



BUILD ON

BUILDING BETTER LIVES:

ONTARIO'S LONG-TERM INFRASTRUCTURE PLAN 2017



 **Ontario**

MINISTER'S LETTER



Infrastructure is about more than bricks and mortar. It is about improving the lives of Ontarians, no matter where they live. It is about building and sustaining a vibrant and competitive economy based on best practices and a framework of creativity and innovation.

Every child and adult of every age, every business, small, medium and large rely on public infrastructure.

This Long-Term Infrastructure Plan (LTIP) is dedicated to delivering the infrastructure individuals and businesses in Ontario need, where and when they need it.

The plan is about building roads and highways and modernizing transit to ease the stresses of everyday travel; it is about providing essential services such as water, gas, and broadband Internet to homes in a safe, reliable and timely manner. And it is about ensuring that Ontarians have access to modern, world-class health care, education and community services.

In an era of accelerated change and disruptive technologies, the need for resilient and substantive infrastructure with responsive and inclusive planning has never been greater.

These challenges require bold action as we design the next generation of infrastructure and shape the Ontario of tomorrow with innovations like “The Internet of Things.”

We have committed to spending about \$190 billion over 13 years, starting in 2014–15, to expand and renew Ontario’s infrastructure. This unprecedented investment — the largest the government has ever made — demonstrates the government’s commitment to supporting communities, strengthening the economy and helping Ontarians in their everyday lives.

The LTIP highlights the future, such as integrating climate change considerations into infrastructure planning to ensure environment sustainability in a world in which temperatures are rising.

We want to deliver infrastructure in the most effective way to get the best value for the public. Ontario is proud to have developed the Alternative Financing and Procurement model, an innovative public-private partnership (P3) model specifically designed to meet the needs of Ontario. We are now working with our agency, Infrastructure Ontario, to explore how to make our financing and infrastructure procurement even better.

We are also advancing community benefits and apprenticeships to support jobs and training opportunities for Ontarians.

Ontario recognizes the need for transparency and accountability to ensure excellence in Ontario’s infrastructure management and planning activities. To support this, the LTIP describes Ontario’s existing infrastructure



portfolio and details plans to strengthen asset management planning and evidence-based decision making. It also emphasizes the importance of managing Ontario's infrastructure dollars responsibly to ensure that investments produce the largest economic and social returns.

Our long-term infrastructure objectives cannot be achieved without the support of our partners. Ontario is committed to working closely and collaboratively with federal and municipal counterparts, private-sector and community partners and First Nations communities to meet the government's shared infrastructure goals.

For too long federal, provincial and municipal governments have not adequately aligned their infrastructure policies, planning, and budgets; fortunately, our governments have crossed a major threshold in collaboration towards harmonizing federal, provincial, municipal and First Nations infrastructure investments.

Ontario's plan builds on past commitments to infrastructure planning — the Infrastructure for Jobs and Prosperity Act (2015), the 2011 Long-Term Infrastructure Plan and the recent 2017 Infrastructure Update.

Our plan takes into account the realities of climate change and fast-paced social, economic and technological changes. Ontarians, working together, are up to the challenge.



Bob Chiarelli
Minister of Infrastructure





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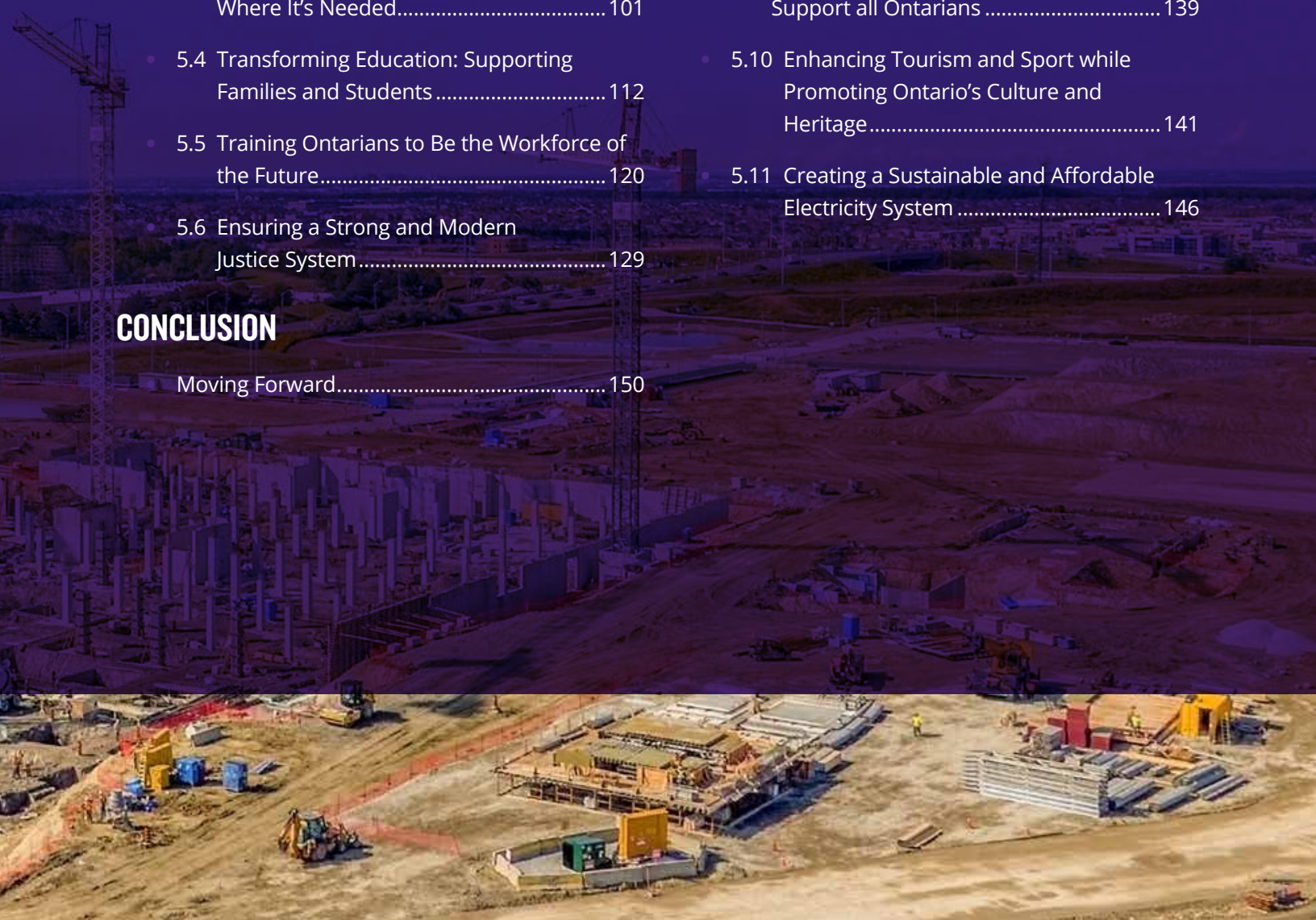
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CHAPTER 1:

SETTING THE FOUNDATION

Infrastructure is the foundation on which societies are built. The world today invests about \$2.5 trillion a year in core infrastructure, such as power, water, transportation and telecommunications systems. That sounds like a huge number, but the needs are growing after underinvestment in the 1970s to early 2000s, and governments need to catch up. In fact, a recent report by the McKinsey Global Institute found that global infrastructure spending should be \$3.3 trillion annually on average, just to meet the demands of population growth.

To make matters worse, the McKinsey Global Institute report finds that infrastructure investment has declined as a share of GDP in 11 of the G20 economies since the 2008 global financial crisis. However, Canada is one of the countries that has increased investment in infrastructure, and that is certainly to our benefit.¹

1.1 ONTARIO'S COMMITMENT TO INVESTING IN INFRASTRUCTURE

Wherever you live in Ontario, you interact with public infrastructure every day. You depend on a reliable and interconnected public infrastructure system, whether you're turning on a tap, dropping your children off at school or child care, taking public transit to work, living in a long-term-care facility, going to a hospital out-patient clinic, hiking a trail or driving over a bridge. Provincial infrastructure includes roads, bridges, public transit, schools, hospitals and other real-estate assets, such as correctional facilities and courthouses, as well as social and cultural buildings.

To make sure that Ontarians can always depend on the province's public infrastructure, starting in 2014–15, the Province committed to invest about \$190 billion over 13 years on expanding and renewing Ontario's infrastructure to improve the lives of Ontarians. It's the largest investment

in infrastructure that the Government of Ontario has ever made. Planned investments are expected to support 125,000 jobs, on average, each year.

This significant investment in infrastructure is building Ontario up for today and tomorrow. It's about global economic competitiveness, jobs, opportunity and growth. It's about ensuring that all Ontario communities, whether they be in rural, Northern or urban areas, have access to critical infrastructure. It's about ensuring that economic growth is inclusive to allow all Ontarians to enjoy a high quality of life. It's also about being resilient and adaptable to the changes of the future.

¹ McKinsey Global Institute. <http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps>.



1.2 ONTARIO'S PATH TO BETTER INFRASTRUCTURE PLANNING

For more than a decade, Ontario has been investing significantly to renew and expand Ontario's infrastructure, with the goal of improving access to, and quality of, public services. In 2005, the government released ReNew Ontario, an infrastructure plan to invest \$30 billion over five years, while enhancing long-term planning. ReNew Ontario was completed in 2008–09, a year ahead of schedule.

Building Together

Ontario has been working hard for years to expand and renew the province's infrastructure. It was one of the first jurisdictions in North America to release a long-term infrastructure plan and acknowledge the importance of investing in infrastructure. Ontario released the Province's first 10-year plan, Building Together, in 2011 to introduce the government's long-term vision for infrastructure. Building Together improved the way the government approaches infrastructure planning and policy-making. It provided much-needed clarity, sustainability and predictability in the government's processes. It set out a strategic vision to guide its investments in ways that supported economic growth, were fiscally responsible and responded to changing needs. With a strong commitment to align with such initiatives as the Growth Plan for the Greater Golden Horseshoe and other growth plans, Building Together also focused on transportation and public transit, education and innovation, health care, stronger communities and care for the environment.



INFRASTRUCTURE PLANNING AND PROGRESS

A significant part of the government's continuous effort to improve infrastructure planning involves better integration with government's overall suite of planning initiatives. As a facilitator of service delivery, infrastructure's effectiveness is enhanced through alignment with other provincial plans the government has approved. Examples include the Growth Plan for the Greater Golden Horseshoe (2017), the Provincial Policy Statement (2014) and the Greenbelt Plan (2017), as well as other plans that are under consideration, such as Metrolinx's draft 2041 Regional Transportation Plan that aims to guide the transformation of the transportation network across the Greater Toronto and Hamilton Area (GTHA).

The Province built on the government's progress in the 2014 Ontario Budget, Building Opportunity, Securing Our Future to renew the Province's commitment to infrastructure investments, and included strategic investments in roads, bridges and public transit, modernization of infrastructure in communities across Ontario, as well as dedicated funding for transportation infrastructure. In the 2014 Budget, the

government also committed to invest more than \$130 billion in infrastructure through Ontario's new 10-year economic plan, which continued to help stimulate the economy, create jobs and increase prosperity and fairness for Ontarians.

There are a number of other provincial plans that have furthered Ontario's commitment to effective infrastructure investment.

Community Hubs in Ontario: A Strategic Framework and Action Plan made recommendations on how the Province can support community hubs to better integrate public-service delivery.

The Climate Change Action Plan is a five-year plan that will help Ontario fight climate change over the long term.

Ontario's current commitment to invest about \$190 billion in vital public infrastructure over 13 years, starting in 2014–15, was made in Budget 2017, A Stronger, Healthier Ontario and is being implemented in the context of these planning commitments. Budget 2017 also outlined Ontario's commitment to return to a balanced budget, and to manage long-term debt responsibly.

Figure 1: Ontario's Infrastructure Planning and Progress



The Infrastructure for Jobs and Prosperity Act

In 2015, the Government of Ontario took the next step to set out important infrastructure planning principles in legislation. Through the Infrastructure for Jobs and Prosperity Act, 2015 (the IJPA) the Province is taking a long-term approach to investing in improvements to Ontario's infrastructure assets.

The IJPA sets the foundation for good infrastructure planning and highlights the need to look toward the future. The IJPA also makes clear that decisions about public infrastructure investments should:

- be long-term and aligned with demographic and economic trends, as well as fiscal plans
- promote economic competitiveness, productivity, job creation and training
- be evidence-based and transparent
- ensure the provision of core public services

The IJPA also requires the government to publish a long-term infrastructure plan by May 2019. It should describe Ontario's existing infrastructure portfolio, outline anticipated needs of the portfolio and propose strategies to meet these needs. We know it can take a lot of time for a hospital or transit line to go from conception to completion – that's why Ontario needs to make sure decisions are based on facts and evidence and enable services at the right time in the right place.

2017 Infrastructure Update

In January 2017, the Province released an Infrastructure Update. This update gave Ontarians information on the Province's infrastructure plan and the infrastructure planning process to meet the needs of all Ontarians and local communities. Ontario also launched an interactive online tracking

tool, BuildON. This tool allows Ontarians to see infrastructure projects that are under way in their community.

Making Progress on the IJPA Requirements

The plan outlined in this document and the Technical Appendix is an important interim step and makes progress toward meeting the IJPA requirements. In particular, this plan makes substantial progress toward meeting the first requirement of the IJPA: to develop an asset inventory recording the age, condition and value of Ontario's infrastructure assets. This is a significant achievement, given the size and scope of Ontario's infrastructure portfolio. Ontario is a leader in this field. The government is also making progress toward assessing Ontario's needs and developing a strategy to meet them as it works toward fully meeting the requirements of the IJPA by the legislated deadline of May 2019.

As the Province develops a strategy to meet Ontario's needs, it will use the guiding principles laid out in this document and the IJPA to make investment decisions that are based on evidence, and deliver infrastructure in the most effective way. The government will ensure these investments are co-ordinated and use them to support transformation and improve access to and quality of services.

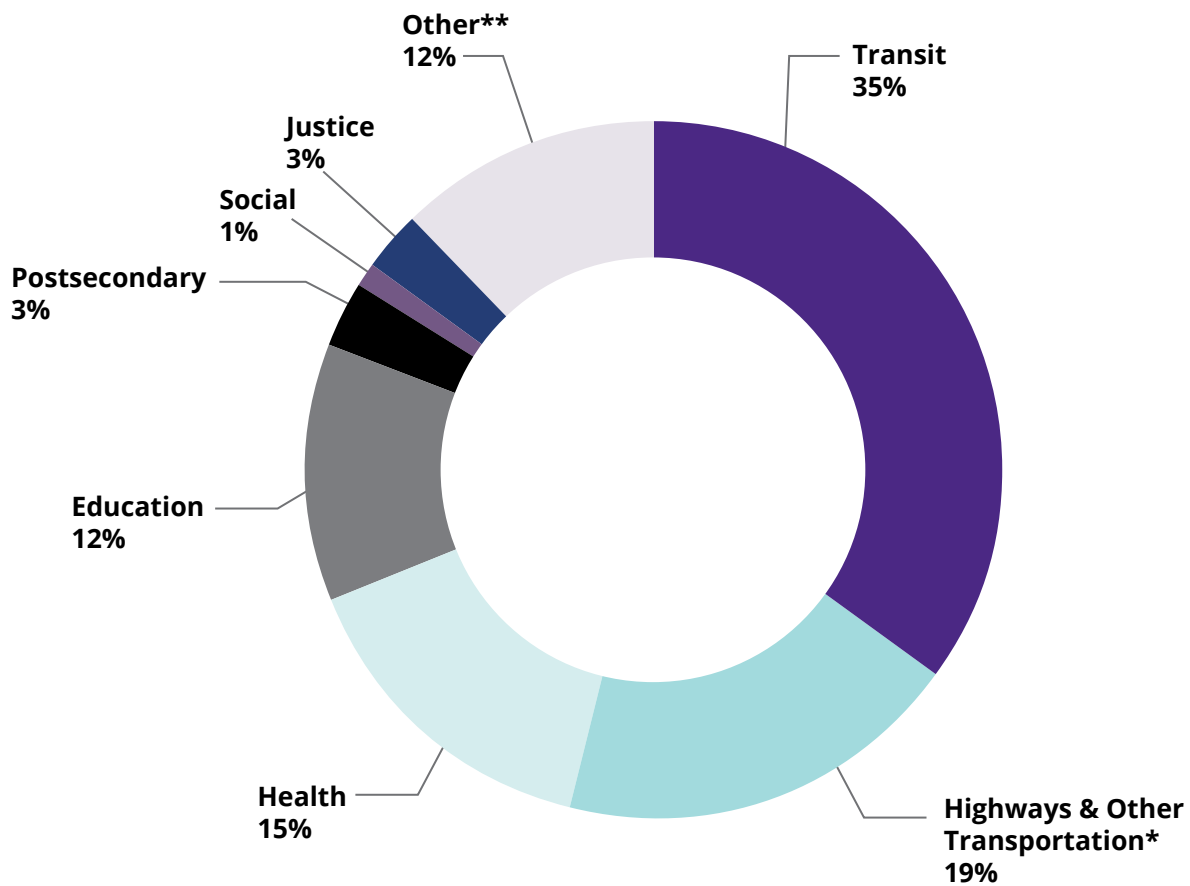


1.3 THE GOVERNMENT'S INVESTMENT IN ONTARIO'S INFRASTRUCTURE

The Province's plan to invest about \$190 billion over 13 years, starting in 2014–15, demonstrates the government's commitment to investing in

infrastructure to ensure Ontario remains competitive and that growth is inclusive and benefits Ontarians and communities across the province.

