–17, to support Indigenous community infrastructure and improve the socio-economic conditions of Indigenous Peoples.

Starting in 2018-19, Budget 2017 committed infrastructure investments of more than $4 billion over 10 years through the Investing in Canada plan to build and improve housing, water treatment systems, health facilities, and other community infrastructure in partnership with Indigenous Peoples.

The current and on-going investments will lay the foundation for a long-term investment strategy in Indigenous community infrastructure, in order to build healthy, safe and prosperous communities. In addition to the dedicated programs that provide funding exclusively for Indigenous communities, many other Investing in Canada plan programs include broad eligibility parameters to ensure that Indigenous communities across the country have access to funding.

For example, under the Investing in Canada Infrastructure Program (Annex C) eligible Indigenous recipients will include First Nation Band Councils; signatories of modern treaty and self-government agreements; and other Indigenous governments, including Métis settlements and Inuit communities, as well as recognized Indigenous organizations such as national Indigenous organizations and not-for-profit organizations. Under this Program, the federal government provides a funding contribution of 75% for projects with Indigenous recipients. In addition, projects with Indigenous recipients would be allowed to obtain the remaining 25% from other federal sources. Total government funding would not exceed 100% of total eligible expenditures. Further, a minimum investment of $150 million will be made to support community, culture and recreation projects that target outcomes for urban Indigenous Peoples.

Greater Saint John Field House, Saint John, New Brunswick

The construction of the Greater Saint John Field House in Saint John, New Brunswick will provide residents with year-round access to sporting activities and allow the region to welcome larger-scale sporting events.

Credit: Murdock Boyd Architects

SUPPORTING MUNICIPAL PRIORITIES

Municipalities own 60% of the infrastructure in Canada[62] and are vital partners of the Government of Canada in delivering the Investing in Canada plan. Several elements of the Plan directly support municipalities in building, managing and maintaining their infrastructure. These elements include:

Support for municipal projects: The project approval process for the Investing in Canada Infrastructure Program administered by Infrastructure Canada (Annex C) will include a review to ensure a fair balance of municipal and provincial projects for all investment streams. Further, the federal contribution on municipal projects, previously 33% of costs, has increased under the Plan to: 50% for public transit rehabilitation projects and rural and northern projects; 60% for municipalities with populations under 5,000 in provinces for rural and northern projects; and 40% for all other projects.

Public transit funding allocation: Long-term public transit funding is allocated to transit systems through an equitable formula, ensuring that municipalities have predictable and long-term funding to manage and expand their transit systems.

Support for asset management: The first phase of the Investing in Canada plan included two programs administered by the Federation of Canadian Municipalities that provided grants to municipalities to develop their asset management capacity and to plan for the effects of climate change.

Smart Cities Challenge: This initiative will directly fund winning communities to enable them to test innovative ideas for solving pressing social issues.

2. NATIONAL LEADERSHIP

The Government of Canada believes that all of Canada's diverse communities will benefit from increased and sustained investment in infrastructure. In addition to supporting local priorities that contribute to the Investing in Canada plan outcomes, the Government is taking a stronger leadership role on key national priorities by, for example, building networks that cross jurisdictions and funding large disaster mitigation projects across regions.

3. EVIDENCE-BASED DECISION-MAKING

Though sound decisions are informed by strong evidence based in research and data, Canadian infrastructure decision-makers are currently faced with a substantial infrastructure data gap. The Investing in Canada plan includes initiatives to develop better data and to build capacity in communities for infrastructure planning and asset management, and has flexibility to adapt to new data as it becomes available. The Plan also includes funding for collecting and analyzing new data on the state of Canada's public infrastructure.

4. A FOCUS ON OUTCOMES

By taking an outcomes-based approach to the Investing in Canada plan, the Government has set clear goals on how to address major issues facing Canadians. The Plan's progress will be assessed against expected outcomes. Local communities have the flexibility to determine how best these outcomes can be accomplished within a coordinated federal approach to infrastructure investment.

5. INCLUSIVITY

Canada's investments in infrastructure will help ensure continued growth for the middle class and for those working hard to join it. The Plan seeks to leverage infrastructure investments to address socio-economic inequality, understanding that certain populations and groups face disadvantages and have unique needs. Under the Investing in Canada plan, funding will be targeted to communities in which investments are needed the most.

COMMUNITY EMPLOYMENT BENEFITS

Projects supported by the Investing in Canada plan provide an opportunity to promote increased employment opportunities for a broad range of Canadians. Through the Community Employment Benefits initiative for larger infrastructure projects, the Government of Canada will complement efforts across Canada to attract and retain diverse workers in infrastructure-related industries like construction, as well as broader federal employment initiatives like the Aboriginal Skills and Employment Training Strategy and the Veterans Education and Training Benefit.

The Community Employment Benefits initiative will focus on providing employment and/or procurement opportunities for: apprentices; Indigenous Peoples; women; persons with disabilities; veterans; youth; newcomers to Canada; small- and medium-sized enterprises; and social enterprises. Provinces and territories will establish specific targets for each project, allowing for flexibility to consider various factors such as complementarity with existing local and regional employment initiatives or local labour market dynamics. Results achieved against the project targets will be reported on annually.

GENDER-BASED ANALYSIS PLUS

Gender-Based Analysis Plus (GBA+) has helped identify ways to ensure that infrastructure investments benefit all Canadians. GBA+ is an analytical tool that measures the impact of legislation, policies and programs on diverse groups of Canadian women and men. The "plus" in GBA+ incorporates a range of intersecting identity factors, including age, disability, education, language, sexual orientation, culture, geography, ethnicity, race, religion, and income. Each of these factors influences vulnerability to infrastructure gaps, which is why it is important to include a GBA+ perspective on the impacts of infrastructure investments.

Infrastructure investments are an optimal means for addressing inequalities. For example, investments in social infrastructure, such as early learning and child care, make it easier for parents, particularly mothers, to return to the workforce. Investments in public transit that increase service frequency, reliability, accessibility and safety can reduce social isolation and improve access to economic opportunities for those who rely on public transit the most, including women, low-income earners, persons with disabilities, recent immigrants and seniors. [63]

Investments in climate change mitigation and adaptation infrastructure can improve the health and resiliency of communities, which will also have a significantly positive impact on those most affected by climate change — women, northerners and Indigenous populations in remote locations. Canadians of different income levels have different capacities to adapt and respond to climate change. Low income households, which disproportionately include single mothers, are more vulnerable to the effects of climate change such as negative health impacts and extreme weather events. [64] They also have limited financial resources to cope with relocation or evacuation orders, or to respond to increased food costs. [65] Investments in low-emission and climate resilient green infrastructure are expected to enhance outcomes, reduce economic hardship, and support healthier, safer and more comfortable environments for isolated and northern populations, as well as Indigenous women and men.[66]

Source: Status of Women Canada, 2018

UNIVERSAL DESIGN

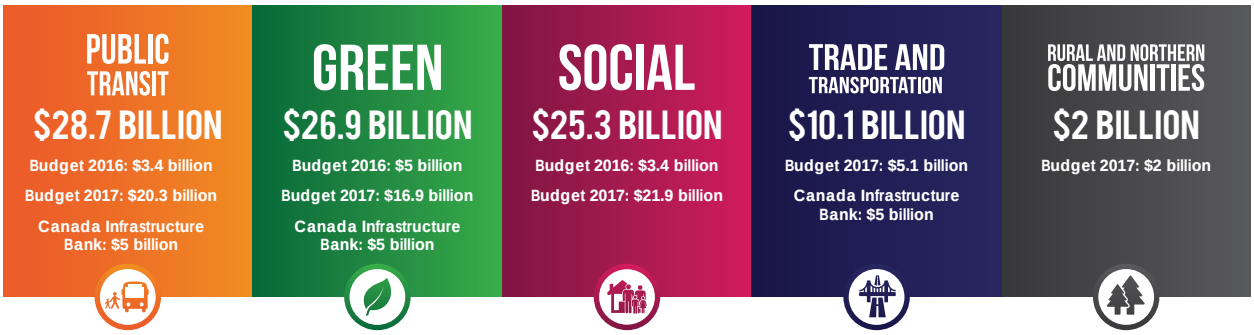
Well-designed spaces and systems meet the needs of everyone who use them. This principle is embodied in the concept of Universal Design. According to the Centre for Excellence in Universal Design, "Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability". By supporting the use of Universal Design in Canada's infrastructure, the Government will support inclusive, accessible communities where all Canadians have the opportunity to participate and succeed.

OFFICIAL-LANGUAGE MINORITY COMMUNITIES

Investments in infrastructure can enhance the vitality of the English and French linguistic minority communities in Canada. All communities are built on a foundation of infrastructure: clean water, a green economy, vibrant cultural and community spaces, broadband Internet connectivity and reliable year-round transportation set the conditions for all communities across the country to thrive. In this way, the Plan's investments will contribute to the essential infrastructure of Official-Language Minority Communities (OLMCs).

In addition, the government will also support the unique needs of Official-Language Minority Communities through a targeted Community Educational Infrastructure initiative that invests in school settings to create spaces where local official-language minority groups can promote their language and culture.

FIGURE 3: INVESTING IN CANADA PLAN FUNDING STREAMS



Investment Streams

Investing in Canada plan investments are directed through five funding streams aimed at achieving the Plan's objectives and outcomes: public transit, green infrastructure, social infrastructure, rural and northern communities, and trade and transportation (Figure 3). The Key Investments section (Section 4) details the funding for each stream.

PUBLIC TRANSIT

By improving the capacity, quality, safety and accessibility of public transit infrastructure throughout Canada, the Plan will reduce urban congestion and increase the proportion of Canadians who use transit and active forms of transportation to access jobs, education, health care and social activities. By taking national leadership to support local priorities, the Plan will also support the transition to a low-carbon economy, reduce air pollution, and under certain circumstances contribute to reducing GHG emissions.

Bike Share, Toronto, Ontario

Upgrades to the Bike Share Toronto system in Toronto, Ontario enhance downtown Toronto's public transportation network, and promote healthy lifestyles through environmentally friendly commuting options.

ACTIVE TRANSPORTATION

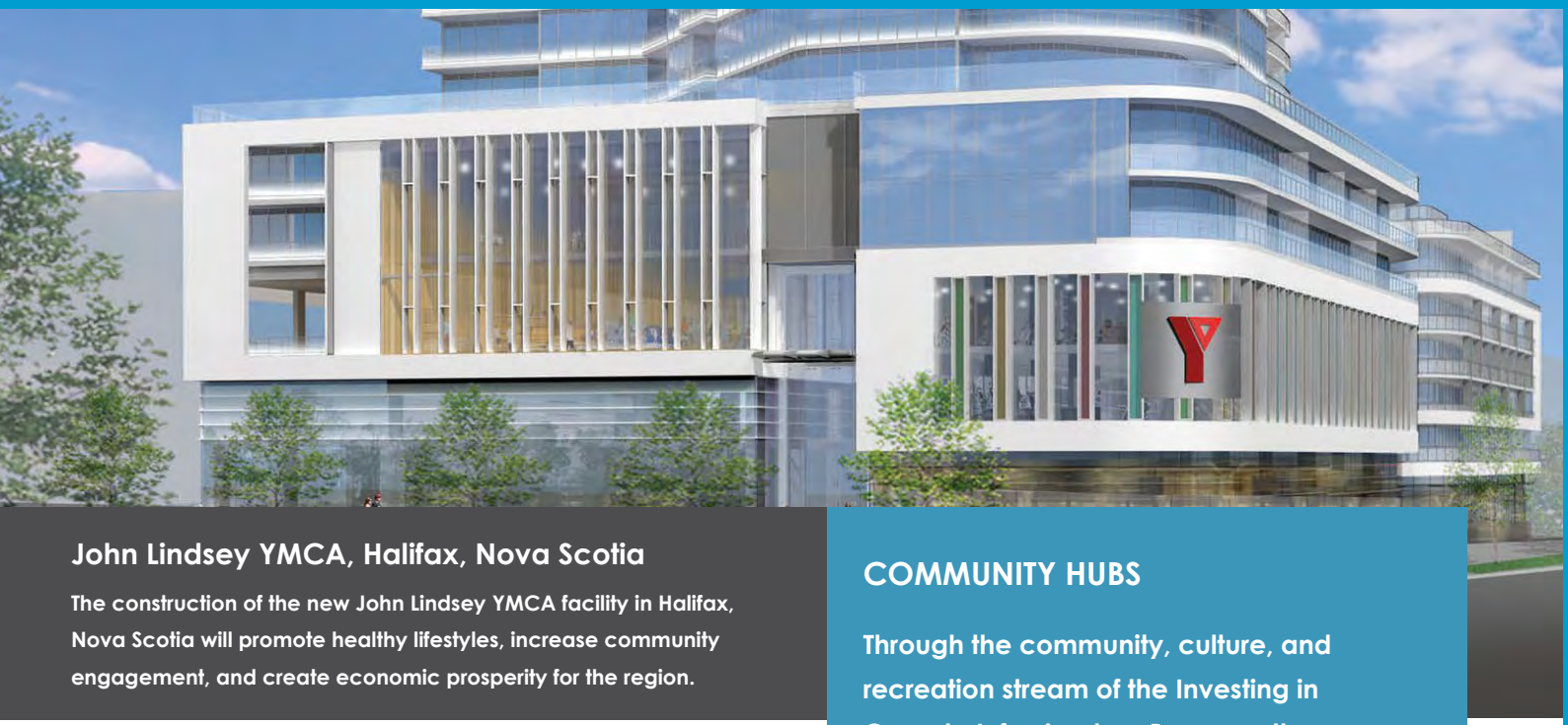
Canadians are looking for more options to get to and from work, and to other destinations like schools and stores. Increasingly, they are choosing active transportation such as walking or cycling, instead of using a motor-powered vehicle. Active transportation brings benefits to public health, the environment and sustainability, economic considerations and quality of life.

The Investing in Canada plan encourages investments in active transportation infrastructure, such as dedicated bike paths and lanes. These investments will be eligible through the new Investing in Canada Infrastructure Program (Annex C) public transit funding and green infrastructure funding streams. These investments will support the transition to a low-carbon society and reduce air pollution and GHG emissions. They will also enhance mobility options and strengthen communities.

NATURAL INFRASTRUCTURE

The Investing in Canada plan provides support for natural infrastructure solutions that will help meet its objectives and outcomes. Natural infrastructure is the use of naturally occurring resources such as aquifers, wetlands, forests and shoreline vegetation, or the engineered use of natural resources to deliver infrastructure services: for example, green roofs, rain gardens, urban forests, tree-lined streets and urban agriculture.

Natural infrastructure can be an effective means for treating water and wastewater, managing storm water and mitigating the impacts of flooding and other risks. It can be particularly useful for adapting public infrastructure to the impacts of climate change and other natural disasters. For example, natural shoreline modifications can help prevent erosion; raingardens can help absorb increased precipitation; and green roofs can help reduce the urban heat island effect. Managed natural landscapes can pre-filter drinking water as done for New York City and urban greenspace including storm water ponds can reduce flooding risks and prevent the discharge of untreated wastewater from combined storm and sanitary sewers. Other benefits of natural infrastructure include carbon storage, increased wildlife habitat, food security, recreational opportunities and health benefits.



John Lindsey YMCA, Halifax, Nova Scotia

The construction of the new John Lindsey YMCA facility in Halifax, Nova Scotia will promote healthy lifestyles, increase community engagement, and create economic prosperity for the region.

GREEN INFRASTRUCTURE

The Plan will address persistent challenges to air, water and soil quality and make Canadian communities, including Indigenous communities, more resilient to climate change, natural disasters and extreme weather events. Reductions in GHG emissions will reduce the risks we face from climate change and help Canada meet its commitments under the Pan-Canadian Framework on Clean Growth and Climate Change. At the same time, these investments will also generate sustainable economic growth.

SOCIAL INFRASTRUCTURE

Investments in housing, early learning and child care, accessible infrastructure and in community, culture and recreation infrastructure will create stronger, more vibrant communities. Funding is broadly available for large and small projects, depending on the needs of communities. These investments will lead to new opportunities and improved social and economic inclusion for many Canadians, especially Indigenous Peoples and low-income populations. The Plan allocates dedicated funding for housing, homelessness, early learning and child care, and cultural and community infrastructure for Indigenous communities.

COMMUNITY HUBS

Through the community, culture, and recreation stream of the Investing in Canada Infrastructure Program, the Government of Canada will continue to support community hub projects.

What is a community hub?

A community hub brings together diverse services (health, social, cultural, sport and recreational) in a single location to meet the needs of the community and to enable collaboration between service providers. It can be located in a dense urban neighbourhood, a rural village, or anywhere in between.

Why are community hubs important?

Each community hub in Canada is unique, offering services tailored to the needs of the people it serves. What each has in common is its contribution to building more inclusive communities that give Canadians from all walks of life access to opportunities and supports that will help them reach their full potential.

Examples of community hub projects:

YMCA of Greater Halifax/ Dartmouth

When the original YMCA facility shut down in 2014, the community lost a special place where neighbours and friends could come together; where families could participate in a variety of sports and hobbies; and where residents across the Greater Halifax/Dartmouth region could access much-needed community resources.

In April 2017, the Government of Canada provided $5 million towards the new facility, which will bring that meaningful space back to the community. The expanded centre will feature an aquatic centre, a gymnasium and indoor track, child-care facilities and community resource centres for leadership, child and family development.

Cantley Multifunctional Community Centre

The Municipality of Cantley in Quebec does not have municipal infrastructure offering sports and recreation. With this project, the municipality will create a central hub for the community. The new facility will serve residents of all ages, and will strengthen community connections.

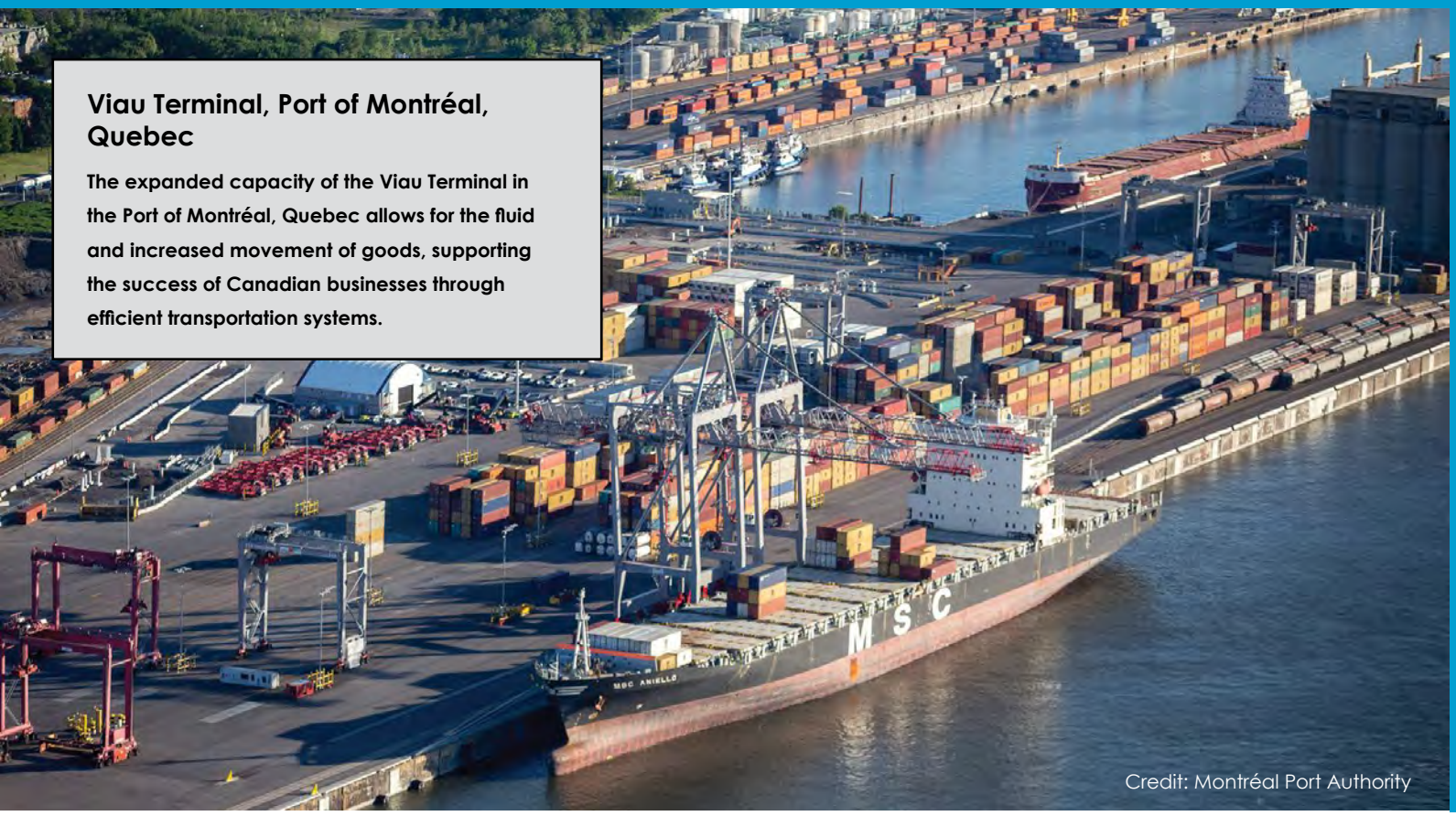
In May 2017, the Government of Canada invested over $2.6 million in the centre which consists of a large multi-purpose hall, multi-purpose rooms, locker rooms, a physical fitness room, administrative and storage spaces.

RURAL AND NORTHERN COMMUNITIES

Investments will help rural and northern communities overcome the challenges that come with small, often widely dispersed populations and long distances from markets, which together make infrastructure projects expensive and difficult to manage. This in turn has led to larger infrastructure gaps for rural and northern communities as compared to larger communities, including little or no access to reliable transportation and broadband Internet connectivity, and a lack of energy security. By addressing these gaps, the Plan will create new economic opportunities.

REDUCING RELIANCE ON DIESEL AND IMPROVING ENERGY SECURITY

The Investing in Canada plan includes two complementary programs to reduce the reliance of Canadian communities on diesel. The $220 million Clean Energy for Rural and Remote Communities program, delivered by Natural Resources Canada, will help communities and industrial sites move to more sustainable renewable energy solutions and encourage adoption of energy efficiency measures. [67] Infrastructure Canada's new $400 million Arctic Energy Fund will support greater energy security for communities in the territories in two ways: by enabling them to transition to renewable energy, or, for communities that cannot connect to an electricity grid or switch to a renewable energy source, install cleaner, more reliable fossil-fuel based energy systems.



Viau Terminal, Port of Montréal, Quebec

The expanded capacity of the Viau Terminal in the Port of Montréal, Quebec allows for the fluid and increased movement of goods, supporting the success of Canadian businesses through efficient transportation systems.

Credit: Montréal Port Authority

TRADE AND TRANSPORTATION INFRASTRUCTURE

The Plan calls for investments that will build stronger, more efficient transportation corridors to international markets and help Canadian businesses compete, grow and create more jobs for Canada's middle class. By modernizing transportation infrastructure including roads, bridges, airports, rail lines and port facilities, the plan supports the flow of goods and passengers by reducing bottlenecks and address capacity issues. Investments to address the unique transportation needs in Canada's territorial North will improve safety and foster economic and social development. It will also help the transportation system to withstand the effects of climate change and make sure it is able to support new technologies and innovation.

Opening the Door to Innovation

Innovation allows Canadians to adapt to change and prepare for the future. To strengthen and grow the middle class and remain competitive in the global economy, the Government is committed to opening the door to innovation in public infrastructure investment.

CANADA INFRASTRUCTURE BANK

The CIB will make investments in revenue-generating infrastructure projects that are in the public interest, and seek to attract investment from private sector and institutional investors for those projects. This is an innovative partnership model between all orders of government, across all regions of Canada, leveraging the expertise of the private sector. Use of the CIB will be optional for project proponents. It will invest $35 billion over 11 years, using loans, equity investments and other innovative financial tools.

SMART CITIES CHALLENGE

The $300 million Smart Cities Challenge, launched in November 2017, applies an innovative approach to program delivery in the form of pan-Canadian competitions. The Challenge incentivizes communities of all sizes, including Indigenous communities, to apply a smart city approach that leverages data and connected technology to improve the quality of life for residents. It will fund projects that are ambitious and innovative, transferable, replicable and scalable.

SUPPORTING INNOVATIVE TRANSPORTATION

Connectivity and automation have the potential to increase innovation and economic growth in the transportation sector and in Canada's economy as a whole. Transport Canada will deliver $76.7 million in funding over five years to accelerate transportation innovations.

INNOVATION IN ADDRESSING CLIMATE CHANGE

The Government is taking a leadership role in climate change mitigation, partly in response to Canada's ratification of the Paris Agreement. Under the Agreement, Canada agreed to work with other countries to limit global temperature rise to well below 2°C by the end of century. To this end, Canada committed to reducing its GHG emissions by 30% of its 2005 levels by 2030, and agreed to strengthen efforts in the years ahead. To achieve these goals, the Investing in Canada plan includes programs that support innovation in green technologies. The Government can decrease the risk of new technologies and approaches, helping them to become viable options for reducing GHG emissions while also establishing new industries. The Plan also supports innovative approaches to enhance resilience to the impacts of a changing climate, including the use of natural infrastructure.

POST-SECONDARY INSTITUTIONS STRATEGIC INVESTMENT FUND

Budget 2016 announced $2 billion for infrastructure projects at post-secondary institutions over three years to enhance and modernize research and commercialization facilities, as well as industry-relevant training facilities at colleges and polytechnic institutions in Canada. These investments reinvigorate Canada's research and science base and address existing needs while contributing to Canada's long-term innovation and sustainability objectives.

Addressing the Data Gap

The Investing in Canada plan will introduce new ways to measure the impact of infrastructure investments — a process that begins with improving data collection.

Excellence in planning and asset management can extend infrastructure lifespans, improve quality of life in Canadian communities and reduce the burden infrastructure imposes on the public purse. For these reasons, the Government of Canada, in partnership with the Federation of Canadian Municipalities, is investing $50 million to support asset management best practices across Canada. Through the Municipal Asset Management Program, municipalities can apply for grants to fund asset management initiatives and risk assessments; plans, policies and strategies; data collection and reporting; training and organizational development; and knowledge transfer, development and sharing. The Capital Facilities and Maintenance Program, delivered by Indigenous Services Canada, will provide an additional $15 million over five years to help First Nations and modern treaty and self-government agreement signatories develop and implement asset management plans and practices, similar to the Municipal Asset Management Program.

The Plan also includes a commitment to improving data on the state and performance of core public assets. In July 2017, Infrastructure Canada and Statistics Canada launched Canada's Core Public Infrastructure (CCPI) survey. The goal of this national survey is to improve the knowledge and understanding of Canada's core public

Light Rail Transit System Expansion, Edmonton, Alberta

The expansion of the Light Rail Transit (LRT) system in Edmonton, Alberta will expand commuter service and make Alberta's capital a better place to live and work by providing users with improved access to major centres of employment, business, health and education.

infrastructure assets (i.e., roads; bridges and tunnels; culture, recreation and sports facilities; social and affordable housing; public transit systems; solid waste systems; and potable water, wastewater and storm water systems) across the country.

The CCPI is Canada's first national survey on core public infrastructure. The target respondents for the survey are municipalities, but other asset holders, including regional, provincial and federal governments and Indigenous communities, were also invited to participate. In fall 2018, a summary of the 2017 key findings will be posted online. Key elements of the CCPI survey will be repeated every two years, and over time it will give decision makers from all orders of government a clear view of trends on the state and performance of core public assets.

The Canada Infrastructure Bank will also play a role in informing and reporting on relevant data to improve analysis and support evidence-based decision-making.

Several federal departments are undertaking additional initiatives that will improve data on a number of issues. These initiatives include:

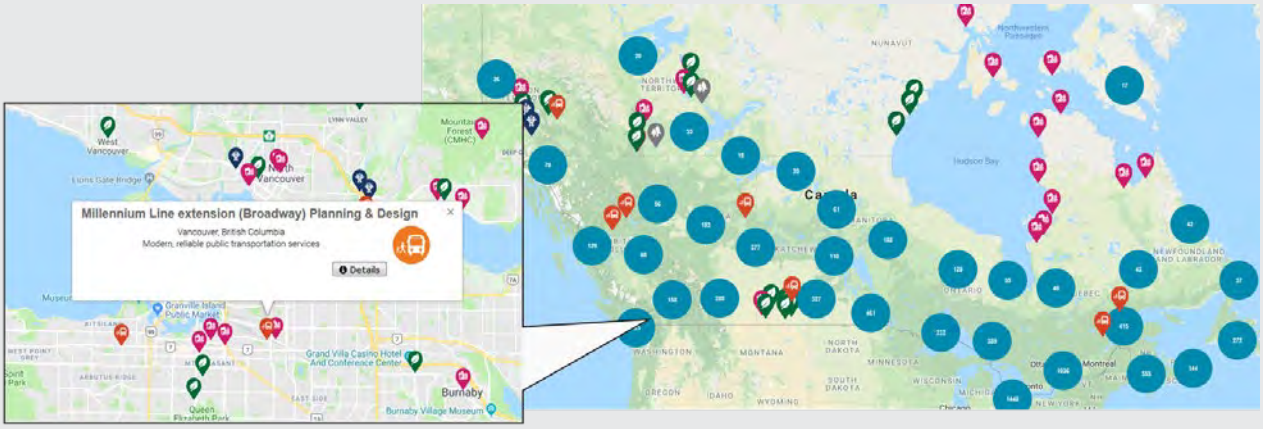
- Canada Mortgage and Housing Corporation is improving data on housing through improved data collection and analytics on housing and household conditions through new national surveys, leveraging existing surveys, and expanding the collection of program data.
- Statistics Canada is developing a nationwide database of all properties in Canada, with information on purchases and sales, degree of foreign ownership, homeowner demographics and financing characteristics.
- Employment and Social Development Canada is improving data, including by leveraging existing administrative data to support early learning child care data collection and analysis, and to develop a new methodology to measure shelter use patterns and trends among the homeless population.
- Natural Resources Canada is developing an online data platform that measures and shares energy use data of buildings to support energy efficiency programming and to improve the Remote Communities Energy Database.
- Transport Canada is addressing data and analytical gaps on strategic elements of Canada's transportation systems and will make this information accessible to the public through new web portals.