Figure 2: **The Province's 13-year Infrastructure Plan by Sector**

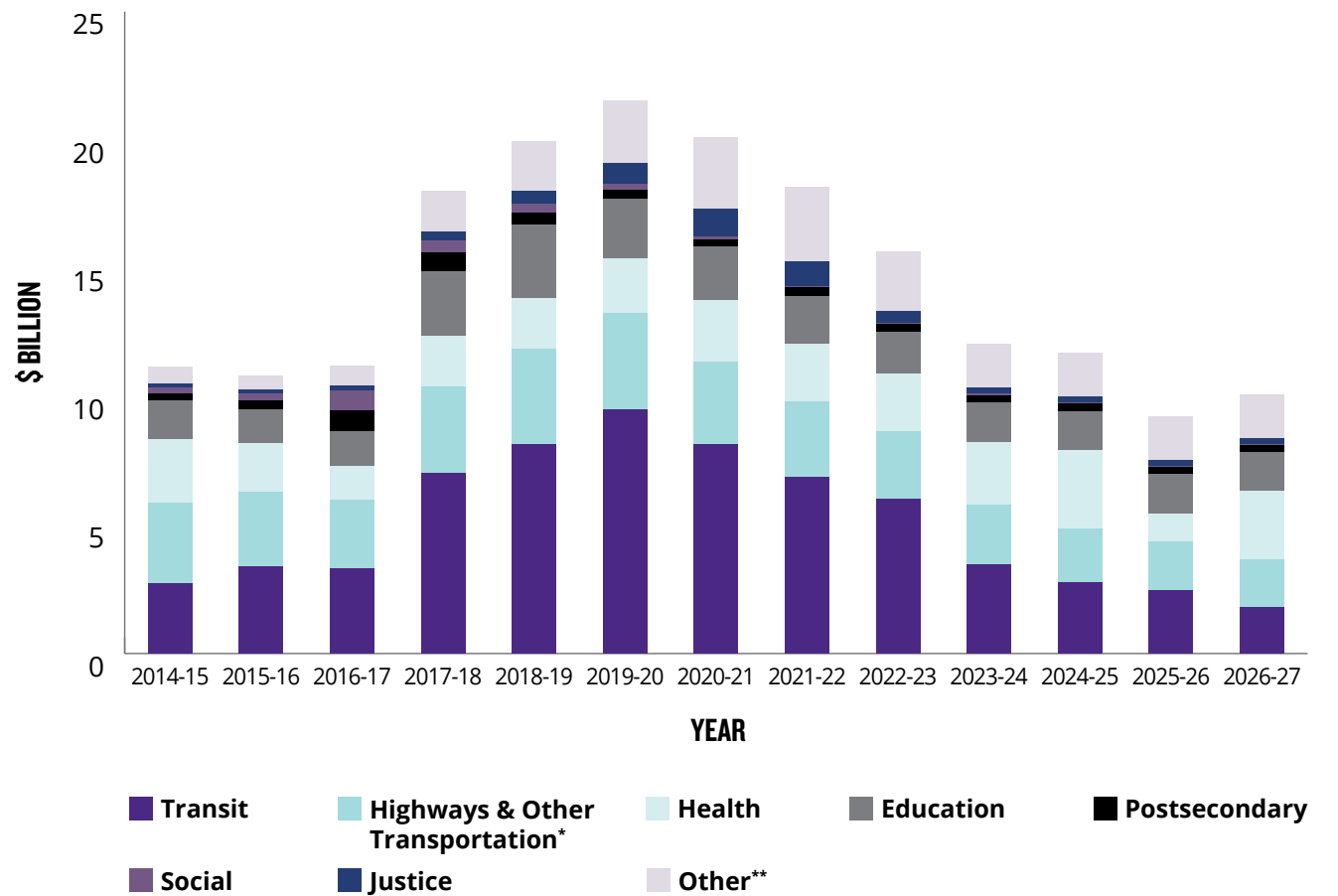


*Other transportation includes highway planning activities, property acquisition and other infrastructure programs.

**Other sector includes government administration, natural resources, culture and tourism sectors.

Note: Figure excludes third-party investments in hospitals, colleges and schools

Figure 3: **The Province's 13-year Infrastructure Plan by Sector and by Year**



*Other transportation includes highway planning activities, property acquisition and other infrastructure programs.
**Other sector includes government administration, natural resources, culture and tourism sectors.

Note: Figure excludes third-party investments in hospitals, colleges and schools



1.4 PRINCIPLES AND OBJECTIVES FOR ONTARIO'S INFRASTRUCTURE

Infrastructure assets last a long time. They also take time to build. It often takes a decade for a project to go from planning, through approvals and construction, to completion. As such, the Province needs to be able to adapt in anticipation of future changes to demographics, technology and climate. With the right preparation, Ontario will prosper from these changes by harnessing new opportunities, such as future technological innovations, green infrastructure or strategic partnerships.

Grow Inclusively

The government's vision is of an inclusive Ontario, in which each person has an opportunity to achieve their potential and contribute to the province's prosperity. An inclusive society provides social and economic benefits to Ontarians in all communities. Inclusive growth should guide everything the government does.

Among other things, an inclusive society requires accessible infrastructure. Roughly 3.8-million people — from every income bracket, age group, racial or ethnic background and geographic region — live with disabilities. The prevalence of disability rises with age, and about one-third of seniors report that they have disabilities.

The government has accomplished a lot — one of the first in the world to move to a modern regulatory regime that mandates accessibility reporting and requires staff to be trained on accessibility, first in Canada with legislation that sets out a clear goal and timeframe for accessibility by 2025 — but we know there is always more we can do.

Embedding accessibility into infrastructure planning and design gives people with disabilities more opportunities to live and work independently. Understanding the types of barriers that exist can help prevent and remove barriers from the outset, and support the inclusion of people of all abilities. For example, the use of inclusive design principles at the design stage of new infrastructure projects would help address accessibility concerns related to the built environment and design of public spaces for Ontarians with disabilities.

Prepare for Demographic Change

Ontario's population is aging. People are also living longer. The number of seniors is projected to almost double, from 2.3 million in 2016, or 16.4 per cent of the population, to 4.6 million by 2041, or 25.0 per cent.

Aging has implications for the types of services Ontarians will need, the infrastructure required to deliver those services and available funding. For example, as the members of the Baby Boom generation retire in record numbers, they are taking knowledge and skills with them. This presents unprecedented opportunities for people with education, skills and training to find satisfying and rewarding work. Ontario's aging population will also strain the province's health care system — as people age, they may need longer hospital stays and care that is more intensive. Currently, there are approximately 45 hospitals in planning or construction across Ontario.



The population is also changing in other ways, including regional distribution. The Greater Toronto Area (GTA) is the fourth-largest region in North America. It is projected to be the fastest-growing region of the province, with its population increasing by almost 2.9 million, or 42.3 per cent, to reach 9.6 million by 2041. The GTA's share of provincial population is projected to rise from 48.3 per cent in 2016 to 52.7 per cent in 2041.² At the same time, rural Ontario is seeing different trends. While some smaller rural communities are experiencing population decline, others are experiencing population growth. Both trends put differing pressures on Ontario's public infrastructure assets.

Finally, social needs are shifting as Ontario becomes more diverse. While that may not immediately affect the infrastructure demands on the province, it does affect broader policy goals around inclusion and fairness, which infrastructure helps support.

Support Our Growing Economy

Infrastructure plays a crucial role in economic growth and global economic competitiveness. The government commissioned a study by the Centre for Spatial Economics (C4SE) to assess the broader economic impacts of Ontario's infrastructure plan. The study found that, over the long term, real GDP in Ontario rises an average of up to \$6 per dollar of public infrastructure spending.

To keep the economy growing, Ontario's infrastructure needs to support higher levels of productivity to make sure that Ontario businesses remain competitive. Ontario will continue to rely heavily on exports to support economic growth. It's important that Ontario innovators and producers can access both domestic and global markets in a timely, efficient and cost-effective way. That means less congestion on key transportation routes and more access to broadband technology. That also

means affordable energy to power businesses and homes. Ontario will benefit, as well, through having a well-educated and healthy workforce, with the skills to be successful in the jobs of the future. A cohesive, safe and well-functioning society will make Ontario an attractive place to live, invest and do business. Ontario's public infrastructure is key to supporting these goals.

Address the Changing Climate

Climate change is real — and so is its impact on Ontario's public infrastructure. Extreme weather events due to climate change are becoming more intense and more frequent. These events have already cost Ontarians billions of dollars in recent years; the Insurance Bureau of Canada reported that record rainfall in Toronto in July 2013 resulted in \$940 million in insurable damages.³ More recently, in the summer of 2017, heavy rain caused flooding on Toronto Island, in Windsor, and along the Ottawa River, causing millions of dollars in damage to public infrastructure and private property. In the North, lack of snow and changing weather patterns caused delays in the opening of winter roads that many communities depend on.

We recognize the growing strain climate change is putting on our infrastructure. We have already acted, eliminating Ontario's use of coal for electricity generation, investing strongly in transit, supporting an innovative clean-technology sector, introducing a cap and trade program that will further drive down emissions and setting aggressive greenhouse-gas-reduction targets.

² Government of Ontario. <https://www.fin.gov.on.ca/en/economy/demographics/projections/>

³ Insurance Bureau of Canada. [http://www.ibc.ca/yt/resources/media-centre/media-releases/canada-inundated-by-severe-weather-in-2013-insurance-companies-pay-out-record-breaking-\\$3-2-billion-to-policyholders](http://www.ibc.ca/yt/resources/media-centre/media-releases/canada-inundated-by-severe-weather-in-2013-insurance-companies-pay-out-record-breaking-$3-2-billion-to-policyholders)



All cap and trade auction proceeds will be directed to a new Greenhouse Gas Reduction Account to fund green initiatives that reduce or support reduction of greenhouse gas emissions.

Ontario's Climate Change Action Plan is a five-year plan that will help Ontario fight climate change over the long term, with actions across a wide spectrum. For infrastructure, the Province must invest in designing and building infrastructure assets that mitigate the impacts of climate change. Infrastructure, both new and existing, should be resilient, support the resilience of the surrounding community, and be able to adapt to the impacts that Ontario experiences. The government can work to mitigate climate change in many ways, including the reduction of emissions and the use of lower-carbon building materials.

Embrace the Future of Technology

Connectivity and disruptive technologies are changing the way Ontarians work, play, interact, move, produce and consume. Broadband connectivity is essential to participation in the 21st-century economy and to accessing basic services. Technology is also becoming a larger and more important part of Ontario's infrastructure, and it is important for technology to be accessible. A 2016 report from Canada's Public Policy Forum states that technology as a share of total public infrastructure stock has risen from 5 per cent in 1970 to 20 per cent today.⁴ For example, hospitals today are much more than just bricks-and-mortar. They require significant technological capabilities to deliver the modern and high-quality care that Ontarians deserve.

⁴ Public Policy Forum. http://www.ppforum.ca/sites/default/files/PPF%20BuildingFuture_INTERIM%20FINAL%20small_0.pdf



Technology is changing how government provides services. The Province needs to make sure that its infrastructure investments are adaptable and prepared for technologies, such as automated vehicles and artificial intelligence. To respond to the challenges of disruptive technologies, in late 2016 the Province created a disruptive technology team, which has a mandate to promote strategic foresight with respect to the disruptive technology landscape.

Technology has the capacity to improve our productivity, improve access to services and connect Ontario. In particular, technology could boost productivity in the construction industry. According to the McKinsey Global Institute, construction is one of the least-digitized sectors in the global economy. If the productivity in the construction sector were to match productivity gains in the broader economy, it could increase the sector's value added by an estimated \$1.6 trillion globally.⁵ Governments need to work with the private sector to encourage and enable innovation and better productivity in the construction sector. Adopting new technologies is one way.

Technological change also comes with challenges. Large up-front investments are needed to provide a foundation. More frequent upgrades may be required to keep up with the pace of technological advancement. However, once government has made these investments, technology can save money by improving efficiency and stimulating economic growth. Disruptive technologies are also creating new challenges in terms of cyber security. Maintaining strong cyber security of public infrastructure is crucial to ensuring consumer and business confidence in Ontario's economy and ensuring that sensitive information remains protected.

Get the Best Value

The Government of Ontario knows public infrastructure is vital to Ontario's success as a

province. It also knows that it must manage the provincial budget responsibly to ensure that we can continue to enjoy a prosperous future. The government needs to consider how to pay for infrastructure and how to get the best value for each dollar it spends.

The best value is not always reflected in the lowest cost. The government is using infrastructure investments to achieve multiple objectives. They include fiscal responsibility; economic growth and productivity; innovation; social and community benefits; effective maintenance and asset management; and environmental sustainability. Better delivery can include using more innovative and effective procurement methods to achieve multiple objectives through infrastructure investments. It can also mean using community benefits to support training and job opportunities in affected communities.

Manage Aging Assets

Many of Ontario's public infrastructure assets were built in the 1950s and 1960s, or even earlier, with the expectation that they would last 50 to 75 years. These assets are aging, and some of them are reaching the end of their useful lives. Some of them need to be renewed to continue supporting services for Ontarians. Some need to be replaced.

The government must understand the state of Ontario's infrastructure, as well as the risks of aging assets. These risks can include service gaps, health and safety concerns, foregone economic growth and productivity because of service gaps, and a loss of social and cultural value, if heritage properties deteriorate.

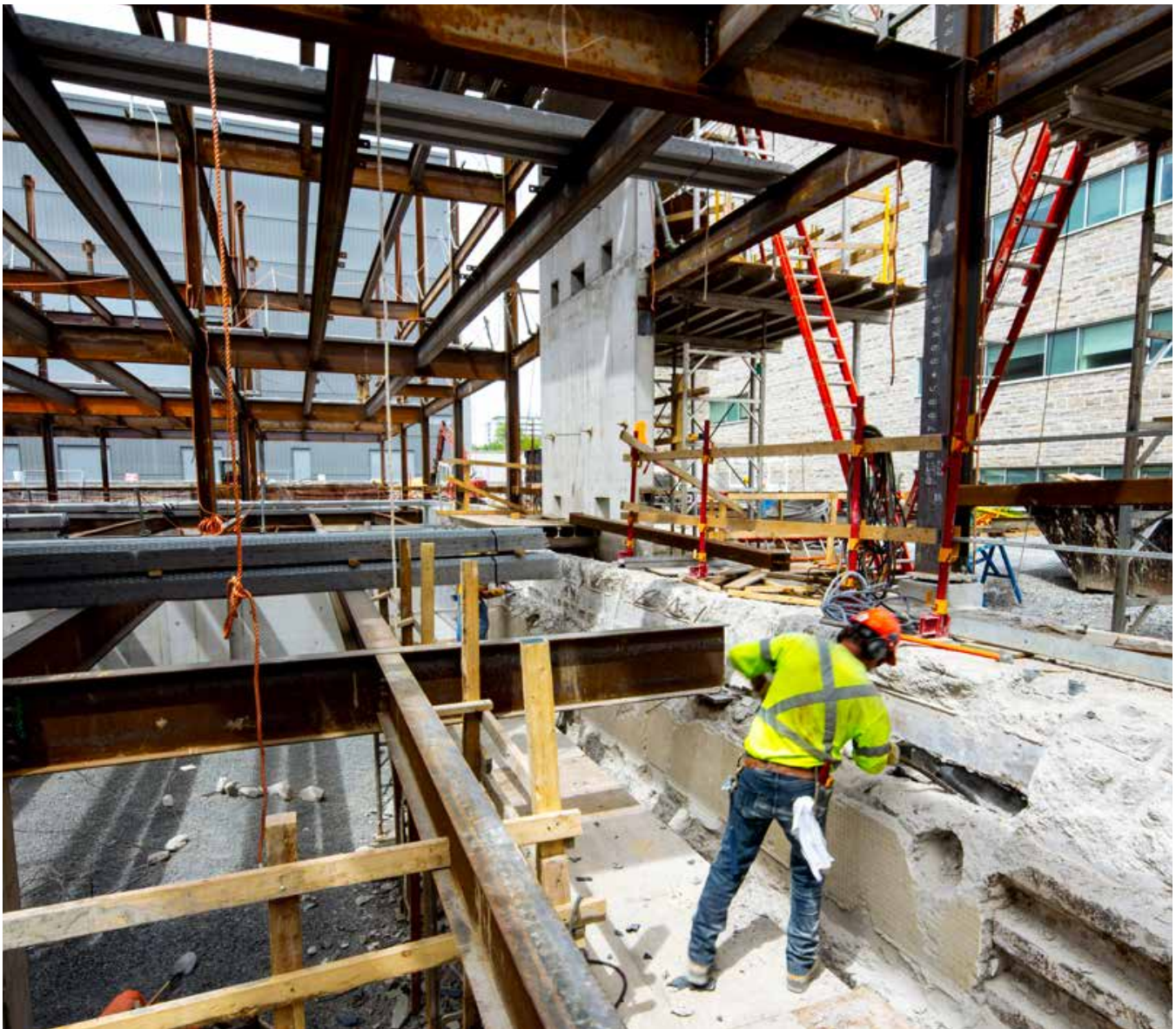
⁵ McKinsey Global Institute. <https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/reinventing-construction-through-a-productivity-revolution>



Once the government knows the age and condition of Ontario's assets, it is important that it manage the risks of aging infrastructure through appropriate renewal and maintenance — or decommissioning, where appropriate. The cost of renewal and maintenance can be expensive, especially for smaller communities with small tax bases. However, keeping assets in good condition can also save money overall by prolonging the life of Ontario's current assets and minimizing the need for replacement.

Align Infrastructure with Land-Use Planning

What and where building occurs are equally important. Well-planned infrastructure is essential to the viability of Ontario's communities and critical to economic competitiveness, quality of life and the delivery of public services. Well-thought-out and complete communities that are well-connected by transportation allow people and goods to move most effectively.



The Province needs to plan the location of its investments to support the best services for Ontarians, build complete communities, contribute to economic growth and minimize the impact on the environment. For example, a hospital that is not well connected by transportation is not going to be able to provide a convenient and high level of service for the surrounding community. Similarly, co-ordinated planning for different types of linear infrastructure (like roads, rail lines and electrical transmission) will use less land, have less impact on the environment and cost less than building each type of infrastructure independently. A more-integrated approach to land-use planning and infrastructure investment would ensure that a particular infrastructure asset is financially viable over its life cycle and is available to meet current and future needs.

Ontario also needs to carefully plan the use of Crown land, or government-owned land. The Province manages Provincial Parks and Conservation Reserves, forests, fish, wildlife, Crown lands and waters, aggregates, petroleum and salt resources to provide sustainable environmental, social and economic benefits. Infrastructure planning must consider the use and conservation of these lands and resources.

Innovations and new technologies could also have an impact on Ontario's land-use planning. Rapid transit and high-speed rail, as well as new technologies, such as automated vehicles, could change the way people travel and where people live. This means Ontario must consider the future of how and where it plans communities.

Co-ordinate among All Orders of Government

All orders of government seek to improve the lives of their residents by investing in infrastructure, but sometimes their priorities and methods differ. Infrastructure planning must be co-ordinated within the provincial government and aligned with federal, regional, municipal and Indigenous partners. Planning must also be reflective of the needs and priorities of the community. If all orders of government are working toward the same vision, based on outcomes and aligned with local priorities, governments can make the most of their investments. In that vein, Ontario was a leader among the provinces and territories this year in the development of joint principles to guide negotiations with the federal government on the next phase of new federal infrastructure funding (see Section 2.6 for more information).



1.5 THE GOVERNMENT'S VISION FOR ONTARIO'S INFRASTRUCTURE

The Vision: Building infrastructure is about creating better lives for the people of Ontario. We do that by ensuring what we build improves access to modern public services for people in all regions. Our decisions must be evidence-based and our infrastructure should be resilient to the impacts of a changing climate and disruptive technologies, seamlessly interconnected and supportive of economic growth for the whole province.

Ontario is working toward this vision through this Long-Term Infrastructure Plan by improving infrastructure planning and delivery. Ultimately, these efforts will mean better results for Ontarians. Chapters 2 and 3 of this plan outline the actions the government is taking to improve infrastructure planning and delivery. Chapter 4 outlines and assesses Ontario's existing infrastructure portfolio. Chapter 5 outlines how better planning in major infrastructure sectors supports better access and quality of services to provide a high quality of life for Ontarians.

THE FUTURE OF ONTARIO'S INFRASTRUCTURE

Stimulates economic growth: Infrastructure provides the foundation for Ontario's economy to grow and be competitive by connecting Ontario to domestic and international markets. Infrastructure investments support jobs in the short, medium and long term.

Promotes social benefits and inclusive growth: Infrastructure is accessible and supports economic and social development in all communities across the province, including Indigenous communities and for people with disabilities.

Responds to disruptive technology: Infrastructure investments are adaptable and responsive to disruptive technologies, such as automated vehicles, hydrogen-powered vehicles and artificial intelligence.

Ensures better access and better quality of modern public services: Public services meet Ontario's needs, such as education, health care and justice services throughout the province.

Supports sustainability and resiliency against the impacts of climate change: The government will ensure that infrastructure investments reduce the government's impact on the environment to support the transition to a low-carbon economy. Infrastructure investment decisions will also be informed by evidence of the impact of greenhouse gases on the changing climate.

Is integrated with community needs: Infrastructure planning is co-ordinated across government and with the government's partners in an integrated approach that considers community needs and well-being. This approach should be grounded in good asset management principles to make the most of the government's existing assets, wherever possible, before building new ones.



A photograph of two construction workers, a man and a woman, wearing white hard hats and high-visibility safety vests. They are sitting at a table, looking down at a large set of blueprints spread out before them. The man is on the right, pointing at a specific area on the blueprint. The woman is on the left, looking intently at the same spot. The background shows a construction site with a window and some equipment. A large white number '2' is overlaid on the right side of the image, partially covering the workers and the background.

2

CHAPTER 2:

PLANNING FOR THE FUTURE

Ontario is acting to improve planning — in particular through good asset management — considering the full cost of infrastructure and improving how the government prioritizes projects. Better planning will help Ontario prepare for the future, and will also help save money. The government will realize further savings by making the most of Ontario's existing assets through proper maintenance and by managing demand.

2.1 PLANNING BASED ON EVIDENCE

Evidence-based decision making uses the best available analytics, research and information on program results to guide government decisions. It identifies gaps in evidence, and supports policy-makers in monitoring implementation, in identifying policy objectives, outcomes and baseline measures, and in continually improving performance. It also recognizes the complexity of some of the challenges that the government is facing, especially when decisions affect multiple priorities, such as policy, service delivery or procurement.

Asset Management

The government needs to manage Ontario's assets responsibly to get the most from its investment, manage its risks and ensure that Ontarians can rely on the province's public infrastructure for a high level of service. When government manages assets well, it acts sustainably and provides better services to Ontarians, while saving money in the long term. Sound asset management principles are rooted in comprehensive data about the condition, function and utilization of infrastructure assets.

When we build a new asset, we need to understand how much it will cost to operate and maintain. Asset management is about being proactive, rather than reactive. By anticipating Ontario's maintenance

needs, the government can prevent Ontario's assets from deteriorating further and can maintain the level of service, while saving money in the long run.

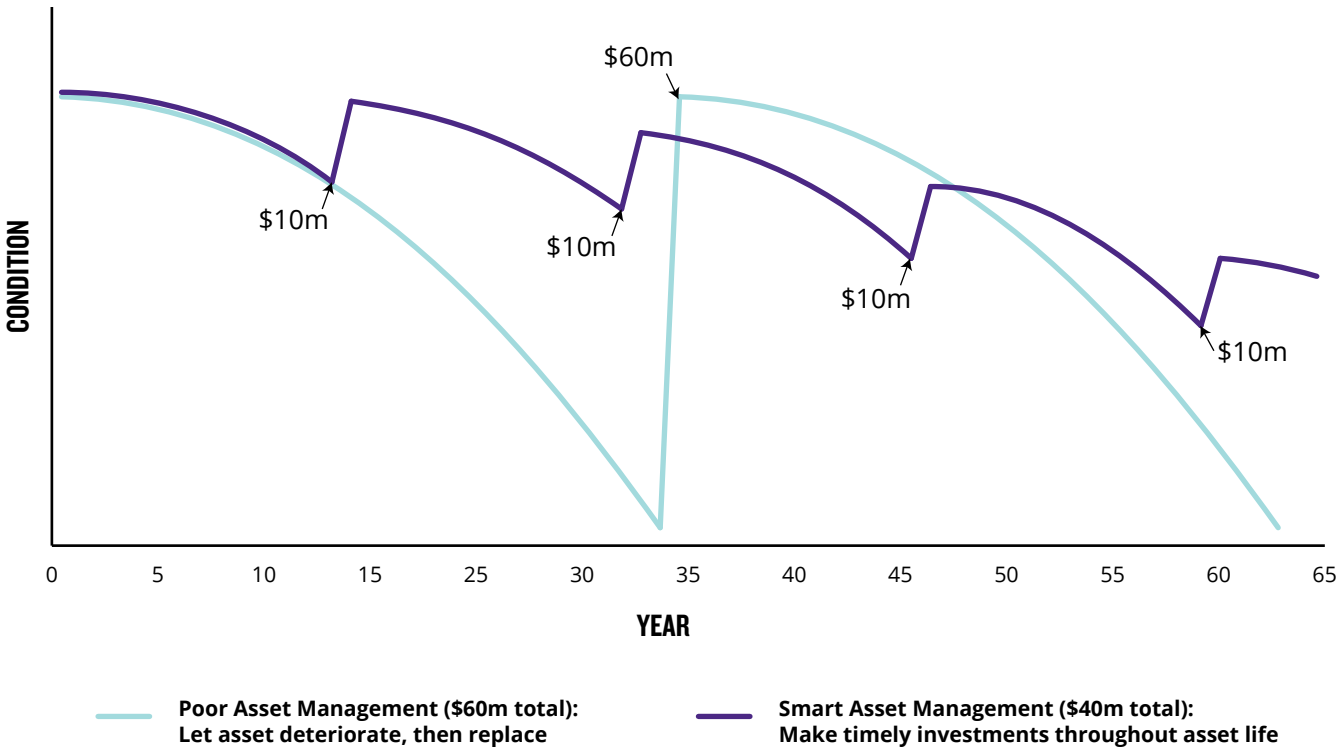
Figure 4 on the following page shows the high cost of neglect and that small but timely investments save money. If the condition of the asset is allowed to deteriorate to the point at which it must be replaced, the cost is \$60 million every 30 years. In contrast, if smart asset management is undertaken and proactive rehabilitation investments are made, the cost would be \$10 million every 15 years.⁶

ASSET MANAGEMENT PLANNING DEFINED

Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. It helps prioritize infrastructure needs and ensures that investments are made in the right place and at the right time to minimize future repair and rehabilitation costs.

⁶ Government of Ontario. <https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans#f1>

Figure 4: **Small but Timely Renewal Investments**
Save Money



Another key element of asset management involves taking into account the potential impacts of climate change, which can damage assets, especially if they are aging and not well maintained, and could cause service disruptions, failures and costly repairs. Proactive asset management integrates climate change mitigation and adaptation considerations to build resilience and ensure continuity and quality of service levels.

To effectively manage and plan infrastructure, the government needs comprehensive data about Ontario's assets. Every infrastructure decision has a corresponding maintenance cost. Understanding the state of federal, provincial and municipal infrastructure allows governments to make the necessary investments to maintain assets in a state

of good repair. This plan is an important step to getting there.

Chapter 4 of this plan summarizes Ontario's Asset Inventory, and this information will help support effective infrastructure decision making. This plan and the accompanying Technical Appendix outline in detail how the Province will strengthen asset management planning and evidence-based decision making. The Technical Appendix contains a more detailed overview of Ontario's Asset Inventory, which makes substantial progress toward meeting the first requirement of the IJPA.



PLANNING FOR HEALTH CARE

The government has a robust health care planning and prioritization framework that leverages expertise and data from the health care sector to inform investment decisions. Tools such as the Health Based Allocation Model and the Facility Condition Assessment Program enable the government to assess what the service needs of Ontarians are now and what they will be in the future. Investing in the right balance of health care infrastructure for renewal and growth will provide the right services to people across the province.

The Health Based Allocation Model estimates expected service volumes and the costs associated with delivering them at the hospital level, enabling the government to make informed decisions about where services might need to be expanded. The Facility Condition Assessment Program provides data on the condition of all the infrastructure assets in the hospital sector, which is used to inform where maintenance and repairs are needed most.

Considering the Full Cost of Infrastructure

To make evidence-based decisions and manage Ontario's assets responsibly, the government needs to understand the full cost of an infrastructure project over its lifetime. Beyond the immediate construction of the asset, this includes the cost of operating the asset, maintaining the asset to a standard of good

repair and the eventual decommissioning of the asset, repurposing of the asset at the end of its useful life, or repurposing materials after demolition. For example, when the previous Terminal 1 building at Toronto Pearson International Airport was demolished, the vast majority of the materials were recycled. The recycled concrete was used in the construction of the new terminal.



Ontario is committed to having a full life-cycle view of potential investments and their alternatives. Life-Cycle Cost Assessment helps government make informed investment decisions and answer questions such as: whether to renew an existing asset or build a new one; whether to lease existing space or build in a new space; how to appropriately consider the operating and maintenance costs over the life of the asset; how best to plan for the eventual decommissioning or repurposing of the asset.

When the government considers potential infrastructure investments, it considers life-cycle budgets, which include capital costs, operating costs such as energy, maintenance, financing costs and other relevant costs. The development of a life-cycle plan requires the government to understand the benefit of proactive and not reactive maintenance. It also requires the government to set aside operational

funds to manage the life cycle and refurbishment of systems effectively and to recognize when an upfront investment can reduce long-term costs.

Improving How Projects Are Prioritized

When planning infrastructure projects, the government needs to prioritize investments to make sure it is meeting Ontarians' needs. Ultimately, Ontario's priorities should be informed by community needs and broader trends, such as demographic change and new technology, and policy goals, such as economic, social and environmental benefits.

As required under the IJPA, infrastructure investment decisions should consider evidence, including the life-cycle costs of an asset and whether a project would stimulate the economy,



align with public-policy goals and achieve a long-term return on investment.

The Province is enhancing the government's capacity for evidence-based decision making. At its core, this is about identifying the outcomes government wants to achieve and ensuring the best available evidence and analysis informs the government's decisions. To support this approach, the Province is working to transform the infrastructure planning and prioritization process to further improve the government's ability to make the right infrastructure investments in the right locations at the right time.

The government is undertaking extensive research to understand best practices in infrastructure planning and prioritization, and will apply these findings to ongoing work to

improve consistency in business cases. This is to ensure the clear identification to decision-makers of the critical investments that are necessary to address health and safety; deliver critical services; address vulnerabilities to climate impacts; or to deliver on government mandate commitments or time-limited opportunities.

As government practices continue to improve, there will be clear prioritization criteria to assess the economic, social and environmental impacts of investments. There will also be improvement of business cases to ensure that decision-makers have the evidence they need to make informed decisions. This evidence will include the current provincial infrastructure capacity, the gaps between what Ontario has and what Ontario needs, and a clear strategy on how the government will meet those needs.