Delivering Infrastructure Funding

Building infrastructure takes time, with many steps between announcing a plan and the final accounting of project costs. Following the announcement of funding in a budget, the Government of Canada undertakes consultations with the public, key stakeholders, provinces, territories and Indigenous groups to determine the programs for delivering the funds. When programs are delivered by other orders of government, the Government establishes funding agreements with the provinces and territories; these agreements can take up to a year to complete. Under these agreements, provinces and territories consult with their municipalities and key stakeholders to bring forward priority projects to the federal government for consideration. Once the project is approved by the Government, provinces and territories can submit eligible costs for reimbursement. Some projects, once approved, move quickly into the construction phase while others have longer lead times for planning, and local approval processes (e.g., zoning and permitting). Regardless of how long planning takes or how soon ground can break, eligible costs can be submitted for reimbursement throughout the life of the project.

The Government of Canada reports on program results and spending, including tracking projects as they get underway, when costs are incurred, when federal funds flow to other orders of government, and the results achieved through Canada's investments.

FIGURE 4: INVESTING IN CANADA INTERACTIVE GEOMAP



Reporting to Canadians

Infrastructure Canada reports to Canadians on the impacts of the Investing in Canada plan. In December 2017, a geomap (Figure 4) featuring project-level results information from each department delivering on the Plan was launched on the Infrastructure Canada website to inform Canadians about where infrastructure investments are being made and how these will benefit them. The geomap, which is updated monthly, is complemented by Infrastructure Canada's website, as well as the open government portal.

Infrastructure Canada will publish an annual report on progress made toward the Plan's objectives. Five years into the Plan, a review is planned.

The timespan from the announcement of funding to the grand opening of a new facility can take years, especially for transformative projects. However, the time in between is important and provides an opportunity for governments to demonstrate early results and progress on a project. At the same time, each program will have its own reporting and measurement framework including implementation milestones, program outputs and shorter-term targets: for example, progress towards ending all long-term drinking water advisories affecting public drinking water systems on-reserve by 2021. Each department will report on the programs they deliver through their respective annual Departmental Results Reports and on their departmental websites. Infrastructure Canada's Departmental Results Reports will also include reporting on components of the Investing in Canada plan delivered by other departments, in its role of coordinating reporting among federal departments delivering the Plan.

4. KEY INVESTMENTS

Through the Investing in Canada plan, the Government is investing over $180 billion in infrastructure (Figure 1) for new and established programs. The first phase of new infrastructure funding under the Plan, outlined in Budget 2016, accelerated existing programs and launched short term programs focused on rehabilitation and modernization. The next phase, outlined in Budget 2017, consists of long-term investments to address broader and more ambitious goals: a more modern, cleaner economy; a more inclusive society; and an economy better positioned to capitalize on the potential of global trade. The Plan also includes pre-existing and renewed programs, such as the Gas Tax Fund and the New Building Canada Fund (Annex A).

The Investing in Canada plan dedicates funding for public transit, green infrastructure, social infrastructure, rural and northern communities and trade and transportation. This includes funding for Indigenous communities, and funding delivered through the Canada Infrastructure Bank and the Smart Cities Challenge.

Public Transit

From Canada's small towns to its largest urban centres, efficient public transit is vital to the functioning of communities. Public transit helps to reduce traffic on roads so they can accommodate other economic activity. It is the primary means of mobility for many Canadians, allowing them to access jobs, education, health care and social activities. With increasing urbanization and an aging population, transit systems in both urban and rural areas will need to adapt their services.

The Plan devotes $28.7 billion to public transit and is already delivering results for Canadians. For instance, in the municipalities of Halifax, Moncton, Dieppe, and Riverview, 48 new buses recently purchased through the Plan use less fuel, reduce air pollution and provide accessible and reliable public transit services.

FIGURE 5: PUBLIC TRANSIT INVESTMENTS

Initiative	Funding
Budget 2016 investments in public transit	$3.4 billion
Public transit stream of Investing in Canada Infrastructure Program	$20.1 billion
Allocated to Canada Infrastructure Bank	$5 billion
Allocated to Smart Cities Challenge	$100 million
Total new funding	**$28.7 billion***

*Not shown in the table, but included in the total: $75 million, which contributes to the larger $950 million Innovation Superclusters Initiative being led by Innovation, Science and Economic Development Canada, and which is reported on under the Innovation and Skills Plan.

The University of British Columbia's Okanagan Campus Transit Exchange Project created six new bus bays, one new drop off area and four bus layover stations, as well as transit shelters, transit lanes and bicycle storage lockers to better meet transit needs for students and other Kelowna residents.

By improving the capacity, quality, safety and accessibility of public transit infrastructure throughout Canada, investments lead to reduced urban congestion and improved access to jobs and economic growth for all Canadians. They support the transition to a low-carbon economy and provide positive environmental effects by reducing localized air pollution and under certain circumstances can contribute to reducing GHG emissions. The investments also enhance mobility options and strengthen opportunities for all Canadians to contribute to the social life of their communities. As such, public transit investments (Figure 5) contribute to the following long-term outcomes of the Investing in Canada plan:

- Rate of economic growth is increased in an inclusive and sustainable way.
- Urban mobility in Canadian communities is improved.
- Infrastructure is managed in a more sustainable way.

BUDGET 2016 INVESTMENTS IN PUBLIC TRANSIT

To improve and expand public transit systems across Canada, Budget 2016 included $3.4 billion in funding for public transit over three years, starting in 2016–17, delivered by Infrastructure Canada through the Public Transit Infrastructure Fund.

PUBLIC TRANSIT STREAM OF INVESTING IN CANADA INFRASTRUCTURE PROGRAM

$20.1 billion over 10 years, delivered by Infrastructure Canada

The long-term component of the Investing in Canada plan funds public transit through the public transit stream of the Investing in Canada Infrastructure Program. This stream provides funding to address the construction, expansion and improvement of public transit infrastructure, and to support active transportation projects that integrate "first-mile, last-mile" connectivity (the first portion and last portion of a trip taken using public transit, such as the walk or cycle to the transit station and from the station to the final destination) within a public transit system.

Under the Investing in Canada Infrastructure Program, an agreement is signed with each province and territory regarding cost-sharing for agreed-to projects (Annex C). The provincial and territorial allocation is determined by a formula based on ridership (70%) and population (30%).

This formula strikes a balance between addressing the demands on existing systems and funding system expansions to accommodate population growth. Within each jurisdiction, funding is further allocated to existing public transit systems based on their respective ridership, with some flexibility possible to address regional requirements. In order to focus long-term public transit investments on new construction and expansion, there is a 15% national cap on investments that can be allocated to rehabilitation projects. However, this national cap allows for regional variation.

Green Infrastructure

The Government has made it a priority to address climate change and move Canada to a prosperous, clean growth, resilient and low-carbon economy. Infrastructure funding is a critical tool for advancing climate change mitigation and adaptation outcomes. The Investing in Canada plan seeks to make Canadian communities more resilient to climate change and to address persistent challenges to air, water and soil quality. This includes investments for green infrastructure in Indigenous communities.

The Plan devotes $26.9 billion to the green infrastructure investment stream, approximately 50% of which is targeted to GHG emission reduction projects. Through programs to increase Canada's capacity to generate, transmit and manage renewable energy, increase access to clean transportation and increase the energy efficiency of buildings, the Plan will contribute to reducing GHG emissions and supporting the Pan-Canadian Framework on Clean Growth and Climate Change. By increasing the capacity to treat and manage water, wastewater and storm water, access potable water, and reduce or remediate soil and air pollution throughout Canada, these investments ensure that more wastewater systems meet federal treatment standards, and lead to cleaner water, air and soil for all Canadians. Tools such as the climate lens, which integrate climate risk into infrastructure planning and investments to respond and adapt to climate impacts, natural disasters and extreme weather events, protect Canadians and their communities.

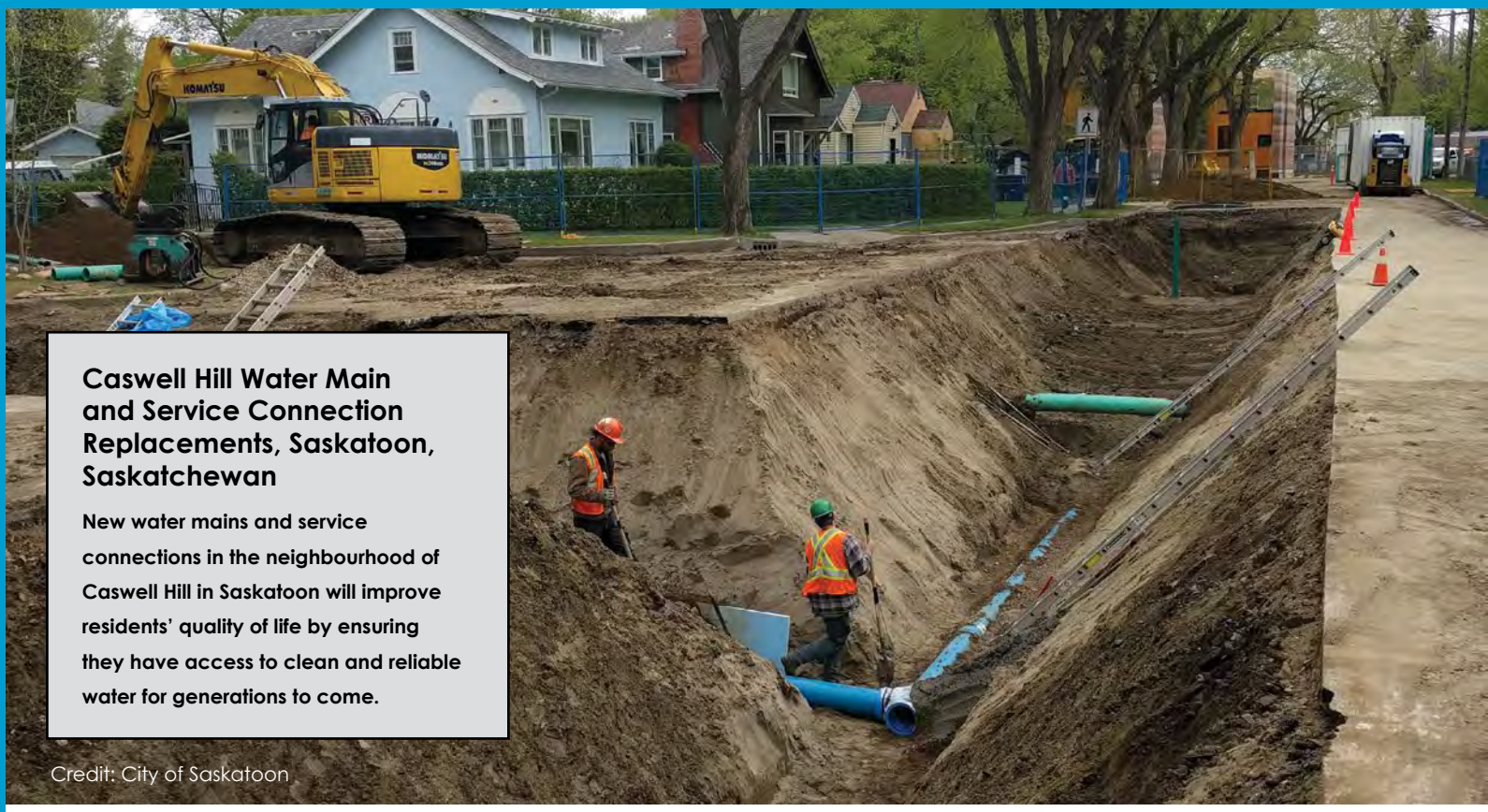
Overall, these investments (Figure 6) create new jobs and create sustainable growth for all Canadians, and contribute to the following long-term outcomes of the Investing in Canada plan:

- Rate of economic growth is increased in an inclusive and sustainable way.
- Environmental quality is improved, GHG emissions are reduced, and resilience of communities is increased.
- Infrastructure is managed in a more sustainable way.

FIGURE 6: GREEN INFRASTRUCTURE INVESTMENTS

Initiative	Funding
Budget 2016 investments in green infrastructure	$5 billion
Green infrastructure stream of Investing in Canada Infrastructure Program	$9.2 billion
National programs and initiatives	$5.2 billion*
Arctic Energy Fund (delivered under the rural and northern stream of the Investing in Canada Infrastructure Program)	$400 million
Allocated for Indigenous communities	$2 billion
Allocated to Canada Infrastructure Bank	$5 billion
Allocated to Smart Cities Challenge	$100 million
Total new funding	**$26.9 billion**

*Included in this amount is $2 billion that has been reserved for programming that will begin in 2020–21; and $75 million that contributes to the larger $950 million Innovation Superclusters Initiative being led by Innovation, Science and Economic Development Canada and which is being reported on under the Innovation and Skills Plan.



Caswell Hill Water Main and Service Connection Replacements, Saskatoon, Saskatchewan

New water mains and service connections in the neighbourhood of Caswell Hill in Saskatoon will improve residents' quality of life by ensuring they have access to clean and reliable water for generations to come.

Credit: City of Saskatoon

BUDGET 2016 INVESTMENTS IN GREEN INFRASTRUCTURE

To ensure that Canada's communities are healthy and productive places to live, Budget 2016 included $5 billion in funding for infrastructure that protects communities and supports Canada's ongoing transition to a clean growth economy. Specifically, the Government is investing in electric vehicle and alternative transportation fuel infrastructure, initiatives to foster regional electricity cooperation, and the development of building codes and standards that integrate climate resiliency requirements. Working with provinces, territories, municipalities and First Nations communities, the Government is also investing to modernize water and wastewater infrastructure.

GREEN INFRASTRUCTURE STREAM OF THE INVESTING IN CANADA INFRASTRUCTURE PROGRAM

$9.2 billion over 10 years, delivered by Infrastructure Canada

Investments under the green infrastructure stream of the Investing in Canada Infrastructure Program support GHG mitigation projects; infrastructure that will help communities respond and adapt to the impacts of a changing climate; and other green infrastructure that supports a healthy environment, such as water and wastewater infrastructure.