2.2 BUILDING IN THE RIGHT PLACE

Building Together, Ontario's 2011 long-term infrastructure plan, made a strong commitment to align with other provincial initiatives, such as the Growth Plan for the Greater Golden Horseshoe. This LTIP continues that commitment. The government needs to ensure that infrastructure projects that get built in Ontario are consistent with municipal official plans and provincial land-use policies and plans.

Going forward, Ontario will take steps to ensure that infrastructure planning better supports the Province's land-use planning framework and related initiatives. It includes the Provincial Policy Statement (2014) and the Growth Plan for the Greater Golden Horseshoe (2017), as well as the Growth Plan for Northern Ontario (2011), the Greenbelt Plan (2017), Metrolinx's Regional Transportation Plan for the Greater Toronto and Hamilton Area (2008), the Oak Ridges Moraine Conservation Plan (2017), the Niagara Escarpment Plan (2017) and the Lake Simcoe Protection Plan.

The Growth Plan and Provincial Policy Statement require that public infrastructure:

- be located in areas that have been identified as suitable for accommodating intensification and higher-density mixed uses in a more compact built form
- be located in proximity to existing or planned transit
- support the creation of complete communities
- support the protection of natural heritage systems

The provincial land-use planning framework requires an integrated approach to land-use planning, infrastructure investments and protection of the environment to support growth. The government is taking steps to ensure that infrastructure planning is aligned with these elements of the land-use planning framework. Decision making will assess projects for alignment by identifying the selected location and analyzing how the infrastructure asset will be integrated into the surrounding community.

PLACE-BASED PLANNING: THE AUSTRALIAN INFRASTRUCTURE PLAN

Australia's plan includes a detailed "place-based" analysis to provide a "top-down" planning perspective. The analysis projects current and future demographic and economic characteristics for 73 regions of the country. The regions with the most growth over time are identified as "hot spots," and efforts are put into assessing what kind of investment will help drive the greatest economic impact in these regions. The "hot spots" are in Australia's four largest cities, where three-fourths of the population growth is expected to occur between 2011 and 2031.

The Province will also focus on aligning infrastructure planning decisions with municipal official plans. Official Plans are required by the Planning Act and must include public consultations, conform to the Growth Plans (where applicable) and be consistent with the Provincial Policy Statement, 2014. Determining alignment with a municipal official plan can ensure a provincial infrastructure project is supportive of a municipality's goals and policies.



Aligning infrastructure investments with land-use plans helps support the development of compact and complete communities. For example, the Growth Plan requires a municipality's official plan to identify transit corridors that should be the priority for transit investment and intensification, and municipalities are encouraged to work with the Province and stakeholders to undertake a co-ordinated approach to planning for large areas with high concentrations of employment that cross municipal boundaries.

Strategically planned and located infrastructure plays a central role in building compact, transit-supportive communities that contribute to economic competitiveness, curb sprawl, build resilience to climate change and protect vulnerable agricultural land. Protections for the Greenbelt Agricultural System and Natural Heritage System are particularly important in terms of infrastructure development/ expansion in the Greater Golden Horseshoe.

It can also have a range of co-benefits, including responding to the impacts of climate change and protecting endangered species and biodiversity, as was noted in the Environmental Commissioner of Ontario's 2017 Environmental Protection Report, *Good Choices, Bad Choices: Environmental Rights and Environmental Protection in Ontario*.

As required by the IJPA, ministries need to consider alignment with the Province's land-use planning framework as part of their internal infrastructure planning. Asset location decisions must be well documented — noting factors considered and trade-offs made. Ontario's infrastructure assets need to contribute to the communities and environment surrounding them. New, expanded or modified assets must be integrated with, and build on, the existing service and employment hubs surrounding them.



The Province wants its infrastructure decisions to be better informed by local plans and priorities, and is working with communities to better align provincially-funded infrastructure with the provincial land-use planning framework. Through this approach to long-term infrastructure planning, Ontario is also looking through the lens of the broader well-being and service needs of communities, which will support the government's commitment to implementing the recommendations of Community Hubs in Ontario: A Strategic Framework and Action Plan.

This will help to ensure that public-service facilities, such as hospitals, long-term-care facilities, libraries and schools are located to support the achievement of complete communities and protect employment lands. The Province already requires municipalities to have official plans that align with provincial plans and policies and to have updated zoning, and the Province ties this requirement to funding for infrastructure, as appropriate.

Co-ordinating Planning

It is critical that the Province co-ordinates its planning — within and across the provincial government and externally — and brings the right people into the planning process.

One policy tool that governments use to co-ordinate construction is a “one-dig” policy, which encourages the co-ordination of different infrastructure or utility projects to take place at the same time. For example, if a community needs to repair a watermain and will have to install broadband fibre cables, a one-dig policy would encourage these two construction projects to happen at the same time, rather than having two separate construction projects in the same place at different times.

Having to experience multiple “digs” in the same location is a long-standing complaint from communities,

businesses and residents. Multiple digs also increase the impact of infrastructure investments on the natural environment. Using a “one-dig” policy to co-ordinate construction of roads, water and wastewater infrastructure, broadband, and utilities could help reduce these impacts.

This co-ordinated multi-infrastructure approach should apply at all phases of planning, including the identification and protection of future multi-purpose infrastructure corridors, and the co-ordination of rehabilitation work for different types of infrastructure in the same area.



ONE-DIG POLICIES IN PRACTICE

Metrolinx is already working toward “one-dig” by working with Ontario and municipalities when constructing transit projects to co-ordinate transit infrastructure construction, highway and bridge improvements and local road and utility upgrades.

Municipalities like Toronto are also pursuing this policy. Toronto has established a co-ordinating committee to work closely with utility companies and Internet Service Providers to implement innovative ways of reducing the impact of construction.

The City of Toronto established a Major Capital Infrastructure Coordination Office (MCIC) to provide greater cohesion and co-ordination in the planning and implementation of capital projects.⁷ Effective communication and automation of key processes permits MCIC to ensure that concurrent and consecutive investments in linear and site-specific projects occur in a logical and cost-effective sequence.

ONTARIO IS DEVELOPING LONG-TERM TRANSPORTATION PLANS AND STRATEGIES

Through initiatives under way, such as the Greater Golden Horseshoe Transportation Plan and the Northern Ontario Multimodal Transportation Strategy, the government is conducting long-range planning for regional transportation needs in the decades ahead that integrates analysis and forecasts for future demand. These initiatives take into account technology, socio-economics, accessibility and climate, and their potential impacts on needs for future transportation infrastructure.

Ontario’s Greater Golden Horseshoe (GGH) Transportation Plan is a new initiative that incorporates a scenario-planning approach, using strategic foresight to look out to 2071. It includes a Horizon Scan (research into a broad range of emerging issues), consultation with experts (thought-leader interviews and workshops) and the development of several distinct future narratives about the GGH region, each based on a different mix of emerging issues, risks and opportunities. The resulting narratives will be used to model a broad range of potential futures for the GGH, so that the government can determine how the transportation system can best meet future needs.

⁷ City of Toronto. <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=40c2a58e82cc1410VgnVCM10000071d60f89RCRD&vgnextchannel=fddd410becbc1410VgnVCM10000071d60f89RCRD>



2.3 CONSIDERING CLIMATE CHANGE

The Government of Ontario recognizes the growing strain climate change is putting on the province's infrastructure, including on capital and operations and maintenance budgets. It is committed to ensuring that long-term infrastructure planning is aligned with Ontario's provincial climate change priorities. This means making choices about how Ontario delivers services to avoid or reduce greenhouse gas (GHG) emissions and supporting the government's broader efforts to move toward a more energy efficient and prosperous low-carbon economy. It also means ensuring that the provincial infrastructure is resilient to the effects of a changing climate.

Ontario spends billions of dollars each year in procurement, building the schools, hospitals, public transit and community assets that Ontarians rely upon. By building it right from the start, the government can ensure that it is doing its part to reduce carbon emissions and improve environmental quality.

Climate Change Mitigation

Ontario's Climate Change Mitigation and Low-Carbon Economy Act, 2016 sets targets for reducing GHG emissions — 15 per cent below 1990 levels by 2020, 37 per cent below 1990 levels by 2030 and 80 per cent below 1990 levels by 2050. The Ontario Government has also set a target to reduce emissions from its own operations — 50 per cent below 2006 levels by 2030. Meeting these targets will require a transformation toward a low-carbon economy. To help meet these targets, Ontario is leading and supporting actions to ensure climate change mitigation is taken into account across government and throughout the planning process, including the making of decisions on capital expenditures for infrastructure projects.

Ontario will also do its part to reduce the environmental impact of infrastructure investments by integrating life-cycle assessment (LCA) into infrastructure planning, procurement, business case development and decision making processes. To contribute to this goal and support reductions in GHG emissions, the government is moving to integrate life-cycle assessment into long-term infrastructure planning.

Life-Cycle Assessment

In addition to considering the total cost of an asset over its lifespan, the government needs to consider the total environmental impact of a project. The construction, operation, maintenance, retrofits and decommissioning of infrastructure projects result in GHG emissions and other environmental impacts. Life-cycle assessment (LCA) is a tool that can be used to measure the environmental impact of an infrastructure asset over its lifespan. It can help identify lower-carbon design, materials and construction options for new builds and retrofits to reduce the environmental impact.

Integrating LCA into infrastructure planning can move the province toward a low-carbon future. Investing in GHG reductions in Ontario's infrastructure planning, design, construction and operations could create economic opportunities for low-carbon products across Ontario's economy.

Taking a life-cycle perspective in the infrastructure decision making process means the Province will be able to address the impact of infrastructure on climate change strategically, throughout planning and priority-setting.

LCA results will help government make evidence-based decisions about whether it's better to build



a new asset or to retrofit an existing one. Ontario will also be able to use LCA results to compare environmental trade-offs between options to address a given service need.

The government is taking a phased approach to introduce LCA into the province's infrastructure-planning and procurement processes. It is starting to integrate LCA into infrastructure planning in phases by:

- continuing to consult with technical experts in Fall 2017 for advice on the implementation of LCA
- identifying potential infrastructure projects to demonstrate the LCA approach, which could involve including LCA in the procurement of some large, complex projects in 2018
- providing tools and guidelines for life-cycle environmental considerations to be incorporated into ministries' business cases for infrastructure investments in 2018

Starting in 2019, the Province plans to roll out LCA broadly as a tool to support evidence-based infrastructure decisions. Taking an LCA approach will support both the transformation of service delivery and Ontario's transition to a low-carbon economy. Ontario will work toward having a LCA for major infrastructure projects by mid-2020.⁸

The Government of Ontario will continue to work to integrate other climate change tools into infrastructure planning and decisions, including the application of a social cost of carbon. The social cost of carbon is one tool which measures, in dollars, the quantifiable costs and benefits of emitting one additional tonne of carbon dioxide. The social cost of carbon can help provide a comprehensive estimate of the potential damage from emissions, including changes to agricultural productivity, human health, property damage from increased flood risk, and changes in energy system costs. In addition to the measures offered through LCA, the potential exists to apply carbon-emission values in assessing the true cost of projects and infrastructure decisions.

⁸ Major public infrastructure projects are expansion, renewal or replacement projects undertaken or funded by ministries that have a significant capital cost to government; that carry significant risk for the province; or that are otherwise of a significant provincial interest. As per the current Directive for Major Public Infrastructure Projects (2015), major projects would include any infrastructure projects with capital costs (excluding property acquisition) greater than \$50 million for transportation expansion, or \$75 million for transportation rehabilitation, or \$20 million for all other sectors.



By integrating LCA into decision making, as well as other efforts to ensure that climate change mitigation is fully considered during the infrastructure planning process, the government will support the use of lower-carbon materials, services and climate-conscious decision making during the procurement process. For example, the Province is considering how requiring Environmental Product Declarations (EPDs), which provide information on the life-cycle environmental impact of a product or material, could be an early step to support evidence-based infrastructure procurement processes and decisions.

In particular, the IJPA requires the government to minimize the impact of infrastructure on the environment, as well as make efforts to use acceptable recycled aggregates. The use of recycled aggregates and other low-carbon materials can reduce the GHG impact of infrastructure construction and the province's overall carbon footprint. For example, low-carbon concretes can reduce the GHG impact of infrastructure construction.

Developing and integrating tools, such as LCA and the social cost of carbon, to measure and consider the climate implications of infrastructure decisions will help support the Province's efforts to promote and build capacity for climate-conscious

A STRATEGY FOR A WASTE-FREE ONTARIO

Promoting the use of recycled materials is in line with the Waste Free Ontario Act, which was proclaimed in 2016. This legislation will tackle the problem of waste generation by increasing resource recovery and moving toward a circular economy. At the heart of the legislation is the idea that producers should be responsible for the end-of-life management of their products and packaging.

The legislation is accompanied by the Strategy for a Waste-Free Ontario: Building the Circular Economy. This strategy lays out Ontario's vision for a circular economy and goals of a zero-waste Ontario with zero greenhouse gas emissions from the waste sector.

decision making across government. This capacity will help facilitate a stronger consideration and understanding of the complexities of low-carbon opportunities. For example, some construction materials may have a low environmental impact during extraction and production, but the transportation impacts could negate any environmental benefit. At the same



REDUCING GOVERNMENT'S FOOTPRINT TO REDUCE CARBON EMISSIONS

The Province is making more efficient use of its real estate and is committed to shrinking the provincial government office footprint (total square footage for office space) by 1.3 million square feet by 2022. As of March 2017, it had achieved 85 per cent of this target. Reducing government office space saved \$29 million between 2012 and 2017, reducing the government's carbon footprint and freeing up money to invest in priority programs and services that will benefit all Ontarians.

time, LCA, and the underlying data that supports it, are evolving areas of expertise, which in some cases yield variations in the interpretation of impacts from different products and processes. This can complicate direct comparisons of the relative environmental impacts of certain materials, processes, products and projects. The government will take an evidence-based approach to help manage these areas of uncertainty.

Climate Change Adaptation

Climate change impacts pose a threat to Ontario's infrastructure networks and the communities that depend on them. Improving the government's capacity to adapt to current and future impacts of climate change will build Ontario's resilience. It can also reduce the need for new or upgraded infrastructure by avoiding repair and replacement costs. For example, leveraging natural vegetation, such as existing wetlands, to improve stormwater management, can sometimes avoid the need for traditional infrastructure entirely.

Infrastructure investments require the application of a "risk lens" to protect their future. Infrastructure planning, design and construction require an understanding of future climatic conditions, vulnerabilities and potential risks to ensure that infrastructure, and infrastructure budgets, will not be compromised by climate change impacts.

The Ontario government is already working to address adaptation needs through risk assessments, criteria for municipal funding programs and infrastructure procurement processes.

The Province is taking additional steps to address climate change and its impacts on infrastructure. It is establishing a new organization that will provide municipalities, Indigenous communities, and businesses with up-to-date and critical information and data, as well as practical services to build resilience and help keep Ontarians safe. This information will also help government make evidence-based investment decisions to build resilient infrastructure across Ontario.

The Province will also be undertaking a provincial climate change risk assessment to help build a better understanding of the current and anticipated climate change impacts facing Ontario and help to provide a better understanding of the vulnerabilities and risks facing Ontario's communities, infrastructure, ecosystems and economy. Infrastructure planning and investment based on the outcomes of this risk assessment will allow for a more strategic approach to adaptation by government, helping ensure that decisions are evidence-based and resilient. This will save Ontarians and the Ontario government money in the long term.

Ontario-led efforts to increase resilience will be achieved in a variety of ways, including through climate change-related policies in infrastructure asset



plans, investment directives and decisions, and land-use planning direction such as the Provincial Policy Statement (2014) and the Growth Plan for the Greater Golden Horseshoe (2017). Ontario will also work with federal, provincial, municipal and Indigenous partners to learn from best practices and harmonize adaptation strategies, standards and tools.

Low Carbon Building Skills

As part of Ontario's Climate Change Action Plan, the Province is investing \$24 million in 2017–18 (funded from the proceeds of the province's carbon market) to develop a Low Carbon Building Skills (LCBS) initiative. The initiative is intended to improve training, workforce and technical capacity to ensure Ontario's workforce has the skills needed to deliver on the priority of reducing energy use and carbon emissions. LCBS activities will support training providers, including colleges and universities, unions, employers and other industry stakeholders, to acquire new equipment and to increase their capacity to train current and future workers in low carbon building skills, through:

- sector-focused partnerships to support training programs in green building skills
- new and upgraded facilities and more capacity to support green building skills training
- new green curriculum for apprentices
- research on green labour force and skills needs

THE COST OF DISASTER PREVENTION

Extreme weather events are becoming more frequent and more severe because of climate change. Building adaptable and resilient infrastructure can help communities weather these storms. For example, heavy rains can cause flooding if appropriate adaptation measures are not in place, such as proper drainage or green space to absorb water. If the consequences of these weather events are not understood, it can be difficult to justify these investments.