Under the Investing in Canada Infrastructure Program, an agreement is signed with each province and territory regarding cost-sharing for agreed-to projects (Annex C).The jurisdictional allocation for the green infrastructure stream consists of a base amount of $200 million for each province and territory. The remainder is allocated on a per capita basis, using 2016 Statistics Canada Census data. Funding for the green infrastructure stream is delivered via three sub-streams. Each category ensures that Canada meets its long-term priority outcomes:

Climate Change Mitigation investments result in reduced greenhouse gas emissions. Examples include electricity generation and transmission (e.g., smart grid and renewables), built environment (e.g., increased energy efficiency), transportation (e.g., electric vehicles and alternative fuel infrastructure), active transportation infrastructure and higher order rapid transit (e.g., heavy rail, subway, light rail transit or bus rapid transit), or the adoption of vehicles that use a renewable fuel source (e.g., fleet electrification)

in a public transit fleet. Under the green stream, 45% of a province's allocation will be invested in greenhouse gas emission mitigation projects.

Adaptation, Resilience, Disaster Mitigation investments support community resilience to climate change. These projects could include constructed infrastructure (e.g., dykes, winter ice road replacement) and natural infrastructure (e.g., natural shorelines and wetlands) projects that result in increased infrastructure capacity to withstand and adapt to climate change impacts and climate-related disasters.

Environmental Quality investments result in increased capacity to treat and manage water and wastewater and reduce or remediate soil and air pollutants. Funding could include investments in natural infrastructure as well as upgrades to water, wastewater infrastructure, replacement of diesel storage tanks and reduction of the environmental impact of landfills.

National Green Infrastructure Programs and Initiatives

DISASTER MITIGATION AND ADAPTATION FUND

$2 billion over 10 years, delivered by Infrastructure Canada

The Disaster Mitigation and Adaptation Fund supports national, provincial and municipal projects that deal with the impacts of a changing climate. This fund will invest in large scale adaptation, resilience and disaster mitigation projects that may span multiple jurisdictions.

CLEAN ENERGY FOR RURAL AND REMOTE COMMUNITIES

$220 million over six years, delivered by Natural Resources Canada

The Clean Energy for Rural and Remote Communities program supports the transition to more sustainable, renewable energy solutions and encourages adoption of energy efficiency measures to reduce the reliance on diesel fuel in rural and remote communities.

EMERGING RENEWABLE POWER

$200 million over five years, delivered by Natural Resources Canada

The Emerging Renewable Power program supports the deployment of emerging renewables that are not yet established commercially in Canada, such as geothermal, tidal and offshore wind. It expands the portfolio of commercially-viable, investment-ready renewable energy technologies available to reduce GHG emissions in Canada's electricity sector, and supports the development of new supply chains.

ENERGY EFFICIENT BUILDINGS

$182 million over eight years, delivered by Natural Resources Canada

The Energy Efficient Buildings program supports work with provinces, territories and industry on energy code development, data sharing, research and development, and market transformation strategies for the buildings sector. The program also funds research, development, and demonstration of emerging technologies and construction practices for net-zero energy ready buildings and deep energy retrofits across Canada.

ELECTRIC VEHICLE AND ALTERNATIVE FUEL INFRASTRUCTURE

$120 million over four years, delivered by Natural Resources Canada

The Electric Vehicle and Alternative Fuel Infrastructure program funds the deployment of infrastructure for electric vehicle charging and refuelling for other alternative fuels such as natural gas and hydrogen. It also funds electric vehicle charging technology demonstration projects and the development of codes and standards.

SMART GRID

$100 million over four years, delivered by Natural Resources Canada

The Smart Grid program supports the demonstration and deployment of smart-grid technologies that make the most efficient use of existing electricity assets while integrating renewable energy and increasing electricity system flexibility and resiliency with maintained or enhanced cyber security.

SERIES OF INITIATIVES IN SUPPORT OF CLIMATE ADAPTATION AND RESILIENCE

$281 million over 11 years, delivered by multiple departments

In addition to the programs listed, Environment and Climate Change Canada, Natural Resources Canada, Indigenous Services Canada, Crown-Indigenous Relations and Northern Affairs Canada, and other departments are delivering a suite of programs and initiatives that will each contribute towards climate adaptation and resilience in Canada, the results of which will be reported under the Pan-Canadian Framework for Clean Growth and Climate Change.

Social Infrastructure

Social infrastructure funding under the Investing in Canada plan will address key areas of concern for Canadians, particularly housing and early learning and child care. This funding will create stronger, more vibrant communities with investments in community, culture and recreation infrastructure and in accessibility. The Plan allocates dedicated funding for housing, homelessness, early learning and child care, and cultural and community infrastructure for First Nations, Inuit and Métis communities.

The Plan devotes $25.3 billion to the social infrastructure investment stream (Figure 7) to be delivered through programs that allocate funds to provinces and territories, as well as investments allocated based on project applications. This will ensure that funding will be broadly available and can address large and small projects, depending on the needs of communities.

These investments lead to new opportunities and improved social and economic inclusion for many Canadians, and specifically for Indigenous Peoples and low income populations, and contribute to the following outcomes of the Investing in Canada plan:

- Rate of economic growth is increased in an inclusive and sustainable way.
- Housing is affordable and in good condition and homelessness is reduced year over year.
- Early learning and child care is of high quality, affordable, flexible and inclusive.
- Canadian communities are more inclusive and accessible.
- Infrastructure is managed in a more sustainable way.

FIGURE 7: SOCIAL INFRASTRUCTURE FUNDING

Initiative	Funding
Budget 2016 investments in social infrastructure	$3.4 billion
Community, Culture and Recreation Stream of the Investing in Canada Infrastructure Program	$1.3 billion
National programs and initiatives	$24.6 billion
Allocated for Indigenous communities	$2 billion
Allocated to Smart Cities Challenge	$100 million
Total new funding	**$25.3 billion***

* $6.1 billion of funding in support of social infrastructure is sourced from the fiscal framework and other revenues; therefore the total is less than the sum of the initiatives. Totals may not add due to rounding.

Recreation Centre, Hay River, Northwest Territories

The modernization of the recreation centre in the Town of Hay River, Northwest Territories allows for greater access to healthy, more active lifestyles.

BUDGET 2016 INVESTMENTS IN SOCIAL INFRASTRUCTURE

The Budget 2016 Investing in Canada plan commitments included social infrastructure investments totalling $3.4 billion over five years. These investments are expanding affordable housing, supporting early learning and child care, renewing cultural and recreational infrastructure and improving community health care facilities (including nursing stations, treatment centres and accommodation space for visiting health care professionals) on reserve. The Budget 2016 investments in social infrastructure will help strengthen the middle class, promote inclusive growth for Canadians, and lift more Canadians — including children and seniors — out of poverty.

COMMUNITY, CULTURE AND RECREATION STREAM OF THE INVESTING IN CANADA INFRASTRUCTURE PROGRAM

$1.3 billion over 10 years, delivered by Infrastructure Canada

The community, culture and recreation stream of the Investing in Canada Infrastructure Program provides funding for the construction, expansion or rehabilitation of new community, culture, sports and recreation facilities. Community infrastructure is defined as publicly accessible, multi-purpose spaces that bring together a variety of different services, programs and/or social and cultural activities to address local needs. This also includes a provision for investments in infrastructure for urban Indigenous populations. Under the Investing in Canada Infrastructure Program, an agreement is signed with each province and territory regarding cost-sharing for agreed-to projects (Annex C).

National Social Infrastructure Programs and Initiatives

NATIONAL HOUSING STRATEGY

$16.1 billion over 11 years[i], led by the Canada Mortgage and Housing Corporation

Through the National Housing Strategy, the Government is re-engaging in affordable housing by investing in the growth of livable communities and the resilience of the community housing sector. The Strategy was developed in collaboration with the province and territories, and in consultation with municipalities, Indigenous Peoples, industry experts, stakeholders and Canadians living with the challenge of finding adequate and affordable housing.

Key elements of the National Housing Strategy include:

- An expanded federal homelessness program to reduce homelessness.
- A National Housing Co-Investment Fund to ensure existing rental housing is not lost to disrepair and to develop that is new, high-performing affordable housing integrated with support and services.
- A renewed partnership between the government and provinces and territories to address distinct housing priorities, including affordability, repair and construction.
- Additional federal funding to address housing in the Canada's North.
- Housing support for off-reserve Indigenous households living in social housing in urban and rural communities.
- Making federal lands available for affordable housing.
- Enhanced housing research, data and demonstration to inform our policies and lead to better housing outcomes for all Canadians.

Canada Mortgage and Housing Corporation is also supporting Indigenous Services Canada and Crown-Indigenous Relations and Northern Affairs Canada to co-develop distinctions-based Indigenous housing strategies with First Nations, Inuit and Métis in order to support enhanced self-determination and improve housing outcomes.

EARLY LEARNING AND CHILD CARE FRAMEWORK

$7.5 billion over 11 years, led by Employment and Social Development Canada

To help Canadian children get the best start in life and to better support Canadian families, Budget 2016 and 2017 announced investments totalling $7.5 billion over 11 years, starting in 2017–18, to support and create more high-quality, affordable child care across the country, particularly for families more in need, including Indigenous families and children living on and off reserve.

On June 12, 2017, the Government of Canada announced an historic agreement with provincial and territorial governments on a Multilateral Early Learning and Child Care Framework. The Framework will seek to increase the quality, accessibility, affordability, flexibility, and inclusivity in early learning and child care, in particular for families that need child care the most. The Government of Canada is working with each province and territory to enter into three-year bilateral agreements that will address their early learning and child care needs.

The Government is working in partnership with Indigenous Peoples to co-develop the Indigenous Early Learning and Child Care Framework to better support the distinct needs of Indigenous children and families. Indigenous early learning and child care has been identified as a priority by the Canada-Métis Nation Accord, the Inuit-Crown Partnership Committee and the Assembly of First Nations.

[i] The portion of the National Housing Strategy funding allocated under the Investing in Canada plan.

HOME CARE INFRASTRUCTURE

$1 billion over four years, delivered by Health Canada

Many patients in Canadian hospitals could be better cared for at home or in their community. As part of the Government's investment of $6 billion over 10 years to help provinces and territories improve access to appropriate services and supports in the home and the community, the Government will invest $1 billion over four years on home care infrastructure.

CANADA CULTURAL SPACES FUND

$300 million in additional funding over 10 years, delivered by Canadian Heritage

The Canada Cultural Spaces Fund supports the improvement of physical conditions for artistic creativity and innovation. The fund supports renovation and construction projects, the acquisition of specialized equipment and feasibility studies related to cultural spaces. The additional investments will enable the program to prioritize targeted support for creative hubs to advance the Creative Canada vision, by bringing together professionals from a range of arts or heritage sectors and creative disciplines, while continuing to invest in traditional arts and heritage infrastructure projects that remain part of its core business such as museums, theatres and performing arts centres. Creative Hubs are spaces that are conceived and designed to encourage collaboration, innovation and productivity. This is a complementary approach to the Investing in Canada Infrastructure Program, which funds more diverse types of projects prioritized by provinces and territories and which may include community, cultural and/or recreation components.

COMMUNITY EDUCATIONAL INFRASTRUCTURE

$80 million over 10 years, delivered by Canadian Heritage

Through bilateral education agreements with provinces and territories, this new funding will help build or modernize community educational infrastructure in Official-Language Minority Communities. The Government will invest in projects in school settings, such as the construction of an early childhood centre or the expansion of a library that will become a multipurpose community space. This will create more vibrant communities by helping official languages communities protect their language and culture, enriching their lives and the lives of those around them.

ENABLING ACCESSIBILITY FUND

$77 million in additional funding over 10 years, delivered by Employment and Social Development Canada

The Enabling Accessibility Fund provides funding to eligible capital projects that increase access for persons with disabilities to community spaces and workplaces across Canada, which in turn creates opportunities to participate in community activities, services and programs, or access employment opportunities.

CAPITAL FACILITIES AND MAINTENANCE PROGRAM

$15 million in additional funding over five years, delivered by Indigenous Services Canada

Additional funding to the Capital Facilities and Maintenance Program will provide support for First Nations communities to develop and implement asset management plans and practices. This will enable the federal government to support Indigenous communities, including modern treaty and self-governing agreement signatories, who are unable to access a similar program through the Federation of Canadian Municipalities.

WOMEN IN CONSTRUCTION FUND

$10 million over three years, delivered by Employment and Social Development Canada

To ensure that more women benefit directly from infrastructure investments, this fund aims to increase the participation of women in construction trades where they have been traditionally under-represented.

FIGURE 8: RURAL AND NORTHERN COMMUNITIES INFRASTRUCTURE FUNDING

Initiative	Funding
Rural and northern stream of the Investing in Canada Infrastructure Program	$2 billion
Total new funding	**$2 billion**

Rural and Northern Communities

Rural and northern communities have particular infrastructure needs. Investing in modern and efficient infrastructure supports local economies, which in turn can create job opportunities, improve household incomes, and enhance quality of life for those living and working in rural and northern regions. Rural and northern communities have small populations and face challenges related to a changing climate, physical dispersion and distance from markets. When combined, these factors can make projects difficult and expensive to implement, which in turn makes certain infrastructure gaps, such as lack of access to reliable transportation, broadband Internet connectivity and energy security, more prevalent in these communities. To ensure that they have the funding they need, the Investing in Canada plan includes a funding stream dedicated specifically to rural and northern communities. This is in addition to the funding provided by all the other streams, which provinces and territories can allocate to rural and northern communities.

The Plan devotes $2 billion to the rural and northern communities infrastructure investment stream of the Investing in Canada Infrastructure Program (Figure 8). By investing in transportation connectivity in rural and northern regions, improving broadband Internet connectivity, and enhancing energy efficiency and reliability in communities that are not connected to the continental energy grid, these investments help set the conditions for social inclusivity and create more economic opportunities in Canada's northern and rural communities. These investments contribute to the following outcomes of the Investing in Canada plan:

- Rate of economic growth is increased in an inclusive and sustainable way.
- Environmental quality is improved, GHG emissions are reduced and resilience of communities is increased.
- Canadian communities are more inclusive and accessible.
- Infrastructure is managed in a more sustainable way.

RURAL AND NORTHERN COMMUNITIES STREAM OF THE INVESTING IN CANADA INFRASTRUCTURE PROGRAM

$2 billion over 10 years, delivered by Infrastructure Canada

The rural and northern communities infrastructure stream will support the unique and wide-ranging infrastructure priorities in small, rural and remote communities. These could include roads, broadband Internet connectivity, facilities that support food security and renewable energy.

Under the Investing in Canada Infrastructure Program, an agreement is signed with each province and territory regarding cost-sharing for agreed-to projects (Annex C). A community-size threshold for funding under the rural and northern communities infrastructure stream is determined with each province and territory as part of the Investing in Canada Infrastructure Program, up to a maximum community size of 100,000 people. The jurisdictional allocation of the $2 billion rural and northern communities infrastructure stream consists of a base amount of $75 million for provinces and $150 million for territories, reflecting the higher construction costs in northern communities. The remainder is allocated on a per capita basis based on populations of communities under 30,000, using 2016 Statistics Canada Census data. Finally, each province and territory will employ a regionally relevant definition

FIGURE 9: TRADE AND TRANSPORTATION INFRASTRUCTURE FUNDING

Initiative	Funding
National Trade Corridors Fund	$2 billion
Additional programs that support Canada's transportation sector	$3.4 billion
Allocated to Canada Infrastructure Bank	$5 billion
Total new funding	**$10.1 billion***

*$309 million of funding in support of trade and transportation is sourced from the fiscal framework and other revenues, therefore the total is less than the sum of the initiatives.

of "rural and northern" [ii] to account for differences in geography and population distribution.