The Insurance Bureau of Canada recently conducted a study on the economic impacts of climate-related extreme events on communities in Canada.⁹ Not surprisingly, it found that these extreme weather events cause significant damage to both private and public infrastructure and result in significant overall economic losses, through events such as business interruptions. Extreme weather across Canada in 2016 caused a record \$4.9 billion in insurable damages, an increase of more than 50 per cent over the previous annual record set in 2013.¹⁰

⁹ Insurance Bureau of Canada. <http://www.ibc.ca/ns/resources/studies/the-economic-impacts-of-the-weather-effects-of-climate-change-on-communities>

¹⁰ Insurance Bureau of Canada. <http://www.ibc.ca/nb/resources/media-centre/media-releases/severe-weather-natural-disasters-cause-record-year-for-insurable-damage-in-canada>



ONTARIO IS SUPPORTING FLOOD PROTECTION IN THE PORT LANDS



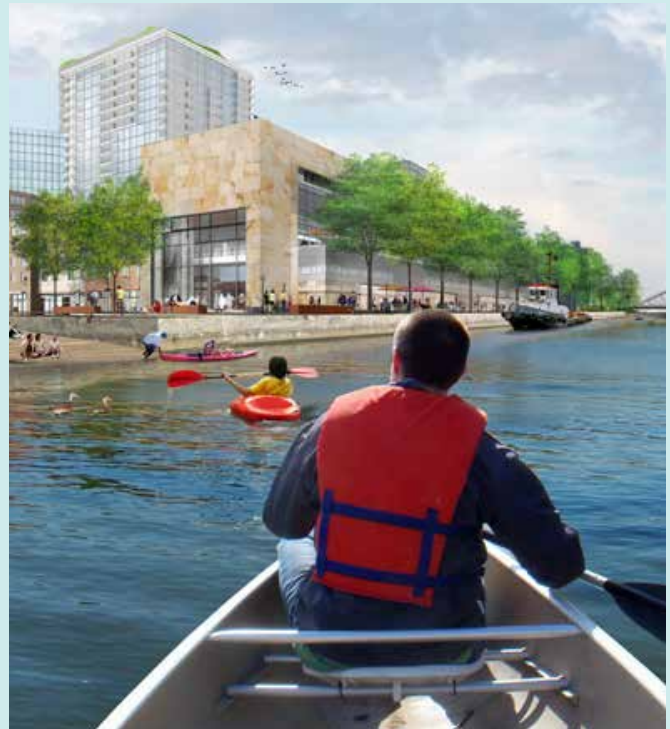
Sitting on Toronto's waterfront, just on the edge of a booming downtown, there's an area of much untapped potential — an expanse of industrial lands, desperately waiting for redevelopment.

The Port Lands area was created in the late 1800s by filling in what was once Ontario's largest wetland to create land for industry — and by forcing the Don River to make an unnatural 90-degree turn into a concrete channel to reach Lake Ontario.

With industry now all but gone, the Province and its federal and municipal partners are setting in motion the preliminary work to be done by Waterfront Toronto. The work is needed to help transform these lands, through a \$1.25-billion investment in flood protection.

Without this work, new projects cannot begin.

This year's heavy rains quickly showed what happens if the right infrastructure isn't in place. The Toronto Islands were off-limits due to heavy flooding. Sudden downpours can wreak serious damage.



Climate change is bringing more dramatic and unpredictable weather, demonstrating how important it is to be prepared.



That's why the governments are pushing ahead with this critical infrastructure work in the Port Lands that will unlock 240 acres of prime real estate for development, as well as protect some existing neighbourhoods from flooding.

It is an ambitious, seven-year project, which includes creating two new outlets for the Don River — a 1,000 metre river valley and greenway — that will safely deliver flood waters into Lake Ontario. As well, it calls for new infrastructure in the area, such as roads, bridges and services to support development.

The project also includes creating 29 hectares of naturalized area in the river valley, two new parks and 14 hectares of aquatic habitat. And it will carve out a new urban island known as Villiers Island.

The goal is to transform the Port Lands — an area equivalent to 240 soccer fields — into a new vibrant mixed-use community with commercial development, residential housing, including affordable rental housing, along with new trails, wetlands and aquatic habitat.

Governments understand how their infrastructure dollars can be leveraged to bring other future investments — and that's why public investment often creates a domino effect.

This project lays the foundation to change Toronto's vast waterfront — a rare opportunity to transform so much undeveloped land in the heart of Canada's largest city into usable public space.



2.4 ENABLING COMMUNITY HUBS

As the government makes infrastructure investments, it is moving away from single-use facilities to an integrated multiple-uses approach — for example, schools or postsecondary education facilities that can accommodate child-care centres or community hubs, or that can support service-delivery integration with community-support programming in areas of demand. These projects allow a community-led, government-enabled environment to thrive.

The government is looking at how it can prioritize infrastructure projects based on co-location and support for integrated service-delivery models. Community hubs are one important tool to integrate planning and service delivery.

A community hub can be a school, a neighbourhood centre, a cultural organization or another public space (e.g., a library, a community museum) that offers co-located or integrated services, such as housing, children's services, Indigenous community services, seniors' housing, health care, employment and training, education and poverty reduction. Each hub is as unique as the community it serves. Community hubs can also provide infrastructure for settlement supports for new immigrants and important community supports to integrate newcomers into communities throughout the province.

Community hubs bring strong social and economic benefits to a community. For decades, local champions and partners in Ontario have been coming together to create hubs in response to community needs. Today, community hubs across the province offer a wide range of services through a variety of models reflecting the diversity of Ontario. The Province is committed to developing community hubs to bring services together in one place and to make better use of public spaces to serve Ontarians.

The development of community hubs is about enabling civic engagement with new and non-traditional partners, using new ways of thinking and accessing technology to contribute to the economic competitiveness of communities, fostering social cohesion and strengthening neighbourhood liveability. Supporting the development of community hubs will place Ontario at the forefront of a movement to redefine and revitalize the government's shared places and spaces that is essential to the continued success and well-being of Ontario's diverse communities.

In 2015, the Premier's Community Hubs Advisory Group released *Community Hubs in Ontario: A Strategic Framework and Action Plan*. It included 27 recommendations related to improving the use of public properties and integrated planning focused on community needs. The government accepted all the recommendations.

Being able to access multiple services under one roof can make everyday life easier for Ontario's families. Through our community hubs initiative, our communities have spoken loudly and clearly about the importance of protecting public assets where there is demonstrated public need. Accordingly, the province is intending to move forward with a Social Purpose Real Estate strategy that embeds community and social needs into government decision making on surplus properties and infrastructure planning.

Ontario is strongly committed to enabling the development of community hubs and removing barriers to their creation and growth. The government is currently:

- redesigning the Community Health Capital Program policy, which streamlines funding



applications and expands funding eligibility to support the co-location and integration of multiple health and social services under one roof

- doubling the funding under the Investment in Affordable Housing (IAH) initiative, with the IAH funding targeted to provincial priority areas, including affordable housing projects that support community hubs
 - significantly increasing capital funding for schools, including funding specifically targeted to supporting the use of schools as community hubs, with eligibility for funding expanded in ways that will support replacement space for community hubs when schools are closed or sold
 - exploring the use of innovative financing models for community hubs, including social-enterprise, social-finance and public-private partnership models
- assessing options to improve Infrastructure Ontario's lending capacity for community hubs
 - supporting the Surplus Property Transition Initiative, which provides financial support, if needed, to hold surplus public properties in the public domain for up to 18 months, allowing proponents time to develop business cases for proposed community hubs



COMMUNITY HUBS IN ACTION: BETTER LONG-TERM CARE IN TORONTO

The City of Toronto's Kipling Acres recently celebrated the successful completion of a two-phase redevelopment project under the Long-Term Care Home Renewal Strategy.

Situated on a 10-acre site and designed to meet both Leadership in Energy and Environmental

Design (LEED) Silver standards and the new City of Toronto Green Standard, the 337-bed home provides long-term care, convalescent care, behaviour-support programs and care to young adults.

The home includes a community hub with an Adult Day Program, the Kipling Early Learning and Child Care Centre and the West Acres Seniors' Centre, which offers wellness and recreation programs for seniors in the local community.







COMMUNITY HUBS IN ACTION: UNISON HEALTH AND COMMUNITY SERVICES IN TORONTO



A small patch of land not bigger than a third of an acre in northwest Toronto symbolizes what a community can achieve when it works together.

Almost 1,000 pounds of vegetables, fruits and herbs were harvested in a single growing season from this garden at the Bathurst-Finch Hub. Cherry tomatoes, garlic bulbs and okra were among 42 items donated to the food bank next door.

"People are so grateful of getting produce within 24 hours of being picked," said garden steering committee member, Alex Lynk, who works with about 30 other volunteers. "They walk by asking, 'What's coming next week?'"

That's the kind of benefit a community hub can deliver. It helps to bring people together, offering integrated services.

At the centre of the hub is Unison Health and Community Services, which provides primary health care, and coordinates flu shots, diabetes education and even counselling, plus dental care offered through Toronto Public Health. Another dozen agencies offer services such as legal aid, employment help and immigration settlement.



Ontario sees community hubs as a critical and effective way to deliver much-needed services in an integrated way.

Each hub is unique, tailored to the needs of a particular community. Some are new purpose-built construction, like the Bathurst-Finch site, while others are adapted from underused facilities like an old school, while still others are virtual hubs.



In all cases, they have the common connection of bringing people together to serve the community. In fact, resident groups can book space for free, while other groups pay sliding rates.

“We are much more than a nice building,” said Bathurst-Finch Hub manager Simon Cheng. “Without the physical space, there would be no hub.”

Cheng tells the story of a patient suffering from high blood pressure. The doctor could easily prescribe the needed pills, but he learned that the root cause of the patient’s anxiety was his uncertain immigration status in Canada.

A quick walk downstairs later, the doctor was able to connect the patient to the legal clinic, in the same building. A follow-up appointment showed the hypertension was under control.

The Bathurst-Finch Hub, which opened in 2013, leases its land from the Toronto District School Board and shares parking with the high school next door.

As a result, there’s a close relationship between the hub and the school.

When the garden steering committee needs wooden boxes to ensure beds are high enough to be accessible to a visitor using a wheelchair, the hub will supply the necessary materials. Lynk works with a teacher, who will get students to build them as a class project. With more than 250 visitors each day, the Bathurst-Finch Hub has quickly become a second home for many, especially seniors.

Eta Papp, 80, and Edna Charleycombe, 75, are regulars. They come four times a week for yoga and tai chi classes.

“Instead of staying home, we come out and exercise,” said Charleycombe.

“Rain or shine, we are here,” said Papp.



2.5 SUPPORTING MODERN SERVICE DELIVERY

Globalization, technological advancement and the emergence of the digital economy are changing the nature of service delivery in Ontario — and around the world. Ontario's knowledge-based economy is becoming increasingly reliant on technology, as businesses embrace new innovations that require more data, transmitted at faster speeds.

New, disruptive technologies, such as mobile Internet, the Internet of Things, cloud-based computing, advanced robotics, automated vehicles and artificial intelligence, are advancing rapidly every day. These technologies and others — many that are yet to be developed — will change the way the government works and people live in the future, in ways no one can predict today.

Taking a proactive approach to technological innovation is key to Ontario's economic growth and future prosperity. Ontario has been recognized as an emerging leader in Information and Communications Technology (ICT), automatic-production and financial-services — and it remains at the forefront for the advancement of disruptive technologies. It also continues to produce some of the best talent in the world.

It is important to leverage these strengths, while adapting and growing to remain competitive in the evolving global economy. To do so, Ontario's businesses will require widely available, reliable, fast and affordable access to digital infrastructure. As the government invests in broadband infrastructure, it must ensure that the technology is future-ready and will still be relevant in 20 years.

Day-to-day activities, such as working, learning and communicating, will increasingly require advanced telecommunication services that are accessible to all

Ontarians. Furthermore, the government recognizes that broadband connectivity will continue to be essential to enable meaningful civic engagement, inclusive growth, economic development and access to government and public services.

The Province is committed to building a foundation of digital infrastructure — including accessible, affordable, high-speed broadband networks — that will enable Ontarians to live, participate and compete in the digital world. Leveraging these new technologies, and ensuring connectivity across Ontario, will also help provide modern services that meet Ontarians' needs.

ONTARIO IS SUPPORTING ACCESS TO MODERN TECHNOLOGY IN EDUCATION

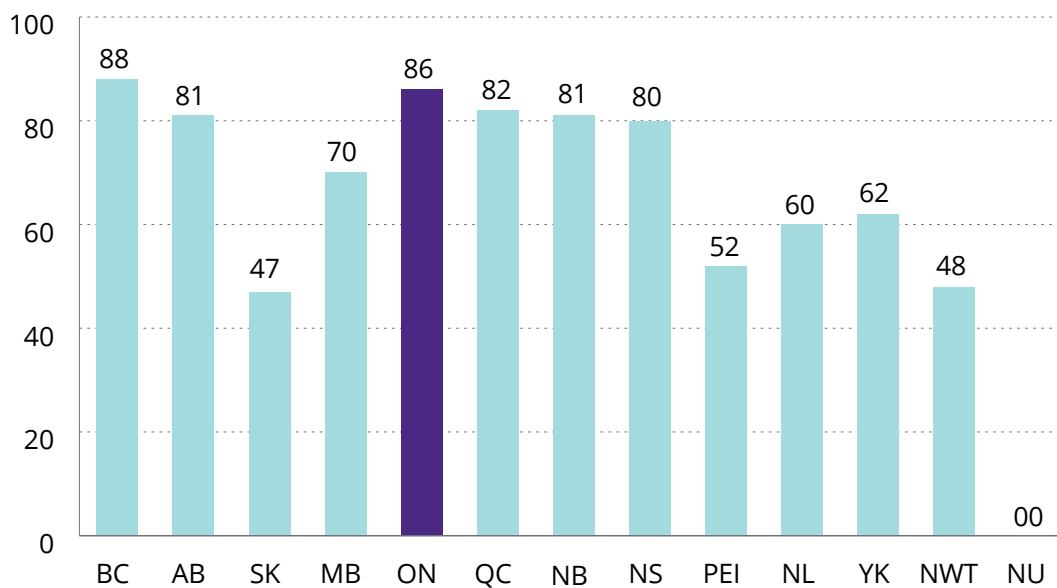
To support the learning and teaching requirements of the 21st century, the government is ensuring that Ontario's publicly-funded school boards have equitable and affordable access to high-speed broadband services. The Broadband Modernization Program (BMP) will help ensure an adequate level of broadband connectivity for Ontario's students and educators to support enhanced student achievement and well-being through connected, innovative learning environments. The BMP is a collaborative effort between the government and school boards — developing customized approaches to each board's broadband solution. In May 2017, the government announced \$50 million in funding for this multi-year project.



Broadband in Ontario

Although Ontario's broadband Internet service levels are among the highest in Canada, there is still room for improvement, for example, in Ontario's Northern and remote communities.

Figure 5: **Wireline Broadband Availability, by Percentage of Households at 50+ Mbps Download, 2015**



Source: CRTC Data Collection

The Province is committed to expanding broadband infrastructure and improving connectivity in both rural and urban communities, including First Nations, across the province:

- Since 2007, the Province has committed close to \$490 million toward broadband investments across Ontario.
- Provincial investment has encouraged Ontario's Internet Service Providers to address broadband service gaps through more than 60 projects. Two major regional projects in northwestern and eastern Ontario were completed in 2014–15.
- The Northern Ontario Heritage Fund Corporation (NOHFC) continues to partner on investments in broadband coverage or service expansion projects in the North.

- In July 2016, the Province announced that Ontario and Canada would each invest up to \$90 million toward the Southwestern Integrated Fibre Technology (SWIFT) project, a fibre-optic network that will improve high-speed Internet connectivity across southwestern Ontario when complete.
- Ontario is also investing in a number of initiatives that are dependent on a reliable broadband infrastructure backbone. One example is the Vector Institute, a new institute for artificial intelligence that will ensure businesses in the province continue to stay ahead in the innovation economy, and attract investment and top talent.

The Province will continue to work with the federal government to emphasize the importance of broadband as a key element in current and future federal infrastructure investment programs.

The Government of Ontario also continues to engage with the Canadian Radio-television and Telecommunications Commission (CRTC), the public authority in charge of regulating Canadian telecommunications. In 2016, the Province strongly supported the CRTC's decision to declare broadband a basic service. The government was also pleased to participate in public consultations to inform the design of the CRTC's new \$750-million broadband development fund — created to support the development of broadband infrastructure in unserved and underserved areas.

The Government of Ontario is committed to working with its federal, municipal, private-sector and First Nations partners to ensure Ontario has the best possible broadband infrastructure to support jobs and growth across the province, including by prioritizing the need for co-ordinated and strategic investments in broadband.

Working with federal and municipal orders of government and First Nations, the Province will prioritize the need for co-ordinated and strategic investments as it continues to expand broadband infrastructure and improve connectivity in communities across the province. This will include working towards developing a broadband strategy that will outline a vision for broadband connectivity, identify key priorities and outline a roadmap to achieving them, including leveraging private sector expertise and financing, as well as federal cooperation through the Canada Infrastructure Bank. A draft broadband strategy will be developed for consultation in 2018.

ONTARIO IS EXPANDING BROADBAND INFRASTRUCTURE IN FIRST NATIONS COMMUNITIES

People living in five Northern Ontario First Nations communities will be able to connect with friends and family across Canada and globally, and have improved access to distance education, skills training, and new business opportunities, thanks to a joint investment from the Government of Canada and the Province of Ontario of up to \$69.2 million in the Ring of Fire region.

The Province is pleased to support this broadband project and Ontario will invest up to \$30 million in Matawa First Nations Management Inc. to bring modern fibre-optic cable to the area. The project will see the installation of buried cable from Wunnumin Lake through the five Matawa-member communities of Nibinamik, Neskantaga, Eabametoong, Marten Falls and Webequie First Nations, connecting south to Aroland First Nation.



The government is also committed to investing in cutting-edge technology by supporting research and development of transformative technologies. For example, 5G (fifth-generation) wireless technology aims to increase telecommunications network capacity and speed by up to 1,000 times for mobile and connected devices. It will serve as the backbone infrastructure for technologies such as automated vehicles.

Smart Cities in Ontario

Sustainable and efficient Smart Cities rely on connectivity. They integrate technology and big data with municipal processes to foster economic growth, enhance service delivery and improve quality of life. While the concept continues to evolve, Smart Cities of the future will have the potential to address important issues, such as equity, governance, climate change and resilience.

Smart City initiatives may also foster the development of smart infrastructure — infrastructure systems that are connected to the Internet of Things, and able to sense, interact and respond directly to user needs. Smart infrastructure holds the potential to enhance real-time data collection and analysis, improve the efficiency and environmental impact of existing assets (such as roads, buildings and electric grids) and support Ontario's advancement in future technologies — energy, water or waste management systems.

The Province recognizes the potential benefits of investing in Smart City initiatives in Ontario. It supports the federal government's \$300-million commitment to launch the Smart Cities Challenge — a nationwide, merit-based competition that will support communities that are developing innovative

Smart City projects. As the Province engages with its federal partners on this new initiative, it will also explore the best ways to support Ontario municipalities in promoting innovation, collaboration and technology in community practices.

ONTARIO IS INVESTING IN 5G

The Province is investing \$130 million over five years in two projects — \$67 million in 5G technology development and \$63 million in next generation networks. Through partnerships with industry-led consortia, these projects will advance the development and commercialization of 5G and next-generation technologies and networks across Ontario. This test bed will connect small and medium-sized enterprises across the province, including in Northern and rural Ontario, leveraging the Ontario Research and Innovation Optical Network.



MUNICIPAL BROADBAND SPOTLIGHT: STRATFORD AS A LEADER IN INTELLIGENT COMMUNITY DESIGN

Historically known for its famous Shakespeare festival, the City of Stratford is now globally recognized as one of the world's Intelligent Communities. According to the Intelligent Community Forum (ICF), some major indicators of intelligent communities include robust broadband infrastructure, a knowledgeable workforce and innovation. The ICF recognized Stratford as one of the world's top seven intelligent communities three years in a row, from 2011 to 2013.

Work began in 1997, when the City undertook a proactive approach to understanding and assessing Stratford's prospects for economic and civic prosperity. It was determined that the key to revitalizing Stratford's manufacturing base, bolstering its community network and fostering new areas of economic growth would be cultivating a "triple helix" of partnerships among public entities, private corporations and education stakeholders.

In 2006, the Southwest Economic Alliance held their inaugural conference in Stratford, which led to a commitment by Stratford and the University of Waterloo to explore the creation of a new campus in Stratford that would focus on digital media. This concept would combine the University of Waterloo's strengths in technology and business with Stratford's strengths in arts and culture. Today, the University of Waterloo Stratford campus is thriving, along with the Stratford Festival HD, a project that will digitally capture every Stratford Festival play for the next 10 years.

In the 1990s, access to high-speed Internet went from novelty to necessity. Recognizing this, the City's local distribution company began laying optical fibre in 1992 for large industrial and institutional customers. Over the years the utility has installed 40 kilometres of fibre-optic cable and produced significant municipal revenue. In 2008, the Ontario Energy Board mandated that electrical utilities adopt "smart meters" to enable time-of-use billing and encourage off-peak usage and energy conservation. Festival Hydro and the City opted to create a Wi-Fi network to cover the entire city.

A ubiquitous, mobile wireless Internet platform has opened up a whole dimension of possibilities. The presence of a leading-edge broadband infrastructure has also attracted pilot projects, ranging from LED lighting to "smart home" space, involving international companies such as Toshiba, Blackberry, Onkyo, AnyCOMM, Bridgelux, Molex, LeoNovus, Cisco and QNX.

Stratford's significant investment in digital infrastructure and efficient use of a public-private partnership has paid extraordinary dividends, as Stratford was recently selected as the first Canadian city to test connected vehicles. Stratford is also piloting a Smart Parking project in co-ordination with Canadian Open Data Exchange. The City of Stratford has made great strides toward becoming Canada's next international technology hub.



BARCELONA IS A SMART CITY

Smart initiatives in Barcelona are efficient and sustainable, helping the city save energy, water and money. These initiatives also support better public services.

- **Transportation:** Digital bus stops provide updates on bus location and include USB charging stations, free Wi-Fi and tools to help riders navigate and learn about the city. Barcelona has also invested heavily in bike sharing.
- **Parking:** A sensor system guides drivers to the nearest available parking space. Sensors in the pavement can tell where cars are parked and the location of empty spaces. By directing drivers to open spaces, the program has reduced congestion and emissions. Drivers can also pay for parking online to save time.
- **Lighting:** Lampposts sense when pedestrians are near and provide light. When the streets are empty, the lights automatically dim to save energy. They serve another purpose by collecting data on air quality and relaying information to city agencies and to the public.
- **Wi-Fi:** The lampposts are also part of the city's Wi-Fi network, providing consistent free Internet access throughout the city.
- **Parks:** Sensors to monitor rain and humidity allow the city to determine how much irrigation is needed in each area. This program saves water and money.
- **Waste management:** Households deposit waste in smart bins that monitor waste levels and inform municipal service providers when bins are full to help plan the best collection routes.



2.6 WORKING WITH PARTNERS

All infrastructure is local, and people interact with infrastructure in their local communities. In planning infrastructure investments, the Province is working very closely with communities to make sure that the government makes the right infrastructure planning decisions — that is, having the right type of infrastructure in the right place and ready at the right time. In Ontario's infrastructure planning, the Ontario government works closely with the province's 444 municipalities, the federal government and First Nations.

Municipal and Regional Governments

Municipalities and regions are drivers of economic development and major infrastructure operators. Therefore, regional co-ordination and planning is important. For example, Metrolinx plays an important role in both regional transit planning and service delivery in the GTHA.

INVESTMENTS IN WATER AND WASTEWATER IN FIRST NATIONS COMMUNITIES

The Clean Water and Wastewater Fund is a joint federal-provincial program that provides funding to support water, wastewater and stormwater rehabilitation and modernization projects across the province. More than 115 First Nations applied for funding under this program, and more than 235 projects have been approved. The federal government is contributing almost \$9 million, and the Province is contributing about \$4.5 million over three years toward these projects.

We recognize that municipalities are important partners in planning and building the critical infrastructure on which the people of Ontario rely. That is why we are supporting communities in making smart, sustainable investments in infrastructure such as roads, bridges, public transit and water-management systems.

Improved asset management planning has been a key objective of Ontario's Municipal Infrastructure Strategy since 2012. The strategy provides a framework for the Province to work collaboratively with municipalities and the federal government to help address the challenges of current and emerging municipal infrastructure needs. The strategy commits the province to making progress in the following three areas:

- universal asset management planning and public reporting
- optimal use of the full range of budgeting and infrastructure financing tools
- attention to the structural challenges confronting small municipalities

Since the launch of the strategy, the Province has been working with municipalities to make asset management planning the foundation of infrastructure investments. It started with Building Together: Guide to Municipal Asset Management Plans, and offered seed funding to help municipalities prepare their asset management plans.

Over time, provincial funding programs for municipal infrastructure have required communities to demonstrate a growing commitment to asset management. In addition, the Province has been developing the funding model to focus more on stable and predictable formula-based grants to help municipalities plan and turn their plans into action.



Municipalities have made considerable progress on asset management planning. Today, almost all municipalities have an asset management plan. This is a great achievement in a brief period. At the same time, many municipalities still face significant infrastructure challenges.

The Province is working to develop a municipal asset management planning regulation to further improve practices and support the long-term sustainability of municipal infrastructure throughout Ontario. In addition, the proposed regulation would help put in place a common approach to identify and define unfunded municipal infrastructure investment needs. This is the next phase of the Municipal Infrastructure Strategy, and it will address the strategy's first step: universal asset management planning and public reporting.

The government's proposed municipal asset management planning regulation includes a commitment for municipalities to consider:

- the actions that may be required to address the risks to the municipality's infrastructure assets caused by climate change
- any mitigation approaches to climate change, such as goals and targets for reducing GHG emissions
- disaster planning and any required contingency funding

The proposed regulation would also support enhanced data analysis. The data collected could help the Province and municipalities collaboratively address structural challenges and make better use of the full range of funding resources and financing tools. This is aligned with the second and third policy



goals of the Municipal Infrastructure Strategy. For example, this could include distributing provincial funding in a more evidence-based way. It could also involve targeted solutions to help address the unique challenges faced by individual communities or regions.

Federal Government

Ontario appreciates the investments that the federal government is making in provincial infrastructure. The federal government has made a commitment to invest over \$180 billion in infrastructure across the country. This includes investing \$11.9 billion nationally over five years in Phase One and \$81 billion nationally over 11 years in Phase Two of the Investing in Canada Plan.

The Government of Ontario is committed to working in partnership with its federal counterparts on Phase Two of Canada's Infrastructure Plan to create jobs and produce a stronger economy. The government is actively participating in the federal government's long-term infrastructure-plan engagement process.

Currently, the Province is in bilateral negotiations with the federal government to finalize the implementation of Ontario's allocation for the next phase of public transit, green infrastructure funding, community cultural and recreation and rural and Northern funding. The federal government has set a goal of finalizing these negotiations by March 31, 2018.



Results of the partnership can already be seen in the recent priority projects that have received joint federal and provincial funding under Phase Two:

- The \$1.25-billion Toronto's Port Lands Flood Protection Project will receive a federal government contribution of up to \$384 million and a provincial contribution of over \$400 million. These investments build on the \$65 million in funding — \$16.5 million from the City of Toronto and Province each, \$32 million from the federal government — previously committed through the Clean Water and Wastewater Fund and will increase the resiliency of the Port Lands by protecting them from flooding and support the potential for future mixed-use development.
- The federal government and the Province have each committed over \$1 billion in capital funding to the Ottawa Light Rail Transit Stage 2 Project, which will build on the Trillium Line (O-Train) and the Stage 1 Confederation Line LRT project by extending the LRT network to the east, west and south regions of the city.

Ontario applauds the federal government for establishing the Canada Infrastructure Bank (CIB). The Province shares its goals of investing in infrastructure projects that will contribute to long-term economic growth, create good, well-paying jobs, lower GHG emissions and build socially inclusive communities.



CIB funding will help Ontario to invest in large infrastructure projects that, otherwise, would be difficult to undertake.

We are also working with our federal and municipal partners to focus on the needs of small, rural and Northern communities to develop and renew their infrastructure. This includes roads and other transportation, bridge, water and wastewater projects and expanded broadband Internet service to better connect communities.

In order to maximize infrastructure investments by all three orders of government, it is important for municipalities, provinces and the federal government to work together to align their efforts. Ontario believes that federal infrastructure funding should support provincial and municipal government priorities and commitments. Based on the results of

Phase 1 infrastructure negotiations, the Council of the Federation, comprised of the Premiers of all 13 Canadian provinces and territories, agreed to seven principles to guide negotiations with the federal government on future infrastructure programs.

These principles, which were agreed to on July 19, 2017, are:

- Federal funding, including through the Canada Infrastructure Bank, must allow provinces and territories to fund planned priorities and commitments.
- Federal investments should be flexible enough to support a range of projects, from small to large.
- Federal funding should not result in additional fiscal pressure on provinces and territories, and municipalities, including cost-matching.



- Federal funding should be flexible and contribute towards advancing critical planning, environmental assessment, and design phases of infrastructure projects.
- Funds should be flowed directly to provinces and territories, and respect their existing relationships with municipalities.
- Agreement administration and reporting requirements should be streamlined, reasonable and appropriately resourced. Those requirements should recognize provinces and territories' existing reporting mechanisms.
- Agreements should be global (not project by project) and provide sufficient flexibility to re-profile funding between programs to align with investment priorities and respond to areas of greatest infrastructure need.

Ontario has worked with its provincial and territorial counterparts to advocate for these principles to guide ongoing negotiations and to ensure that investments realized through new agreements build on existing provincial and territorial commitments. In this context, the principles of transparency, accountability, fairness and collaboration are critical, including to encourage effective and streamlined delivery.

The Government of Ontario looks forward to continuing to work with the federal government to provide sustained long-term infrastructure investment in the province in line with these principles.



Indigenous Governments

The goal of inclusive growth is to benefit all Ontarians. Indigenous involvement in infrastructure projects is increasing, affording Indigenous peoples greater roles in infrastructure development ranging from training and employment opportunities to being equity partners. Supporting economic development in First Nations communities is one of many steps on Ontario's journey of reconciliation with Indigenous Peoples. It reflects the government's commitment to work with Indigenous partners, creating a better future for everyone in the province.

The Chiefs of Ontario and the Government of Ontario have signed a political accord that guides the relationship between First Nations and the Province. The accord affirms that First Nations have an inherent right to self-government and that the relationship between Ontario and the First Nations must respect this right. Ontario is continuing to work with its Indigenous partners to ensure a better future for First Nations, Métis and Inuit People in the province. The Province is committed to collaborating with Indigenous partners, particularly where capital investments can help address the needs of their communities.

The Province provides funding to Indigenous communities for their infrastructure needs through programs such as the Indigenous Community Capital Grants Program, the Small Communities Fund and the Clean Water and Wastewater Fund. The Province also works with Indigenous organizations to provide services, such as housing, to Indigenous people living in other communities off-reserve and in urban centres.

The Province is committed to working with the federal government and Indigenous partners to achieve real progress toward improving infrastructure in Indigenous communities.

TRIPARTITE FRAMEWORK AGREEMENT TO PROVIDE SUSTAINABLE FUTURE FOR KASHECHEWAN FIRST NATION

In March 2017, Ontario, the federal government, and the Kashechewan First Nation announced the signing of a Framework Agreement that will support a sustainable future for the roughly 2,300 First Nations members of the Kashechewan First Nation community.

Specifically, the tripartite agreement commits the parties to the development of an action plan to support the short-, medium- and long-term sustainability of the community, with a focus on improving outcomes in priority areas, including housing, socio-economic sustainability, health programs and facilities, infrastructure development and schools and community facilities. This collaborative initiative supports a better future for the people of Kashechewan First Nation and will include consideration of options for relocation of the community.

A steering committee of representatives of Kashechewan First Nation, the Ontario government and the Government of Canada will provide general oversight and guidance on the action plan, when developed. The committee will provide an annual report to parties on the progress made under this Framework Agreement.