CONNECT TO INNOVATE: RURAL AND REMOTE BROADBAND

$500 million over five years, delivered by Innovation, Science and Economic Development Canada

In Budget 2016, the Government announced an investment of up to $500 million over five years for a new program to extend and enhance broadband service in rural and remote communities. The Connect to Innovate program's objective is to bring high-speed Internet to 300 rural and remote communities, so that Canadians can make the most of the digital economy no matter where they live.

ARCTIC ENERGY FUND

$400 million over 10 years, delivered by Infrastructure Canada

In addition, the $400 million Arctic Energy Fund, sourced from the green infrastructure stream of the Investing in Canada Infrastructure Program, is delivered as part of the rural and northern communities stream to support energy security, reliability and efficiency in fossil fuel-dependent communities in the territories, including Indigenous communities. The Arctic Energy Fund provides funding for communities to upgrade existing fossil fuel-based energy systems or to supplement or replace these systems with renewable energy options, which contributes to improved reliability, efficiency and pollution reduction.

Trade and Transportation Infrastructure

The performance of the country's trade infrastructure directly affects the ability of Canadian firms to compete in the global marketplace. Investments in critical trade-related transportation infrastructure will position Canadian businesses to take advantage of trade opportunities in high-growth markets globally and within North America.

The Plan provides $10.1 billion in funding to the trade and transportation infrastructure stream (Figure 9), delivered by Transport Canada and the Canada Infrastructure Bank. Trade and transportation investments increase the efficiency, safety and resilience of Canada's transportation system and improve supply chain fluidity and performance.

[ii] In all cases, "rural and northern communities" are those with populations of no more than 100,000 persons, but provinces and territories have the flexibility to define these communities within this limit.

Stronger trade corridors help the natural resource and agricultural sectors move products to market more efficiently, contribute to northern and Indigenous economic and social development, bolster the Government's trade and investment strategy, strengthen innovation networks and clusters, increase transportation infrastructure's resilience to climate change impacts and position Canada for lower-carbon growth. Investments in trade and transportation infrastructure reinforce trade and economic links across the country, contributing to the following outcomes of the Investing in Canada plan:

- Rate of economic growth is increased in an inclusive and sustainable way.
- Infrastructure is managed in a more sustainable way

NATIONAL TRADE CORRIDORS FUND

$2 billion over 11 years, delivered by Transport Canada

The National Trade Corridors Fund is a merit-based program to make Canada's trade transportation system more efficient and reliable. The program invests $2 billion over 11 years to: support the flow of goods and passengers by reducing bottlenecks and addressing capacity issues; strengthen the climate resiliency of the transportation system and ensuring it is able to support new technologies and innovation; address the unique transportation needs in Canada's territorial North to improve safety and foster economic and social development; and build on investments made by a variety of public and private sector partners. Well-functioning trade corridors will allow Canadians to compete in key global markets and trade more efficiently with essential partners. In addition, funding for streamlining transportation along Canada's major trade corridors, up to $400 million, is dedicated to improving the flow of supplies to communities in the territorial north and to supporting safety needs and economic opportunities in Yukon, Northwest Territories and Nunavut.

ADDITIONAL PROGRAMS THAT SUPPORT CANADA'S TRANSPORTATION SECTOR

$3.4 billion over 11 years, delivered by Transport Canada

In addition to the National Trade Corridors Fund, and the minimum of $5 billion invested through the Canada Infrastructure Bank to address trade and transportation priorities across the country, Transport Canada is delivering a suite of programs and initiatives each contributing towards a stronger Canadian transportation sector.

Supporting Indigenous Communities

Investing in social infrastructure in Indigenous communities is a key pillar of the Government of Canada's strategy to create inclusive growth. Indigenous communities, including First Nations, Inuit and Métis, face unique challenges. While the Investing in Canada plan benefits all Canadians, including Indigenous Peoples, the Plan also dedicates funding to address the specific needs of Indigenous communities. Under the Investing in Canada Infrastructure Program, there is dedicated funding for urban Indigenous projects through the community, culture and recreation stream. In addition, Indigenous health and education facilities that advance the Truth and Reconciliation Commission's Calls to Action are eligible for funding under both the community, culture and recreation stream as well as the rural and northern communities stream.

BUDGET 2016 INVESTMENTS IN INDIGENOUS COMMUNITIES

To help protect the health and safety of Indigenous communities, the Investing in Canada Plan announced $3.46 billion of new infrastructure investments in Budget 2016. This included $2.24 billion in support of green infrastructure for First Nations communities to improve on-reserve waste management, water and wastewater infrastructure. It also included $1.22 billion in support of social infrastructure in Indigenous communities.

These investments are improving the quality of life of Indigenous communities by ensuring people have quality housing, improved access to early learning and child care and better health, cultural and recreational infrastructure.

LONG-TERM INVESTMENTS IN INDIGENOUS COMMUNITIES

$4 billion over 10 years, led by Indigenous Services Canada

To build and improve housing, water treatment systems, health facilities (including nursing stations, treatment centres, accommodation space for visiting health care professionals, and a health centre of excellence) and other community infrastructure in Indigenous communities across Canada, the Government is investing $4 billion over 10 years beginning in 2018. In total, $2 billion from the green infrastructure funding stream and $2 billion from the social infrastructure funding stream will build and improve housing, water treatment systems, health facilities and other community infrastructure. The Government is working closely with Indigenous communities to maximize the benefits and long-term sustainability of investments.

Canada Infrastructure Bank

MANDATE AND FUNCTIONS

The Canada Infrastructure Bank (CIB), a newly established arms-length independent Crown corporation, will make investments in revenue-generating infrastructure projects that are in the public interest, and attract private and institutional investment to those types of projects.

The CIB provides an additional option for federal, provincial, territorial, municipal and Indigenous project sponsors to advance projects that could be suitable candidates for revenue generation.

The Canada Infrastructure Bank:

- Structures, negotiates and delivers federal support for infrastructure projects with revenue-generating potential.
- Uses innovative financial tools to invest in national and regional infrastructure projects and attracts private sector capital to these projects.
- Serves as a point of contact for unsolicited proposals from the private sector.
- Improves evidence-based decision-making, acts as a centre of expertise and advises governments on the design and negotiation of revenue-generating projects.
- Works with partner governments to collect and report on relevant data to improve analysis on the state of infrastructure in Canada and to better inform investment decisions.

GOVERNANCE

The CIB is a Crown corporation that operates at arm's length from government. It is governed by an independent Board of Directors and led by a professional management team. This provides it with significant independence in its operations, which is important for it to be a credible commercial counterparty with investors and to make recommendations to governments based on commercial assessments and analysis.

FINANCIAL TOOLS

The CIB will execute complex infrastructure deals using a wide range of financial instruments at its disposal, including loans, loan guarantees, equity investments and other innovative financial tools.

The CIB is responsible for delivering $35 billion on a cash basis over 11 years, and will prudently manage its portfolio such that the total net fiscal expense over that period will remain under $15 billion. The CIB's financial support is structured to attract private sector capital and conclude project deals. The timing and design of federal support seeks to minimize the amount required to make projects financially viable.

The CIB will invest at least $5 billion in each of the following priority areas:

- public transit systems;
- trade and transportation infrastructure; and
- green infrastructure projects.

INNOVATIVE INFRASTRUCTURE DEALS THAT DELIVER MORE VALUE FOR CANADIANS

The CIB has flexibility to participate in complex infrastructure deals in new and innovative ways. This could include:

- Participating as a subordinated equity partner in a new large public transit project to encourage the transfer of revenue risk to the private sector investor.
- Facilitating an interprovincial clean energy grid project through the provision of a loan guarantee to lower risk and reduce financing costs for the proponent.
- Providing low-cost loans to advance complex trade corridor projects.

By using innovative financing tools to leverage private sector capital, the CIB can make public infrastructure dollars go farther and build more projects.

The CIB will deploy its innovative financial tools in a manner that is informed by examples from around the world, such as:

- The US Transportation Infrastructure Finance and Innovation Act loan program provided a subordinated loan of US$430 million to help attract $896 million of private financing to build a four-lane toll road near Austin, Texas. [68, 69]
- In 2015, the UK Green Investment Bank mobilized private investment in the £1.5 billion Galloper offshore wind farm by taking a 25% equity position alongside Siemens, Macquarie and RWE Innogy. The joint venture secured £1.37 billion of debt facilities from a consortium of 12 commercial banks plus the European Investment Bank. [70]
- The €7.8 billion Tours-Bordeaux High-Speed Rail project in France involved a consortium of investors responsible for financing €3.8 billion of the project cost, which included equity contributions, the European Investment Bank, *Fonds d'Epargne*, bank debts guaranteed by the French Government and non-guaranteed bank debts. Public subsidies offered by the French government, local communities and the EU will amount to nearly €3 billion. The public sponsor *Réseau Ferré de France* also invested €1 billion in the project. [71]

BENEFITS OF THE CIB MODEL

The CIB model builds on Canada's mature public-private partnerships market. It will help shift the funding of major infrastructure projects off the tax base onto those who use and benefit from it. This allows governments to direct traditional grant funding streams towards projects that require full public funding.

Through the CIB model, federal support can be used more strategically by transferring risk to the private sector. This encourages greater innovation and efficiency in meeting infrastructure needs by involving the private sector earlier, in scoping projects to consider the best way to manage infrastructure assets across their lifespan.

INVESTMENT CRITERIA

The CIB will make investments in infrastructure projects that are in the public interest and generate revenue; for example, through user fees, tolls and land value uplift capture (i.e., the capture of the increase in the value of land and development generated by the infrastructure project), which are already being examined by several jurisdictions. A key consideration for CIB will be if the project attracts private sector capital that would not have otherwise been invested in public infrastructure.

The Bank's investments will be made strategically, with a focus on transformative projects that are in the public interest such as public transit systems, trade and transportation corridors and green infrastructure projects, including those that reduce GHG emissions, deliver clean air and safe water systems and promote renewable power.

CANADA INFRASTRUCTURE BANK

Smart Cities Challenge

$300 million over 10 years, delivered by Infrastructure Canada

The Smart Cities Challenge is a competition open to all municipalities, local or regional governments and Indigenous communities (First Nations, Inuit, and Métis) across Canada. A smart cities approach means achieving meaningful outcomes for residents through the use of data and connected technology. The Challenge will fund smart city proposals that are truly exemplary, innovative, transformative, transferable, replicable and scalable. These could include proposals such as digital platforms providing real-time information on homeless shelters; or programs to deploy environmental sensors monitoring water flow to warn residents in at-risk areas of potential flooding. Depending on the nature and scope of the final proposal, implementation is expected to span between two to five years. Lessons learned from the entire Smart Cities Challenge process will be gathered from all participants and shared with Canadian communities.

The Smart Cities Challenge is a new way to work with communities. It:

- Applies an outcomes-based approach, tailored to the needs of residents.
- Helps communities increase their capacity to innovate.
- Inspires engagement at the community level, involving non-traditional partners.
- Replicates solutions that work in other communities.

A total of three competitions are envisaged over the life of the Challenge. Prizes for the first competition are as follows:

- One prize of $50 million open to communities of all sizes, regardless of population;
- Two prizes of $10 million open to all communities with populations under 500,000; and
- One prize of $5 million open to all communities with populations under 30,000.

Infrastructure Canada is engaging Indigenous leaders, communities and organizations to finalize the design of a competition specific to Indigenous communities that will reflect their unique circumstances. Indigenous communities are also eligible to compete for a prize in the current competition.

Post-Secondary Institutions Strategic Investment Fund

$2 billion over three years, delivered by Innovation, Science and Economic Development Canada

The innovation agenda is an inclusive approach to fostering a confident country of innovators. Quality infrastructure in post-secondary institutions is a key component for attracting and retaining talented people, boosting innovation and building a sustainable economy. Investments in post-secondary institutions' infrastructure are helping to build and modernize laboratories and commercialization spaces that will advance research and contribute to Canadian innovation and job creation. These investments also support the building and expansion of training facilities so that Canadians can hone and develop specialized skills suited to industry needs.

Budget 2016 announced $2 billion for infrastructure projects at post-secondary institutions over three years to enhance and modernize research and commercialization facilities, as well as industry-relevant training facilities at colleges and polytechnic institutions in Canada. These investments reinvigorate Canada's research and science base and address existing needs while contributing to Canada's long-term innovation and sustainability objectives. These investments will promote economic activity across the country and will benefit the Canadian economy and Canadian society well into the future.

5. CONCLUSION

The Investing in Canada plan is an ambitious long-term blueprint for investing in and building the infrastructure that Canada needs for today and for generations to come. It is focused on addressing infrastructure challenges across Canada and reflects the priorities of Canadians. It is a plan that seeks to benefit all Canadians. As with all long-term plans and major investments, the results will unfold over time. To ensure that the Investing in Canada plan is a success, the Government is working closely with other orders of government to deliver on its commitments and report regularly to Canadians.

The Government has been making significant and timely investments in Canada's infrastructure to address immediate challenges and achieve the objectives outlined in the Investing in Canada plan through the first phase launched in 2016.

The new long-term investments announced in Budget 2017, most of which began to deliver funding in 2018–19, will continue to address these challenges and objectives by making further transformative investments in Canada's infrastructure.

The Government is already well on its way in delivering the long-term initiatives under the Investing in Canada plan. Initiatives for national trade corridors, cultural spaces, and smart cities, plus many others, are underway. Furthermore, the Government has established the Canada Infrastructure Bank, which is working with project sponsors and private sector investors to identify investment opportunities that provide economic, social and environmental returns.

The Government is working closely with partners to deliver significant investments. The Minister of Infrastructure and Communities has announced the Investing in Canada Infrastructure Program with provinces and territories to deliver $33 billion in funding. In addition, separate bilateral agreements will deliver funding for Early Learning and Child Care, the National Housing Strategy and the Community Educational Infrastructure Initiative.

The Government is also putting into place the means to report to Canadians on the state of Canada's infrastructure and the Investing in Canada plan progress, investments and impacts in Canadians communities. Data from Canada's first Core Public Infrastructure Survey will be available in fall 2018 to strengthen future infrastructure planning. Infrastructure Canada will publish the Minister's Progress Report on the Investing in Canada plan annually, with the first report to be published in 2018. Reports will include an update on implementation and the results of investments to demonstrate how the plan is benefitting Canadians. The first report will include implementation and early results, while later reports will include progress towards long-term outcomes.