FIRST NATIONS COMMUNITIES IN THE MANITOULIN ISLAND AREA

Through the Indigenous Community Capital Grants Program, the Province is supporting First Nations communities on Manitoulin Island and in the surrounding area by investing in:

- architectural drawings for an elders and youth centre for Sheguiandah First Nation on Manitoulin Island
- renovations to the Dokis First Nation's museum and cultural centre to convert part of the museum and cultural centre into classrooms that will be available to local and regional school boards
- installation of a parking lot and digital signage at the Four Directions Complex/Multi-Use Recreation Complex in Aundeck Omni Kaning First Nation to make the local community centre more accessible and inviting for elders, youth and visitors



2.7 KEEPING ONTARIANS INFORMED

Evidence-based decision making includes transparency in setting priorities. Ontario is committed to being Canada's most open and transparent government. In 2013, the government launched the Open Government initiative. It has made available more data and information to give the people of Ontario new and improved ways to engage in policy making. It has increased openness, transparency and accountability, and boosted innovation and economic productivity.

Through the IJPA, the government committed to make information about its long-term infrastructure investments available publicly. It is doing this in multiple ways.

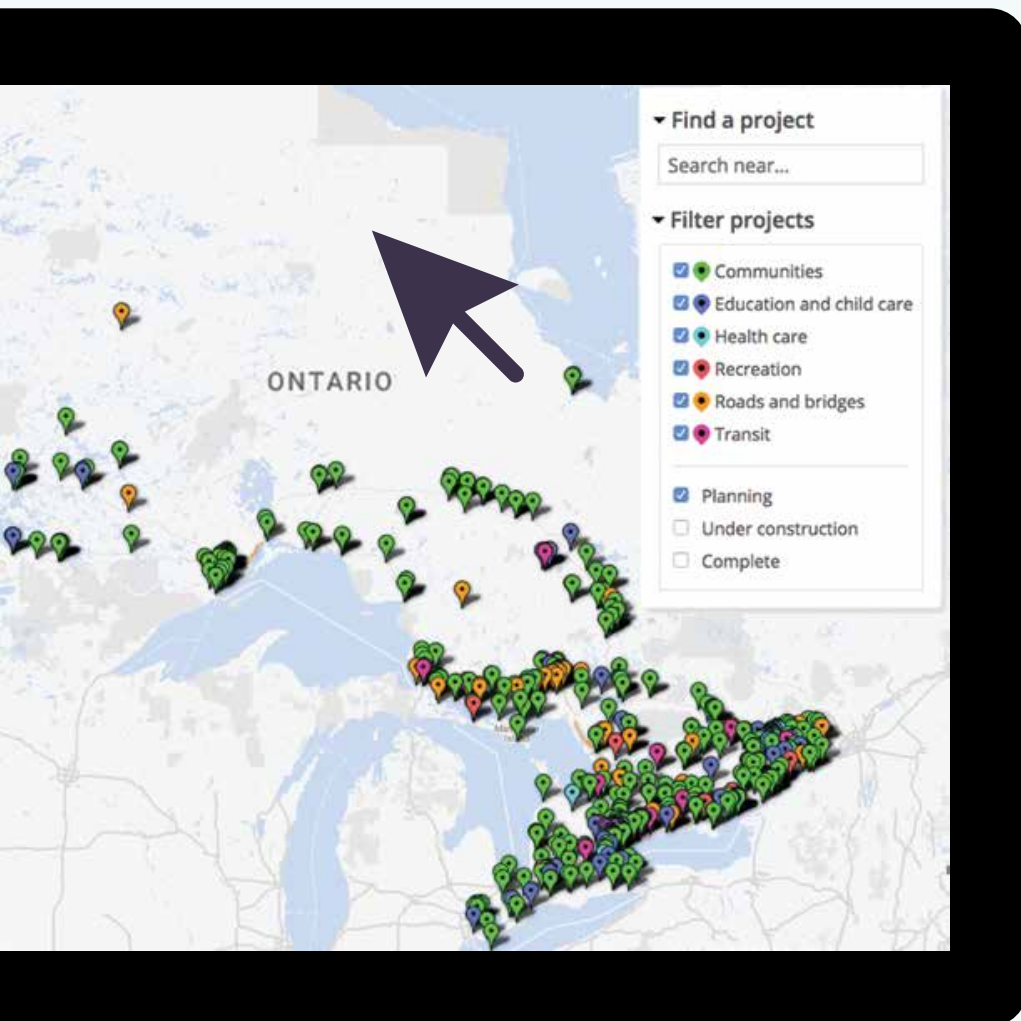
WHERE TO FIND INFORMATION ABOUT ONTARIO'S INFRASTRUCTURE INVESTMENTS

- Ontario.ca/BuildON has a map with over 3,500 key infrastructure projects throughout the province, and their status: planned, under construction or complete. Viewers can find information on infrastructure investments in their communities, neighbourhood by neighbourhood.
- [Infrastructure Ontario](#) posts detailed information on all Alternative Financing and Procurement projects and other large Infrastructure Ontario-delivered projects from across the province, by type, stage and sector.
- Through Ontario's [OpenData](#) website, the government is sharing government data sets online to increase transparency and accountability. Sharing data sets can also help encourage innovation and solve problems through new ideas and applications.
- For the first time, the government is releasing an overview of the condition, value and age of Ontario's infrastructure assets. More information can be found in the accompanying Technical Appendix.
- The [Community Hubs Resource Network](#) supports local community-hub planning and, in keeping with the Province's Open Government initiative, makes government data, such as demographics, Geographic Information System (GIS) mapping, service planning information and the surplus public properties inventory publicly available online.
- The Province posts policies or actions that affect the environment for public review and input on the [Environmental Registry](#). The Registry is an important part of ensuring that the public can participate in decisions being made on environmental issues. The Environmental Registry is the only one of its kind in Canada, and was created under Ontario's Environmental Bill of Rights, 1993.



BUILDING ONTARIO: OUR INFRASTRUCTURE PLAN

Ontario is making the largest infrastructure investment in schools, hospitals, public transit, roads and bridges in the province's history.



FIND OUT WHAT'S HAPPENING NEAR YOU

Use the map to browse key projects being built in your community. This is a sample of over 3,500 key projects happening in Ontario. Projects will be added to the map and updated on an ongoing basis.

Projects like these are part of about \$190 billion in planned investments, which are expected to support 125,000 jobs, on average, each year.

ontario.ca/BuildON
ontario.ca/ONrenforce





3

CHAPTER 3:

IMPROVING INFRASTRUCTURE DELIVERY

Ontario is a global leader in infrastructure financing and delivery. A cornerstone of good government is the strong, effective long-term management and stewardship of provincial assets. This includes responsible fiscal planning for infrastructure projects.

The Government of Ontario is committed to investing about \$190 billion over 13 years, starting in 2014–15, but this will not satisfy all of Ontario’s infrastructure needs. There is a gap between the number of investments that local, provincial and federal governments can make and the number of projects that are requested. This challenge needs to be tackled by all orders of government working together.

3.1 SAVING MONEY BY MANAGING DEMAND

In considering how best to pay for infrastructure investments, one thing the government can explore is how to manage demand for infrastructure in the first place. Demand management is one strategy among others that can help to meet Ontario’s infrastructure needs. Demand management strategies, such as user fees, will have an impact on demand, which will change the government’s future infrastructure needs. These strategies can also help offset the cost of infrastructure investments.

For this reason, infrastructure needs and infrastructure funding sources should be considered simultaneously, rather than independently.

A number of examples of demand management tools are explored in the following table:



COST SAVINGS FROM MANAGING DEMAND

According to a study by the Conference Board of Canada, there is a strong relationship between municipal water consumption and pricing. Municipalities, in Ontario and elsewhere, that use metered pricing see lower levels of water consumption on a per-capita basis than those that do not.¹¹ Another recent study by the EcoFiscal Commission showed that water consumption per capita in Ottawa decreased by about 15 per cent from 2011 to 2016 in response to the implementation of universal metering and higher rates.¹²

By managing demand for water per capita, infrastructure needs, particularly the need for more and larger water-treatment plants, decrease. Through a conservative calculation, the Conference Board's report estimates that Canada could reduce its municipal water infrastructure gap by \$4 billion by revisiting water pricing policies and approaching per-capita municipal water-usage rates seen in peer countries, such as the UK.

COST SAVINGS FROM SHIFTING DEMAND

The implementation of user pricing can also affect infrastructure needs by shifting, as opposed to reducing, demand. For example, electricity prices that vary by time of day, as they do in Ontario, can shift demand to off-peak periods.

¹¹ Conference Board of Canada. <http://www.conferenceboard.ca/e-library/abstract.aspx?did=4104>

¹² Canada's Ecofiscal Commission. <http://ecofiscal.ca/wp-content/uploads/2017/09/Ecofiscal-Commission-Report-Only-the-Pipes-Should-be-Hidden-FINAL-Sept-26-2017.pdf>



3.2 PAYING FOR INFRASTRUCTURE

After identifying cost savings through demand management tools, there may still be a gap between the funding available and the funding needed. In this case, the government will need to identify other funding sources to fill this gap.

Typically, all major infrastructure projects require both financing and funding.

Financing is the source of money to pay up front for the construction of an infrastructure project. Usually, this involves borrowing “tools,” such as government bonds, that are used to bridge the time gap between the building of infrastructure and when infrastructure funding becomes available.

Funding is the source of money that will be used to pay for building and maintaining infrastructure.

To illustrate the difference between funding and financing, using a household analogy, consider a typical home purchase. When purchasing a new home, a household will usually borrow money from

a bank through a mortgage to finance a portion of the home purchase. In this case, the mortgage is the source of financing. The mortgage is then repaid over time through income generated by the household. The household’s income is the source of funding.

There are a number of potential sources of funding, some of which are discussed in more detail below and some that are already in use in Ontario.

LOS ANGELES, CALIFORNIA – SALES TAX INCREASE

In 2016, Los Angeles County residents voted in favour of a sales tax increase of 0.5 per cent to provide dedicated funding to expand public transit. More than 71 per cent voted in favour. This measure will generate an estimated \$120 billion over four decades to operate buses and rail, maintain the system, subsidize fares and expand the rail network.

FINANCING TOOLS	FUNDING TOOLS
<ul style="list-style-type: none"> • Debt Financing (general borrowing) • Alternative Financing & Procurement (AFP or Public-Private Partnerships / P3s) • Direct Institutional / Private Investment (e.g., from Pension Funds) • Tax-Increment Financing • Social Finance (Social / Green bonds) • Infrastructure Banks • Infrastructure Ontario Loan Program 	<ul style="list-style-type: none"> • Taxes (income, property, sales, gas) • Special Taxes & Levies (e.g., congestion charges) • User Fees (e.g., transit fares, recreation activity fees, road tolls, licensing fees, facility rental rates) • Concession Arrangements • Asset Recycling • Joint Development • Land Value Capture

Funding Infrastructure: Unlocking the Value of Government Assets

Dedicated revenues can help to ensure a transparent source of infrastructure funding. In addition to the traditional method of funding public infrastructure through the tax base, the government's asset-optimization strategy is repurposing the value of certain non-core public assets, and dedicating net revenue gains to the Province's Trillium Trust to help support investments in transit, transportation and other priority infrastructure assets.

Net revenue gains from the sale of qualifying provincial assets are credited to the Trillium Trust, created under the Trillium Trust Act, 2014. Ontario has set a target of dedicating \$5.7 billion to the Trillium Trust and is on track to meet its target. This includes net revenue gains from broadening Hydro One ownership, and other sales of qualifying assets, such as the LCBO head office lands.

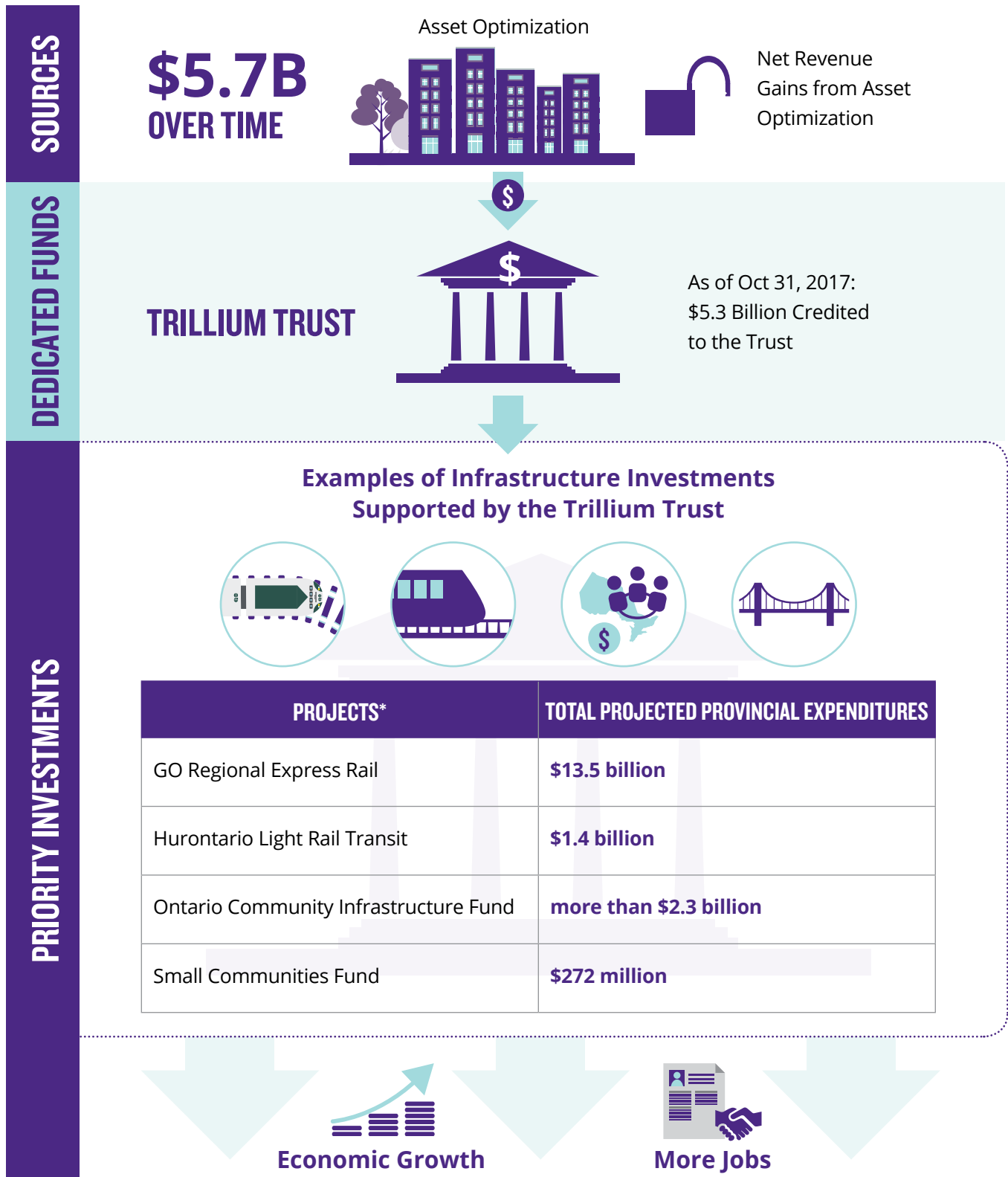
The government will be allocating up to \$400 million this year from the Trillium Trust to support investments in public transit, transportation and other priority infrastructure projects, based on planned expenditures in the 2017 Budget. This builds on last year's allocation of \$262 million to support key investments across the province, such as GO Regional Express Rail, Hurontario Light Rail Transit, the Ontario Community Infrastructure Fund and the Small Communities Fund.

INSTITUTIONAL OR PRIVATE INVESTMENT

Third parties, such as pension funds, are increasingly investing in infrastructure, recognizing a potential for stable financial returns. A recent Canadian example is the Caisse de dépôt et placement du Québec (CDPQ), a Québec pension fund, which plans to invest \$3 billion in a new Montreal public-transit rail network.



Figure 6: The Trillium Trust and Investments in Public Transit, Transportation, and Other Priority Infrastructure



* investments also supported by other funding sources as applicable (e.g., federal contributions, Greenhouse Gas Reduction Account, Provincial Green Bonds)

Funding Infrastructure: Land Value Capture

The Province is continuing to look for innovative methods to pay for infrastructure, beyond traditional taxes and user fees. One method is land value capture (LVC).