Investing in Canada is a plan for a prosperous, inclusive and sustainable future and it will have a transformative effect on Canada and Canadians. These investments in infrastructure over the next ten years will pay dividends for decades to come: delivering clean, sustained economic growth; building stronger, more inclusive communities; and creating more good, middle-class jobs for Canadians. Through the Investing in Canada plan, Canadian communities from coast-to-coast-to-coast will benefit from the many positive impacts of sound public infrastructure, improving lives and opening up opportunities in communities across the country.

ANNEX A: EXISTING INFRASTRUCTURE FUNDING

The Investing in Canada plan includes $92.2 billion in existing programs established prior to 2016. A summary of these programs is provided below.

FIGURE 10: EXISTING INFRASTRUCTURE FUNDING

PRE-2016 INFRASTRUCTURE PROGRAMS

($ millions)	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Infrastructure Canada													
Community Improvement Fund[1]	3,113	3,130	3,250	3,271	3,293	3,415	3,437	3,560	3,583	3,706	3,731	3,855	41,344
New Building Canada Fund	284	589	814	1,119	1,593	2,009	1,758	1,794	819	691	228	153	11,853
Building Canada Fund	563	370	455	312	203	165	126	120	21	0	0	0	2,335
P3 Canada Fund	168	230	210	290	262	0	53	0	0	0	0	0	1,213
Green Infrastructure Fund	45	43	23	31	46	41	42	42	32	32	31	21	428
Other Infrastructure Canada Programs[2]	114	133	85	34	0	0	0	0	0	0	0	0	366
Transport Canada													
Gateways and Corridors Programs	157	81	93	9	1	0	0	0	0	0	0	0	341
Regional Development Agencies													
Canada 150 (Budget 2015)	69	77	0	0	0	0	0	0	0	0	0	0	146
Total — Legacy Infrastructure Programs	**4,514**	**4,653**	**4,931**	**5,065**	**5,399**	**5,630**	**5,417**	**5,516**	**4,455**	**4,429**	**3,989**	**4,029**	**58,026**

SOCIAL AND GREEN INFRASTRUCTURE

Canada Mortgage and Housing Corporation													
Existing Housing Programs	2,021	2,012	1,953	1,683	1,590	1,504	1,440	1,288	1,134	1,006	874	759	17,262
Indigenous and Northern Affairs[3]													
Support for On-Reserve Housing	133	162	164	165	165	165	165	165	165	165	165	165	1,940
Support for Education Facilities	258	296	263	263	238	238	238	238	238	238	238	238	2,984
Social Community Infrastructure	421	461	485	485	492	514	537	559	583	607	631	656	6,430
Water and Wastewater Infrastructure	180	208	204	204	204	204	204	204	204	204	204	204	2,430
First Nations Infrastructure Fund	18	15	15	16	16	16	16	16	0	0	0	0	128
Health Canada[3]													
On-Reserve Health Infrastructure	82	86	49	49	49	49	49	49	49	49	49	49	654
Employment and Social Development Canada, Public Health Agency of Canada and Health Canada[3]													
Indigenous Early Learning and Childcare	133	133	133	133	133	133	133	133	133	133	133	133	1,591
Employment and Social Development Canada													
Homelessness Partnering Strategy	119	119	119	0	0	0	0	0	0	0	0	0	357
Canadian Heritage													
Canada Cultural Spaces Fund	30	30	30	30	30	30	30	30	30	30	30	30	360
Total — Social and Green Infrastructure	**3,395**	**3,521**	**3,414**	**3,027**	**2,916**	**2,852**	**2,811**	**2,681**	**2,535**	**2,430**	**2,322**	**2,232**	**34,137**
Total Pre-2016 Infrastructure Programs	**7,909**	**8,174**	**8,345**	**8,092**	**8,315**	**8,482**	**8,228**	**8,197**	**6,990**	**6,859**	**6,311**	**6,261**	**92,163**

[1] Includes the Gas Tax Fund and the incremental GST rebate for municipalities

[2] Includes the Canada Strategic Infrastructure Fund, Border Infrastructure Fund, PT Base Funding, and the Inuvik to Tuktoyaktuk Project

[3] As of November 30, 2017, programming under Indigenous and Northern Affairs Canada and Health Canada was transferred to the newly-created Department of Indigenous Services Canada

ANNEX B: SHARED RESULTS

The Government has made a strong commitment to deliver real results to Canadians. In fact, every Minister's mandate letter committed each Minister to track and report on the progress of the Government's commitments; assess the effectiveness of its work; and align resources with priorities to deliver results for Canadians.

The Investing in Canada plan's results and delivery strategy begins with the three overarching objectives and the seven shared outcomes presented in Section 3 of this document. This framework of shared outcomes will shape the way the Government selects and reports on projects funded under the Investing in Canada plan.

Shared Outcomes and Performance Indicators

The Government will track and measure the seven shared outcomes using high-level, long-term performance indicators providing concrete measures of the impact the Plan will have on the lives of Canadians. Many of these performance indicators will use existing data sources, while others will use new data sources that are being developed with funding from the Plan. Examples of performance indicators are listed below; these will be refined as the Plan progresses.

OUTCOME 1: RATE OF ECONOMIC GROWTH IS INCREASED IN AN INCLUSIVE AND SUSTAINABLE WAY

Example Indicators

- Change in supply chain fluidity/performance (measured by the end-to-end multimodal transit time of freight imports from ports in Asia and Europe to inland North American markets via Canadian ports)
- Basic northern transportation infrastructure and efficiency, as measured by cargo off-load times for sealifts, and weather information availability and reliability
- Percentage of projects that incorporate community employment benefits

OUTCOME 2: ENVIRONMENTAL QUALITY IS IMPROVED, GHG EMISSIONS ARE REDUCED AND RESILIENCE OF COMMUNITIES IS INCREASED

OUTCOME 2.1: REDUCED GREENHOUSE GAS EMISSIONS

Example Indicators

- Percentage change in total national greenhouse gas emissions generated from the energy, building, transportation, and waste sectors
- Percentage of non-emitting electricity generation
- Emissions intensity level (greenhouse gas emissions per dollar of GDP)

OUTCOME 2.2: IMPROVED RESILIENCY FOR COMMUNITIES

Example Indicators

- Percentage of municipalities that have factored climate change adaptation in the decision-making process
- Number of communities better protected from climate change impacts as a result of federal investments
- Percentage of funded infrastructure projects that incorporate natural infrastructure solutions under Integrated Bilateral Agreement — Adaptation, Resiliency and Disaster Mitigation and Environmental Quality sub-streams and Disaster Mitigation Adaptation Fund

OUTCOME 2.3: IMPROVED ENVIRONMENTAL QUALITY

Example Indicators

- Percentage of communities across Canada with sustained boil water advisories per year
- Percentage of First Nations communities with improved solid waste systems
- Percentage of wastewater systems that need to be upgraded to meet the effluent quality standards of the Federal Wastewater Systems Effluent Regulations
- Quantity of solid waste material diverted per capita
- Number of long-term drinking water advisories affecting public drinking water systems on First Nation reserves

OUTCOME 3: URBAN MOBILITY IN CANADIAN COMMUNITIES IS IMPROVED

Example Indicators

- Modal share of public transit and active transportation
- Percentage of new social and affordable housing that is within 1,000 metres of a transit station or stop
- Percentage of Canadians living within 400 metres of a transit station or stop
- Percentage of Canadians living within 1,000 metres of a rapid transit station

OUTCOME 4: HOUSING IS AFFORDABLE AND IN GOOD CONDITION, AND HOMELESSNESS IS REDUCED YEAR OVER YEAR

Example Indicators

- Number of households whose housing needs are significantly reduced or eliminated
- Number of social and affordable units renewed
- Number of new social and affordable housing units created
- Estimated number of shelter users who are chronically homeless
- Percentage of First Nations housing that is adequate as assessed and reported annually by First Nations

OUTCOME 5: EARLY LEARNING AND CHILD CARE IS OF HIGH QUALITY, AFFORDABLE, FLEXIBLE AND INCLUSIVE

Example Indicators

- Number of children in regulated child care spaces and/or early learning programs
- Number of children benefitting from subsidies (or other financial supports for child care)

OUTCOME 6: CANADIAN COMMUNITIES ARE MORE INCLUSIVE AND ACCESSIBLE

Example Indicators

- Percentage of public transit fleets and stations that allow for accessibility
- Percentage of communities with accessible sport and recreational facilities by provinces and territories
- Percentage of new social and affordable housing that allow for accessibility
- Percentage of Canadians that rate the quality of cultural, arts, and heritage facilities in their communities as very good
- Percentage of Official-Language Minority Community (OLMC) population with access to OLMC cultural or community infrastructure in their communities
- Number of health facilities in First Nations communities that have been replaced or undergone renovations to improve quality

OUTCOME 7: INFRASTRUCTURE IS MANAGED IN A MORE SUSTAINABLE WAY

Example Indicators

- Amount of investment leveraged through engagement of private capital by the Canada Infrastructure Bank
- Percentage of communities without access to the continental grid that experience power disruptions in a year
- Level of infrastructure investment by order of government and asset class
- Change in remaining useful life and physical condition by infrastructure asset class
- Percentage of municipalities that practice asset management

ANNEX C: PARTNERSHIPS WITH PROVINCES AND TERRITORIES

The Investing in Canada plan is an evolution in how the federal government delivers infrastructure funding. It moves towards an approach that promotes partnerships with other orders of government to align priorities and programs. This is an important shift in approach, as these partnerships allow the federal government to leverage and thus significantly increase the reach of funding from the Plan. Bilateral agreements with provinces and territories in particular represent a key delivery mechanism for the Plan.

Investing in Canada Infrastructure Program

$33 billion over 10 years, delivered by Infrastructure Canada

The Investing in Canada Infrastructure Program delivers $33 billion in funding through integrated bilateral agreements (IBAs) between the federal government and each of the provinces and territories.

IBAs give the provinces and territories flexibility in how they invest funding within the context of the Government's national objectives. The IBAs cover investments in public transit, green, rural and northern communities, and cultural and recreation infrastructure and establish the terms and conditions by which infrastructure funding will be delivered over 10 years.

The IBAs take an outcomes-based approach to funding, a significant change from the way infrastructure funding was allocated in the past. Provinces and territories submit projects that align to program outcomes, identified for each funding stream, in order to be considered eligible for funding. This approach provides provinces and territories with the flexibility to determine how best to achieve results within the context of defined program outcomes.

Supporting the outcomes-based approach is a robust reporting strategy that focusses on demonstrating results for Canadians. Provinces and territories will use approximately 40 common indicators to report on investments funded through IBAs. Common indicators facilitate consistent reporting across all jurisdictions and allow for the aggregation of results at a national level. A subset of eight of these indicators have national targets associated with them. These targets are aspirational and will be challenging to achieve. They reflect the Government of Canada's intention to deliver positive and meaningful change for Canadians. Given the long-term nature of infrastructure investments, targets will be measured using expected results. Actual results will likely only be available after project completion, beyond the timeline of the IBAs.

National targets for the IBAs are as follows:

1. Increase by 20 % the modal share for public transit and active transportation;
2. Maintain at least 96 % as the percentage of people in a municipality with a transit system that live in the service area of their transit system;
3. Contribute to a reduction of greenhouse gas emissions of 10 megatons;
4. Reduce by 40 % the number of long-term drinking water advisories in non-reserve communities;
5. Increase the number of wastewater systems achieving compliance with federal effluent regulations: 95–100 % for high risk; 85–100 % for medium risk;
6. Ensure 100 % of federally funded public facing infrastructure will meet the highest published applicable accessibility standard in a respective jurisdiction;
7. Increase by 3 percentage points the number of rural households that have access to the highest broadband speed range available in their jurisdictions; and,
8. Increase the efficiency of electricity generation by 4% (kilowatt hour per litre/m^3 of fuel used) in communities that are dependent on fossil-fuel for electricity generation.

The contribution of each province and territory will be specified in their IBA and each jurisdiction is expected to work towards achieving the national targets with two exceptions: only territories will have targets associated with energy security as the Arctic Energy Fund was allocated only to the territories and Nunavut will not be expected to set targets related to public transit. In addition, the reduction of greenhouse gas emissions by 10 megatons is a national target only. The expected contribution of each province and territory will not be specified in IBAs.

The IBAs also require provinces and territories to develop and submit multi-year plans that identify potential projects. With the emphasis on outcomes, and with predictable, long-term funding, the provinces and territories have the tools they need to structure their investments in a way that achieves meaningful, long-term results.

Starting in 2018–19, the IBAs provide the following funding (Figure 11):

- $20.1 billion for public transit infrastructure, including new construction and rehabilitation, with provincial and territorial allocations determined using a formula based on ridership (70%) and population (30%). Within each jurisdiction, funding is further allocated to existing public transit systems based on their respective ridership, with some flexibility possible to address regional requirements.
- $9.2 billion for green infrastructure to support GHG mitigation projects in the provinces and territories; infrastructure that will help communities respond and adapt to the impacts of a changing climate; and other green infrastructure that supports a healthy environment, such as water and wastewater infrastructure.
- $1.3 billion for community, cultural and recreation infrastructure to build stronger communities and neighbourhoods.
- $2 billion for the unique infrastructure needs of rural and northern communities. Eligible projects include, among others, improving road access, and expanding broadband Internet connectivity.
    - An additional $400 million from the Arctic Energy Fund will be allocated to the territories, through the IBAs, to help build energy security to northern communities, including indigenous communities.

FIGURE 11: INVESTING IN CANADA INFRASTRUCTURE PROGRAM FUNDING

JURISDICTION	PUBLIC TRANSIT	GREEN	COMMUNITY, CULTURE & RECREATION	RURAL AND NORTHERN †	TOTAL ALLOCATION ††
Newfoundland and Labrador	$109,071,324	$302,364,807	$39,768,539	$104,638,175	$555,842,846
Prince Edward Island	$27,063,775	$228,147,387	$29,060,925	$82,705,236	$366,977,323
Nova Scotia	$289,589,324	$381,914,606	$51,245,475	$105,743,756	$828,493,161
New Brunswick	$165,202,662	$347,151,232	$46,230,038	$114,633,636	$673,217,569
Quebec*	$5,182,392,771	$1,808,076,797	$257,003,028	$288,465,324	$7,535,937,919
Ontario**	$8,340,401,116	$2,848,855,330	$407,159,893	$250,067,117	$11,846,483,456
Manitoba***	$546,139,840	$451,790,568	$61,326,732	$112,819,014	$1,172,076,153
Saskatchewan	$307,871,025	$416,334,673	$56,211,382	$115,905,927	$896,323,008
Alberta	$2,096,548,228	$1,001,082,871	$140,575,109	$159,650,831	$3,397,857,038
British Columbia***	$2,691,101,894	$1,115,494,721	$157,081,719	$166,001,827	$4,129,680,161
Yukon	$9,944,170	$207,065,850	$26,019,416	$202,587,865	$445,617,300
Northwest Territories	$8,344,774	$208,230,295	$26,187,414	$328,014,343	$570,776,826
Nunavut	$6,067,664	$207,079,637	$26,021,405	$327,592,915	$566,761,621
TOTAL	**$19,779,738,568**	**$9,523,588,774**	**$1,323,891,073**	**$2,358,825,966**	**$32,986,044,381**

† Includes $400 million Arctic Energy Fund in the territories.

†† Figures may not sum to total due to rounding. Total population data is calculated using 2016 census data.

* Allocation amounts for Quebec include $1.283 billion that could be used for Montréal's light rail network (Réseau express métropolitain).

** Allocation amounts for Ontario include over $1.091 billion for Ottawa Light Rail Phase 2 and $384.2 million for Port Lands Flood Protection and Enabling Infrastructure project.

*** Allocation amounts for British Columbia and Manitoba include $212.3 million for North Shore Wastewater Treatment Plant (BC) and $247.5 million for Lake Manitoba/Lake St. Martin Outlet Channel flood mitigation (MB) announced in Budget 2016.

The difference between the totals of provincial and territorial allocations and the numbers for each stream in the above text is due to the removal of federal administration costs prior to allocation to each province and territory. Administration costs for each province and territory will come from their allocations in the table above.

Cost-sharing ensures that other partners, such as provinces, territories, municipalities and the private sector make equitable investments in federally-funded projects. In addition, recipients cannot seek other sources of federal funds if they receive the maximum cost-share under the Investing in Canada Infrastructure Program. The Government provides funding for projects on the following basis:

- up to 40% federal funding for projects with municipal and not-for-profit partners
- up to 50% federal funding for projects with provincial partners
- up to 75% federal funding for projects with Indigenous and territorial partners
- up to 25% federal funding for projects with for-profit private sector partners, excluding cultural and recreation infrastructure projects (note: federal contributions to for-profit entities are repayable)

Indigenous recipients can access additional funding from any applicable federal source to a maximum federal contribution of 100% from all sources. Proposals for off-reserve projects will be considered if the costs of an eligible activity will be shared by at least one additional eligible or ultimate project recipient.

For public transit in the provinces, the Government of Canada provides up to 50% of eligible costs for rehabilitation projects; however, funding for rehabilitation projects is capped at 15% of total public transit funding. For new public transit construction and expansion projects, the Government provides up to 40% of eligible costs.

For projects under the rural and northern communities infrastructure stream, the Government of Canada invests up to 50% for provincial, municipal and not-for-profit projects, and up to 60% for projects in provincial municipalities with populations of less than 5,000.

National Housing Strategy Federal-Provincial-Territorial Housing Partnership Framework

$7.7 billion over nine years,[iii] delivered by Canada Mortgage and Housing Corporation

The National Housing Strategy's investment in provinces and territories will be committed through bilateral agreements. The National Housing Strategy recognizes that housing needs vary across the country. Funding will support regional needs and priorities related to community and affordable housing repair, construction and rental assistance.

Early Learning and Child Care Bilateral Agreements

$1.2 billion over three years, delivered by Employment and Social Development Canada

The Multilateral Early Learning and Child Care Framework sets the foundation for governments to work towards a shared long-term vision where all children across Canada can experience the enriching environment of quality early learning and child care. To implement the Multilateral Framework, $1.2 billion is provided to provinces and territories under the Early Learning and Child Care Bilateral Agreements.

Through these agreements, provinces and territories will further build their early learning and child care systems by addressing local, regional and system priorities that have an impact on families more in need by increasing the quality, accessibility, affordability, flexibility and inclusivity in early learning and child care.

iii National Housing Strategy bilateral funding allocated through the Investing in Canada Plan.

Common Statement of Principles on Shared Health Priorities — Bilateral Agreements

$1 billion for home care infrastructure, delivered by Health Canada as part of an $11 billion, 10 year multilateral agreement

Federal, provincial and territorial governments reached a multilateral agreement, the Common Statement of Principles on Shared Health Priorities, which outlines key priorities for federal investments in mental health and addictions ($5 billion over 10 years), and home and community care ($6 billion over 10 years), including $1 billion for home care infrastructure under the Investing in Canada plan.

On home care infrastructure, provinces and territories agreed to focus funding on enhancing home care infrastructure, such as digital connectivity, remote monitoring technology and facilities for community based service delivery.

The Government of Canada is working with each province and territory to finalize bilateral agreements for the first four years of the funding that set out details of how each jurisdiction will use federal funding, consistent with the actions outlined in the Common Statement of Principles.

Community Educational Infrastructure Initiative

$80 million over 10 years, delivered by Canadian Heritage

Through existing bilateral education agreements with provinces and territories, this initiative will provide an additional $80 million over 10 years to modernize and build community educational infrastructure in Official-Language Minority Communities (OLMCs).

ANNEX D: OVERVIEW OF NEW FUNDING BY DEPARTMENT

FIGURE 12: INVESTING IN CANADA PLAN: OVERVIEW OF NEW FUNDING BY DEPARTMENT — $95.6 BILLION [i] (**$14.4 Billion** Budget 2016 + **$81.2 Billion** Budget 2017)

INFRASTRUCTURE CANADA — $56.4B

Budget 2016

- Public Transit Infrastructure Fund **($3.4 Billion)**
- Clean Water and Wastewater Fund **($2 Billion)**
- Municipalities for Climate Innovation Program **($75 Million)**
- Municipal Asset Management Program **($50 Million)**
- Codes, Guides and Specifications for Climate-Resilient Public Infrastructure **($40 Million)**
- Lake Manitoba/Lake St. Martin Outlet Channels **($247.5 Million)**
- North Shore Wastewater Treatment Plant **($212.3 Million)**

Budget 2017

- Investing in Canada Infrastructure Program **($33.1 Billion)**
- Canada Infrastructure Bank **($15 Billion)**
- Disaster Mitigation and Adaptation Fund **($2B)**
- Smart Cities Challenge **($300M)**

EMPLOYMENT AND SOCIAL DEVELOPMENT CANADA — $9.8B

Budget 2016

- Early Learning and Child Care **($400 Million)**
- Homelessness Partnering Strategy **($111.77 Million)**
- First Nations and Inuit Child Care Initiative **($62.8 Million)**
- Enabling Accessibility Fund **($4 Million)**

Budget 2017

- Early Learning and Child Care **($7 Billion)**
- Homelessness Partnering Strategy **($2.13 Billion)**
- Enabling Accessibility Fund **($77 Million)**
- Women in Construction Fund **($10 Million)**

CANADIAN HERITAGE — $548.2M

Budget 2016

- Canada Cultural Spaces Fund **($168.2 Million)**

Budget 2017

- Canada Cultural Spaces Fund **($300 Million)**
- Community Educational Infrastructure **($80 Million)**

CANADA MORTGAGE AND HOUSING CORPORATION — $15.6B

Budget 2016

- Investment in Affordable Housing **($504.4 Million)**
- Renovation and Retrofit of Social Housing **($574 Million)**[ii]
- Increasing Affordable Housing for Seniors **($200.7 Million)**
- Renovation and Retrofit On Reserve **($127.7 Million)**
- Northern Housing **($97.7 Million)**
- Supporting Shelters for Victims of Family Violence **($89.9 Million)**
- Shelters for First Nations Victims of Family Violence **($10.4 Million)**
- Aboriginal Capacity and Skills Development **($10 Million)**

Budget 2017

- FPT Housing Partnership Framework **($7.7 Billion)**
- National Housing Co-Investment Fund **($5.1 Billion)**
- Other National Housing Strategy Initiatives **($1.1 Billion)**

[ii] *A portion of this envelope ($77 Million) is federally delivered, thus not under a bilateral agreement.*

TRANSPORT CANADA — $5.4B

Budget 2017

- National Trade Corridors Fund **($2 Billion)**
- Connecting Communities by Rail and Water **($1.925 Billion)** [iii]
- Oceans Protection Plan **($1.325 Billion)** [iii]
- Modernizing Transportation **($76.7 Million)**
- Trade and Transportation Information System **($50 Million)**
- Climate Risk Assessments **($16.4 Million)**
- Heavy-Duty Vehicle and Off-Road Regulations **($16 Million)**

[iii] *Include funding to support capital projects where costs are amortized over the useful life of the asset.*

Initiatives delivered through Bilateral Agreements are in BLUE

[i] *Totals do not add up to $95.6 Billion due to fiscal framework adjustments, rounding and other revenues.*

INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA — $2.65B

Budget 2016

- Post-Secondary Institutions Strategic Investment Fund ($2 Billion)
- Connect to Innovate ($500 Million)

Budget 2017

- Innovation Superclusters Initiative ($150 Million)

INDIGENOUS SERVICES CANADA — $6.6B

Budget 2016

- Water and Wastewater ($1.8 Billion)
- On-Reserve Housing Funds ($416.6 Million)
- Health Facilities Program ($270 Million)
- First Nations Infrastructure Fund — Cultural and Recreational Centers ($76.9 Million)
- Aboriginal Head Start on Reserve ($51.2 Million)

Budget 2017

- Improving Indigenous Communities ($4 Billion)
- Capital Facilities and Maintenance program ($15 Million)

NATURAL RESOURCES CANADA — $967.5M

Budget 2016

- Electric Vehicle and Alternative Fuel Infrastructure Deployment and Technology Demonstration ($62.5 Million)
- Green Municipal Fund ($62.5 Million)
- Regional Electricity Cooperation and Strategic Infrastructure ($2.5 Million)

Budget 2017

- Clean Energy for Rural and Remote Communities ($220 Million)
- Emerging Renewable Power ($200 Million)
- Energy Efficient Buildings ($182 Million)
- Electric Vehicle and Alternative Fuel Infrastructure ($120 Million)
- Smart Grid ($100 Million)
- Building Regional Adaptation Capacity and Expertise ($16 Million)
- National-Scale Knowledge Synthesis and Dissemination ($2 Million)

FINANCE CANADA — $4.0B

Budget 2017

- Reserved Green Funding ($2 Billion)

HEALTH CANADA

Budget 2017

- Home Care Infrastructure ($1 Billion)

CROWN-INDIGENOUS RELATIONS AND NORTHERN AFFAIRS CANADA

Budget 2016

- Inuit Housing ($80 Million)
- First Nations Waste Management Initiative ($408.9 Million)

Budget 2017

- Indigenous Community-Based Climate Monitoring Program ($72.7 Million)
- Climate Change Preparedness in the North Program — Implementation of Adaptation Actions in the North ($55.9 Million)
- First Nation Adapt Program — Flood Plain Mapping ($27 Million)

ENVIRONMENT AND CLIMATE CHANGE CANADA

Budget 2016

- Green Municipal Fund ($62.5 Million)

Budget 2017

- Canadian Centre for Climate Services ($107.9 Million)

REGIONAL DEVELOPMENT AGENCIES

Budget 2016

- Canada 150 Community Infrastructure Program ($150 Million)

PARKS CANADA

Budget 2016

- National Cost-Sharing Program for Heritage Places ($20 Million)

PUBLIC HEALTH AGENCY OF CANADA

Budget 2016

- Aboriginal Head Start in Urban and Northern Communities ($15.4 Million)

Initiatives delivered through Bilateral Agreements are in BLUE

ENDNOTES

1 Advisory Council on Economic Growth. "Unleashing Productivity Through Infrastructure." *Advisory Council on Economic Growth*, 2016, https://www.budget.gc.ca/aceg-ccce/pdf/infrastructure-eng.pdf. Accessed 14 February 2018.

2 Statistics Canada. "Table 031-0005 — Flows and stocks of fixed non-residential capital, by industry and asset, Canada, provinces and territories, annual (dollars)." CANSIM (database). *Statistics Canada*, Government of Canada, 2017, http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=310005. Accessed: 18 December 2017.

3 Infrastructure Canada. "2015–2016 Departmental Performance Report, Section III: Analysis of Programs and Internal Services." *Infrastructure Canada*, Government of Canada, 2016, http://www.infrastructure.gc.ca/pub/dpr-rmr/2016/2016-03-eng.html. Accessed 14 February 2018.

4 Infrastructure Canada. "2014–2015 Departmental Performance Report." *Infrastructure Canada*, Government of Canada, 2016, http://www.infrastructure.gc.ca/pub/dpr-rmr/2015/2015-fig-eng.html. Accessed 14 February 2018.

5 Statistics Canada. "National Economic Accounts Division." Calculation by *Infrastructure Canada*, Government of Canada. https://www.statcan.gc.ca/eng/nea/list/nea. Accessed 14 February 2018.

6 The Canadian Chamber of Commerce. "The Foundations of a Competitive Canada: The Need for Strategic Infrastructure Investment." *The Canadian Chamber of Commerce*, Government of Canada, 2013 http://www.chamber.ca/media/blog/131218-The-Foundations-of-a-Competitive-Canada/131218_The_Foundations_of_a_Competitive_Canada.pdf. Accessed 14 February 2018.

7 Canadian Infrastructure Report Card. "Homepage." *Canadian Infrastructure Report Card*, n.p., 2016, http://canadianinfrastructure.ca/. Accessed 29 August 2017.

8 Canadian Infrastructure Report Card. "About the project." *Canadian Infrastructure Report Card*, n.p., 2016, http://www.canadinfrastructure.ca/en/about.html. Accessed 29 August 2017.

9 Canadian Infrastructure Report Card. "Informing the Future: The Canadian Infrastructure Report Card." *Canadian Infrastructure Report Card*, n.p., 2016, http://www.canadainfrastructure.ca/downloads/Canadian_Infrastructure_Report_2016.pdf. Accessed 5 March 2018.

10 The Canadian Chamber of Commerce. "Stuck in Traffic for 10,000 Years." *The Canadian Chamber of Commerce*, n.p., 2017, http://sudburychamber.ca/wp-content/uploads/2017/07/StuckInTrafficFor10000Years.pdf. Accessed 14 February 2018.

11 Indigenous Services Canada. "Ending long-term drinking water advisories in First Nation communities." Indigenous Services Canada, Government of Canada, 2018, https://www.aadnc-aandc.gc.ca/eng/1506514143353/1506514230742. Accessed 5 March 2018.

12 Statistics Canada. "Core housing need, 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/chn-biml/index-eng.cfm. Accessed 28 January 2018.

13 The Canada Mortgage and Housing Corporation. "Canadian Housing Observed 2014: Housing Affordability and Need." *CMHC*, Government of Canada, 2014, https://www.cmhc-schl.gc.ca/en/corp/about/cahoob/upload/housing_affordability_and_need_68193_w.pdf. Accessed 14 February 2018.

14 Organisation for Economic Co-operation and Development. "Environment at a Glance 2015, OECD Indicators." *OECD*, n.p., 2015, http://www.oecd-ilibrary.org/environment/environment-at-a-glance-2015_9789264235199-en. Accessed 29 August 2017.

15 Canadian Infrastructure Report Card. "Informing the Future: Key Messages." *Canadian Infrastructure Report Card*, n.p., 2016, http://www.canadainfrastructure.ca/downloads/Canadian_Infrastructure_Report_Card_Key_Messages_2016.pdf Accessed 29 August 2017.

16 Federation of Canadian Municipalities. "Asset Management Making Better Infrastructure Investment Decisions." *Federation of Canadian Municipalities*, n.p., 2017, https://fcm.ca/home/programs/municipal-asset-management-program/asset-management---making-better-infrastructure-investment-decisions.htm Accessed 6 October 2017.

17 Canadian Infrastructure Report Card. "Informing the Future: Key Messages." *Canadian Infrastructure Report Card*, n.p., 2016, http://www.canadainfrastructure.ca/downloads/Canadian_Infrastructure_Report_Card_Key_Messages_2016.pdf Accessed 29 August 2017.

18 The Canadian Council for Public-Private Partnerships. "Report: What the World Can Learn from Canada's P3 Record." *PPP Council*, n.p., 2015, http://www.pppcouncil.ca/web/News_Media/2015/Report__What_the_World_Can_Learn_from_Canada_s_P3_Record.aspx?WebsiteKey=712ad751-6689-4d4a-aa17-e9f993740a89. Accessed 14 February 2018.

19 PPP Canada. "The P3 Canada Fund." *PPP Council*, n.p., n.d., http://www.p3canada.ca/en/p3-canada-fund/the-p3-canada-fund//. Accessed 26 January 2018.

20 Environment and Climate Change Canada. "Climate Data and Scenarios for Canada: Synthesis of Recent Observation and Modelling Results." *ECCC*, Government of Canada, 2017, https://www.canada.ca/en/environment-climate-change/services/climate-change/publications/data-scenarios-synthesis-recent-observation/chapter-2.html. Accessed 29 August 2017.

21 Team Green Analytics. "The Economic Impacts of the Weather Effects of Climate Change on Communities: Final Report." *Green Analytics Corp. & Ontario Centre for Climate Impacts and Adaptation Resources*, n.p., 2015, http://assets.ibc.ca/Documents/Studies/IBC-The-Economic-Impacts.pdf, Accessed 14 February 2018.

22 Environment and Climate Change Canada. "Canada's Second Biennial Report on Climate Change." *ECCC*, Government of Canada, 2016, https://www.ec.gc.ca/ges-ghg/02D095CB-BAB0-40D6-B7F0-828145249AF5/3001%20UNFCCC%202nd%20Biennial%20Report_e_v7_lowRes.pdf. Accessed 14 February 2018.

23 Environment and Climate Change Canada. "Canada's 2016 greenhouse gas emissions reference case." *ECCC*, Government of Canada, 2017, https://www.canada.ca/en/environment-climate-change/services/climate-change/publications/2016-greenhouse-gas-emissions-case.html. Accessed 29 August 2017.

24 Environment and Climate Change Canada. "Greenhouse gas emissions by Canadian economic sector." *ECCC*, Government of Canada, 2017, https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions/canadian-economic-sector.html. Accessed 29 August 2017.

25 National Round Table on the Environment and the Economy. "Paying the Price: The Economic Impacts of Climate Change for Canada." *NRT*, Government of Canada, 2011, http://nrt-trn.ca/wp-content/uploads/2011/09/paying-the-price.pdf. Accessed 29 August 2017.

26 Office of the Parliamentary Budget Officer. "Estimate of the Average Annual Cost for Disaster Financial Assistance Arrangements due to Weather Events." *PBO*, Government of Canada, 2016, http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2016/DFAA/DFAA_EN.pdf. Accessed 14 February 2018.

27 Public Safety Canada. "Canada's National Disaster Mitigation Strategy." *Public Safety Canada*, Government of Canada, 2018, https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mtgtn-strtgy/index-en.aspx. Accessed 9 March 2018.

28 The World Bank: Data. "Trade (% of GDP)." *The World Bank*, n.p., 2017, https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS. Accessed 30 August 2017.

29 International Transport Forum. "ITF Transport Outlook 2015." *International Transport Forum*, OECD, 2015, http://www.oecd-ilibrary.org/transport/itf-transport-outlook-2015_9789282107782-en. Accessed 14 February 2018.

30 Advisory Council on Economic Growth. "Unleashing Productivity Through Infrastructure." *Advisory Council on Economic Growth*, 2016, https://www.budget.gc.ca/aceg-ccce/pdf/infrastructure-eng.pdf. Accessed 14 February 2018.

31 Statistics Canada. "Population size and growth in Canada: Key results from the 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www.statcan.gc.ca/daily-quotidien/170208/dq170208a-eng.htm. Accessed 30 August 2017.

32 Statistics Canada. "Census in Brief: Municipalities in Canada with population decreases between 2011 and 2016." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016002/98-200-x2016002-eng.cfm. Accessed 30 August 2017.

33 Statistics Canada, "Population and Dwelling Count Highlight Tables, 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/pd-pl/index-eng.cfm. Accessed 30 August 2017.

34 Statistics Canada, "Population and Dwelling Count Highlight Tables, 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/pd-pl/index-eng.cfm. Accessed 30 August 2017.

35 Statistics Canada. "Population size and growth in Canada: Key results from the 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www.statcan.gc.ca/daily-quotidien/170208/dq170208a-eng.htm. Accessed 30 August 2017.

36 Transport Canada. "Transportation in Canada 2011, Comprehensive Review." *Transport Canada*, Government of Canada, 2012, https://www.tc.gc.ca/media/documents/policy/Transportation_in_Canada_2011.pdf. Accessed 14 February 2018.

37 Benjamin Dachis. "Cars, Congestion and Costs: A New Approach to Evaluating Government Infrastructure Investment." *C.D. Howe Institute*, n.p., 2013, https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary_385_0.pdf. Accessed 14 February 2018.

38 Toronto Region Board of Trade. "A Green Light To Moving The Toronto Region: Paying For Public Transportation Expansion." *Toronto Region Board of Trade*, n.p., 2013, https://www.bot.com/portals/0/unsecure/advocacy/DiscussionPaper_AGreenLight_March18_2013.pdf. Accessed 14 February 2018.

39 Statistics Canada. "Gross domestic product at basic prices, by census metropolitan area, 2009 to 2013." *Statistics Canada*, Government of Canada, 2017, http://statcan.gc.ca/daily-quotidien/170127/dq170127b-eng.htm. Accessed 30 August 2017.

40 Statistics Canada. "Measuring the economy, region by region." *Statistics Canada*, Government of Canada, 2017, http://www.statcan.gc.ca/eng/blog/cs/economy. Accessed 30 August 2017.

41 International Energy Agency. "Energy Technology Perspectives 2016: Towards Sustainable Urban Energy Systems. Executive Summary." *IEA*, n.p., 2016, http://www.iea.org/Textbase/npsum/ETP2016SUM.pdf. Accessed 14 February 2018.

42 City of Vancouver. "Greenest City 2020 Action Plan Part Two: 2015–2020." *City of Vancouver*, n.p., 2015, http://vancouver.ca/files/cov/greenest-city-2020-action-plan-2015-2020.pdf. Accessed 14 February 2018.

43 CUTA. "Canadian Transit Infrastructure Needs 8th Edition." *CUTA*, n.p., 2015, http://cutaactu.ca/sites/default/files/infrastructure_needs_-_8th_edition_-_final.pdf. Accessed 14 February 2018.

44 Statistics Canada. "Aboriginal peoples in Canada: Key results from the 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www.statcan.gc.ca/daily-quotidien/171025/dq171025a-eng.htm. Accessed 14 February 2018.

45 Statistics Canada. "Aboriginal Peoples: Fact Sheet for Canada." *Statistics Canada*, Government of Canada, 2015, http://www.statcan.gc.ca/pub/89-656-x/89-656-x2015001-eng.htm. Accessed 31 August 2017.

46 Office of the Auditor General of Canada. "2009 Fall Report of the Auditor General of Canada." *Office of the Auditor General of Canada*, Government of Canada, 2009, http://www.oag-bvg.gc.ca/internet/English/parl_oag_200911_06_e_33207.html. Accessed 14 February 2018.

47 James Knowles. "Power Shift: Electricity for Canada's Remote Communities." *The Conference Board of Canada*, n.p., 2016, http://www.conferenceboard.ca/(X(1)S(trku25x0weeomnrbzk0anfnt))/e-library/abstract.aspx?did=8249&AspxAutoDetectCookieSupport=1. Accessed 14 February 2018.

48 Standing Committee on Energy, the Environment and Natural Resources, "Evidence", *Senate of Canada*, 41th Parliament, 2nd Session (Alain Barriault, President and Chief Executive Officer, Qulliq Energy Corporation), 20 November 2014, https://sencanada.ca/en/Content/Sen/committee/412/enev/51754-e. Accessed 14 February 2018.

49 Government of Canada. "Pathways: Connecting Canada's Transportation System to the World — Volume 1." *The Canada Transportation Act Review Report*, Government of Canada, 2016, http://www.tc.gc.ca/eng/ctareview2014/CTAR_Vol1_EN.pdf. Accessed 14 February 2018.

50 Standing Senate Committee on Transport and Communications, "One Size Doesn't Fit All: The Future Growth and Competitiveness of Canadian Air Travel" *Senate Canada*, Government of Canada, 2013, https://sencanada.ca/Content/SEN/Committee/411/trcm/rep/rep08apr13-e.pdf. Accessed 14 February 2018.

51 Office of the Auditor General of Canada. *2017 Spring Reports of the Auditor General of Canada to the Parliament of Canada*, "Report 6 — Civil Aviation Infrastructure in the North — Transport Canada." (2017)

52 Employment and Social Development Canada. "Homelessness Partnering Strategy, 2005-2014 Highlights of the National Shelter Strategy." *ESDC*, Government of Canada, 2016, http://www12.esdc.gc.ca/sgpe-pmps/servlet/sgpp-pmps-pub?lang=eng&curjsp=p.5bd.2t.1.3ls@-eng.jsp&curactn=dwnld&pid=53801&did=4860&_ga=2.90884061.692313965.1503953331-151621251.1488472117. Accessed 14 February 2018.

53 Statistics Canada."Core housing need, 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/chn-biml/index-eng.cfm. Accessed 14 February 2018.

54 Statistics Canada."Core housing need, 2016 Census." *Statistics Canada*, Government of Canada, 2017, http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/chn-biml/index-eng.cfm. Accessed 14 February 2018.

55 Employment and Social Development Canada. "Homelessness Partnering Strategy, 2005-2014 Highlights of the National Shelter Strategy." *ESDC*, Government of Canada, 2016, http://www12.esdc.gc.ca/sgpe-pmps/servlet/sgpp-pmps-pub?lang=eng&curjsp=p.5bd.2t.1.3ls@-eng.jsp&curactn=dwnld&pid=53801&did=4860&_ga=2.90884061.692313965.1503953331-151621251.1488472117. Accessed 14 February 2018.

56 Martha Friendly, Bethany Grady, Lyndsay Macdonald and Barry Forer. "Early childhood education and care in Canada 2014."*Childcare Resource and Research Unit*, 148pp, 2015. http://childcarecanada.org/sites/default/files/ECEC-2014-full-document-revised-10-03-16.pdf. Accessed 9 March 2018.

57 Pierre Fortin, Luc Godbout, Suzie St-Cerny. "Impact of Quebec's Universal Low-Fee Childcare Program on Female Labour Force Participation, Domestic Income, and Government Budgets." *n.c.*, n.p., 2012, https://www.oise.utoronto.ca/atkinson/UserFiles/File/News/Fortin-Godbout-St_Cerny_eng.pdf. Accessed 14 February 2018.

58 Jessica Ball. "Improving the reach of early childhood education for First Nations, Inuit and Métis children." *Moving Child Care Forward*, n.p., 2014, http://www.ecdip.org/docs/pdf/Improving%20Reach%20of%20ECE%20to%20First%20Nations,%20Inuit,%20Metis%20Children.pdf. Accessed 14 February 2018.

59 Canadian Infrastructure Report Card. "Informing the Future: Key Messages." *Canadian Infrastructure Report Card*. n.p., 2016, http://www.canadainfrastructure.ca/downloads/Canadian_Infrastructure_Report_Card_Key_Messages_2016.pdf. Accessed 14 February 2018.

60 Council of Canadians with Disabilities. "Building an Inclusive and Accessible Canada: Supporting People with Disabilities." *Council of Canadians with Disabilities*, n.p., n.d., http://www.ccdonline.ca/en/socialpolicy/actionplan/accessible-canada. Accessed 6 September 2017.

61 Environment and Climate Change Canada. "Canada's Second Biennial Report on Climate Change." *ECCC*, Government of Canada, 2016, https://www.ec.gc.ca/ges-ghg/02D095CB-BAB0-40D6-B7F0-828145249AF5/3001%20UNFCCC%202nd%20Biennial%20Report_e_v7_lowRes.pdf. Accessed 14 February 2018.

62 Statistics Canada. "National Economic Accounts Division." *Statistics Canada*, Government of Canada, 2013, https://www.statcan.gc.ca/eng/nea/list/nea. Accessed 14 February 2018.

63 Chantal Duchène."Gender and Transport: Discussion Paper No. 2011-11." *International Transport Forum*, 2011.

64 World Health Organization. "Gender, Climate Change and Health." *World Health Organization*, 2014, http://www.who.int/globalchange/publications/reports/gender_climate_change/en/. Accessed 22 March 2018.

65 World Health Organization. "Gender, Climate Change and Health." *World Health Organization*, 2014, http://www.who.int/globalchange/publications/reports/gender_climate_change/en/. Accessed 22 March 2018.

66 David Ribeiro, Eric Mackres, Brendon Baatz, Rachel Cluett, Michael Jarrett, Meegan Kelly, and Shruti Vaidyanathan. "Enhancing Community Resilience through Energy Efficiency." *American Council for an Energy-Efficient Economy*, 2015, http://aceee.org/research-report/u1508. Accessed 9 March 2018.

67 Natural Resources Canada. "Reducing diesel energy in rural and remote communities." *Natural Resources Canada*, Government of Canada, 2017, https://www.nrcan.gc.ca/energy/science/programs-funding/20542. Accessed 13 March 2018.

68 Build America Bureau. "TIFIA Credit Program Overview". *United States Department of Transportation*, 2017, https://www.transportation.gov/tifia/tifia-credit-program-overview. Accessed 12 March 2018.

69 Center for Innovative Finance Support. "Project Profile: SH 130 (Segments 5-6)". United States Department of Transportation, 2017, https://www.fhwa.dot.gov/ipd/project_profiles/tx_sh130.aspx. Accessed 12 March 2018.

70 Macquarie Green Investment Group. "UK Green Investment Bank acquires 25% stake in Galloper offshore wind farm." *Macquarie Capital*, 2015, http://greeninvestmentgroup.com/news-and-insights/2015/uk-green-investment-bank-acquires-25-stake-in-galloper-offshore-wind-farm/. Accessed 12 March 2018.

71 Railway Technology. "Tours–Bordeaux High-Speed Rail." *Railway Technology*, 2017, http:/-/www.railway-technology.com/projects/toursbordeaux-high-speed-rail/. Accessed 12 March 2018.

www.infrastructure.gc.ca/plan/about-invest-apropos-eng.html

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