LVC is a method of funding infrastructure improvements by recovering all or some of the increase in property value generated by public infrastructure investment. This can include partially financing infrastructure by selling development rights near an infrastructure project, such as the “air rights” above a transit station.

Understanding the best practices for LVC implementation is key to putting conditions in place for LVC to succeed. It's important to keep in mind that, even when used in the most optimal situations, LVC generates only a maximum of 20 to 30 per cent of the funds necessary for new infrastructure.¹³

STOCKHOLM, SWEDEN – CONGESTION CHARGE

In 2006, Stockholm voted in favour of a tax to drive a car into the city. Unlike the London Congestion Charge, which is a flat daily rate, this fee varies depending on the time of day. With a relatively small fee of a few dollars to drive during rush hours, drivers changed their timing and the time it took to drive home during rush hour was cut by one-third. There were also fewer accidents and fewer GHG emissions and transit ridership increased. There are no toll booths, and drivers are sent bills directly each month.

¹³ Terrill, Marion. <https://grattan.edu.au/wp-content/uploads/2017/03/888-What-price-value-capture.pdf>



Funding Infrastructure: Other Tools

There are other tools for funding infrastructure. For example, Ontario provides support for municipal transit systems through a portion of the provincial gas tax. Two cents per litre of the gas tax is distributed to municipal transit systems, helping them improve and expand services, including, for example, increasing hours of service, expanding routes and upgrading transit infrastructure. Ontario will increase funding to municipal transit systems across the province through an enhancement to the existing gas-tax program, doubling the municipal share from two cents per litre to four cents by 2021. There will be no increase in the tax that people in Ontario pay on gasoline as a result of the enhancement to the program.

User fees are a common tool to raise funding for infrastructure investment and for influencing demand. Common examples of user fees are transit fares, recreation activity fees, road tolls and licensing fees. For example, municipal transit systems are supported by transit fares. Other jurisdictions use a range of user fees and revenue tools. One user-fee challenge to consider in infrastructure planning is that the public is often not willing to pay for things they have used for free for decades, unless there is an alternative in place.

Other tools include special taxes and levies, such as congestion charges.

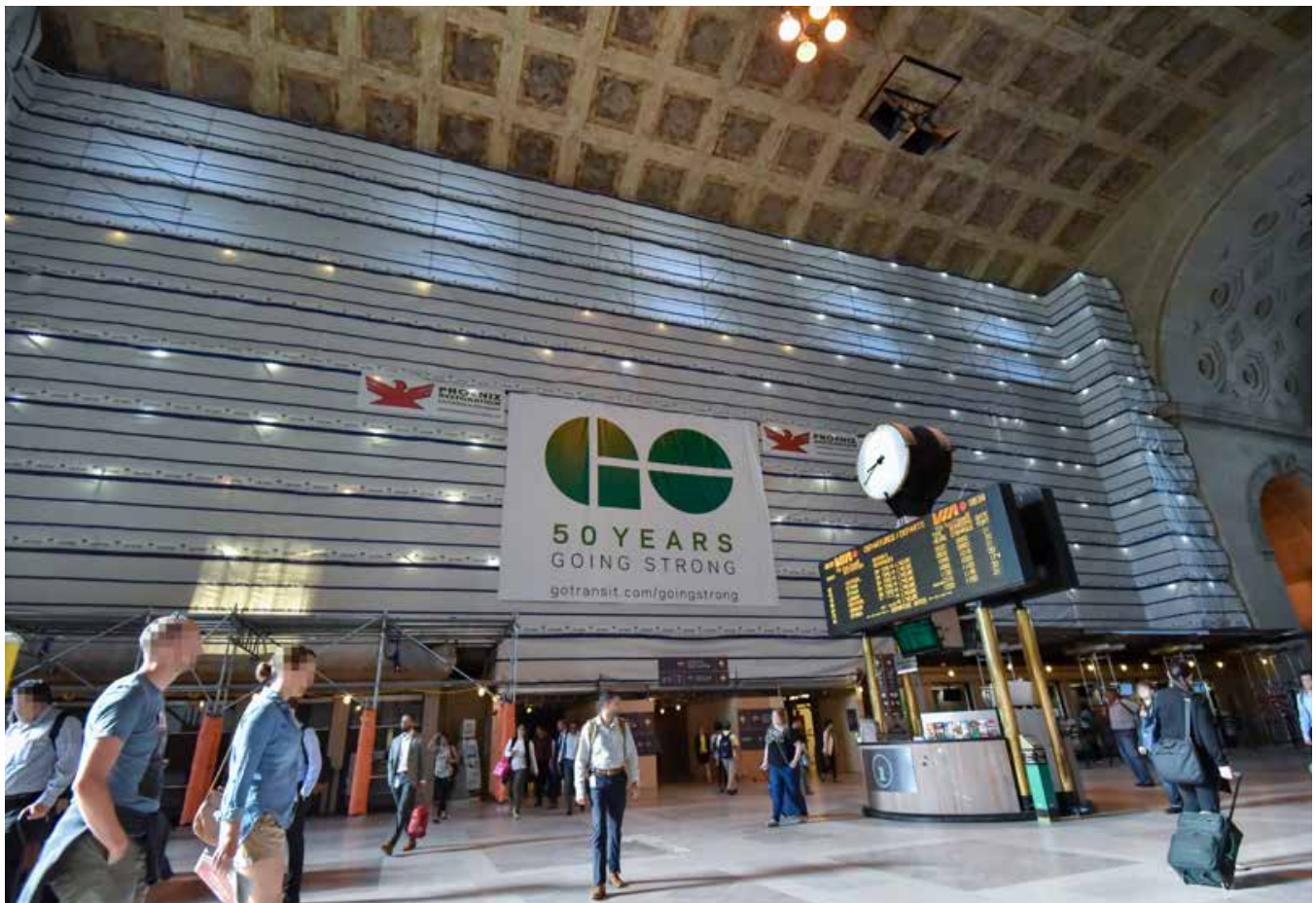


A JOINT DEVELOPMENT SUPPORTING TRANSIT

Ontario is partnering with Ivanhoé Cambridge and Hines, a global real-estate developer, on the construction of CIBC Square. This project will include a new bus terminal in Toronto that will give commuters and families from across the province easier, more seamless access to transit options.

This project will help transform downtown Toronto, with two new commercial buildings connected by a one-acre elevated park over the rail corridor. The new, world-class bus terminal will better connect commuters to GO Transit, the TTC, VIA Rail, UP Express and the proposed future high-speed rail connection to destinations in southern Ontario. The location of the new terminal provides better access to the Gardiner Expressway and Lakeshore Boulevard, making it easier for bus riders to get to their destinations.¹⁴

¹⁴ Government of Ontario. <https://news.ontario.ca/mto/en/2017/06/construction-begins-on-new-bus-terminal-at-union-station.html>





3.3 PROCURING INFRASTRUCTURE: TRADITIONAL PROCUREMENT AND PROJECT DELIVERY

Ontario has a robust infrastructure procurement system that delivers value for Ontarians. Infrastructure projects can be delivered in a number of ways, including directly by the government. In delivering infrastructure projects, the owners of assets, such as ministries or agencies, manage and deliver the projects themselves, through the traditional public-sector competitive procurement process: formally setting out the government's requirements in a design and inviting vendors to respond with how they would meet the design requirements and how much it would cost; then selecting the successful bidder, entering a contract, and paying on a regular basis as the work proceeds. When the government is delivering and managing a project itself, the Province assumes most of the risks throughout the construction of the asset. The Province also assumes responsibility for operating and maintaining the asset when it is complete.

This approach can work well in many circumstances, such as when a ministry has significant experience in delivering major infrastructure investments, and on smaller, less-complex infrastructure projects. However, in traditional procurement for large, complex infrastructure projects, the government assumes significant risk. This is because it has limited leverage to ensure that on-time and on-budget delivery and specifications are met. Also, bidders have limited opportunities to suggest cost-saving innovations by looking at the project over its whole life cycle.

The Province continues to use the traditional procurement approach for many of its infrastructure projects. However, for the government's very large and complex projects, it has developed another approach: Alternative Financing and Procurement (AFP).





3.4 PROCURING INFRASTRUCTURE: ALTERNATIVE FINANCING AND PROCUREMENT

A key infrastructure delivery tool is the Province's made-in-Ontario AFP approach.

The traditional model often requires companies to perform work for a stipulated sum. Contractors get paid as they go, and thus there may be less incentive for them to finish the job in a timely fashion. This can cause problems in jurisdictions that use the approach — not only in Ontario, but in countries around the world.

A major difference between the AFP delivery model and the traditional procurement model is that builders are required to finance the construction phase, and sometimes the maintenance phase, of projects with their own means of financing. The government provides no compensation until the

project has been independently verified to have reached substantial completion or a key milestone. Under the AFP model, a single entity is accountable for multiple aspects of the overall project. Being responsible for both design and construction encourages builders to create smart and innovative designs that reduce challenges in implementing the design during the construction phase. The AFP model also promotes an increased sense of project ownership on the part of the contractor.

All public infrastructure projects, including AFPs and traditional projects, have five key governing principles: transparency, accountability, value for money, public ownership and control and protection of the public interest. The Province will also ensure



that procurement is carried out in an open, non-discriminatory way, to respect Ontario's trade obligations.

Unlike the traditional infrastructure-procurement process, in which the Province assumes most of the risks associated with delivering a project, the AFP delivery model transfers some of the risk inherent to the project to the party best able to manage and mitigate that risk. An example of risks that are transferred to the private sector could include increased construction costs and/or schedule delays as the project develops. Ontario has been successfully implementing the AFP delivery model for over a decade.

AFP involves a competitive process to select a private-sector proponent, which is generally an integrated group of companies. The proponent designs and builds the asset, finances it, often maintains it and sometimes operates it. Combining more aspects —

such as design, maintenance and operations — into the bidding requirements gives proponents more opportunities to innovate and find savings. The Province, or public entities, always retain ownership of the asset.

The Province pays for performance when the proponent achieves certain milestones and meets pre-set quality and performance standards. The delay in compensation provides the necessary incentive for the proponent to complete the project on time, on budget and to specifications. The Province or a government body signs a contract with the selected vendor to undertake the project.

As part of developing an infrastructure project, the appropriate delivery model must be identified. Delivery-options analysis considers numerous factors, such as technical complexity; the potential to integrate design, construction and/or maintenance; and the potential to transfer risk to the private sector.



If it has been determined that there is potential for the project to be delivered as an AFP, the project goes through a quantitative value-for-money (VFM) analysis to help determine the preferred procurement model. VFM is a comparison between the risk-adjusted costs for the entirety of the project. If the risk-adjusted costs for the AFP approach are lower than the risk-adjusted costs for the traditional approach, there is positive value for money. Positive value for money is an important principle for determining whether to deliver projects using the AFP delivery model. As of March 2017, the 74 AFPs that have reached financial close are expected to produce a net benefit to government of over \$9.5 billion.

AFP HIGHLIGHTS

- More than 100 AFP projects have reached the procurement stage, are under construction, or have been completed.
- As of June 30, 2017, 60 AFP projects have reached substantial completion, with a total capital cost of \$19.5 billion; 21 AFP projects are in construction phase, with total capital costs of \$15.8 billion. More than \$12 billion worth of additional projects are in procurement or pre-planning stages.
- Of the 51 AFP projects completed by 2016, 96 per cent were delivered on budget, and 73 per cent were delivered within one month of schedule.
- The Durham Region Courthouse is an example of an AFP project that was built on time and on budget, and was the first courthouse project completed under the government's AFP program. At the peak of construction, there were more than 400 construction workers on site daily.

AFP: The Potential to Achieve More

The Province is continuing to look for ways to strengthen the successful AFP delivery model. The government has added new considerations to the infrastructure-procurement process, such as the evaluation of a proponent's knowledge of local circumstances, the specification of health and safety requirements and the employment of apprentices. Infrastructure Ontario has also recently launched a Vendor Performance Program to ensure high-performing vendors are selected for AFP projects. The program is currently being phased in. Other potential approaches being considered to increase the effectiveness of AFP are described below.

Improved AFP Evaluation and Analysis

To ensure that the AFP model continues to provide value, the government has developed an evaluation framework to track the success of this delivery model. This framework aims to assess the AFP delivery model's ability to (a) deliver projects on-budget, on-time and on-specification, (b) ensure proper risk transfer to the private sector was achieved at final completion, and (c) ensure timely procurement. The government will start by evaluating a selection of completed AFPs and traditionally delivered projects of a similar size to assess the performance of each model against these criteria. Ultimately, over time, this framework will provide a stronger evidence base for the AFP delivery model, which will help decision-makers choose the right delivery model for future projects.

Complementing the performance assessment, the government is also refining its delivery-options analysis process. An improved delivery-options analysis process will ensure the government has the evidence it needs to recommend to decision-makers which delivery model to use on each project. It will help ensure that the recommended delivery model



ONTARIO'S AFP MODEL IS RECOGNIZED GLOBALLY

Representatives from over 50 jurisdictions have come to Ontario to learn about the government's AFP model. Ontario's AFP projects have won dozens of awards from world-recognized organizations, such as the American Institute of Architects, the International Academy for Design & Health, the Canadian Council for Public-Private Partnerships and P3 Bulletin. Infrastructure Ontario won the P3 Agency of the Year for the Americas in 2016.

matches the characteristics of the major public infrastructure project and is the best for designing, building, operating and maintaining that particular project.

These assessments will support the government in addressing recommendations from the 2014 Auditor General's Report — including measuring risk transfer to the private sector and having a stronger evidence basis for the AFP delivery model.

Maintenance

Maintenance is a necessary cost that has to be incorporated into total project cost. It is important to ensure that Ontario's assets continue to operate for years to come, and to have a plan to fund proper maintenance of infrastructure.

The Province currently has two primary approaches to ensuring good maintenance:

- For most projects, the Province contracts with the private sector to undertake regular maintenance on an existing asset. Separate private-sector entities provide life-cycle maintenance, such as boiler refurbishment, when required.

- For some AFP projects, the same private-sector entity that constructs the asset also offers regular and life-cycle maintenance, so the Province can ensure that the maintenance of newly constructed infrastructure assets meets specific standards throughout the life of the asset.

Infrastructure Ontario helps asset owners, sponsoring ministries and private-sector companies with the transition of newly completed AFP projects into their 30-year operations and maintenance phase. Regarding the government's general real-estate portfolio — essentially the portfolio of government buildings, such as courts, correctional facilities and office buildings — Infrastructure Ontario provides contract management and administrative and advisory services. Asset owners (e.g., ministries, agencies) can also ask Infrastructure Ontario to provide these services on AFP projects.

The Province is studying different approaches for infrastructure maintenance, including how to better help asset owners meet proper maintenance standards.

Municipal AFPs

With the success of the AFP program regarding provincially owned infrastructure assets, municipalities have expressed interest in using the AFP model. The AFP delivery model could provide benefits, such as discipline and transparency, to municipalities' infrastructure-procurement processes and construction-contract-management practices. But there are considerations in adapting the AFP model for use by a municipality. They include:

- the scope, size and complexity of most municipal projects
- the municipality's access to capital



- legislative restrictions (e.g., restrictions on borrowing)
- challenges in adopting new procurement methods

Infrastructure Ontario has provided advice and counsel to a few municipalities on delivering AFP projects, particularly in the transit sector.

SUPPORTING MUNICIPAL INFRASTRUCTURE PROCUREMENT

Partnerschaft Deutschland (Partnership Germany) was established by Germany's federal government as an independent consulting company to support exclusively public-sector clients. Its mandate is to improve the implementation of public procurement projects, resulting in a more efficient and economic use of public resources. It offers comprehensive (project-related) consulting and management services for federal, state and municipal governments on all questions about modern administration and investment projects.

The Government of Ontario is committed to supporting municipalities to successfully deliver key infrastructure projects. For example, it is exploring how it can encourage and support municipalities in leveraging the AFP delivery model more frequently to achieve their infrastructure priorities, and what support and advice Infrastructure Ontario can potentially provide to municipalities.

Bundling

The AFP program has served the province well since being introduced. At the same time, the Province is continuing to look at innovative methods to address existing challenges and to allow for more private-sector involvement. For example, AFPs are more

appropriate for large projects, meaning smaller projects may not qualify for an AFP model.

Instead of considering small projects individually, bundling similar small projects by either sector or geographic region could help open opportunities for financing through the AFP model and attract more private investment. However, seeking a balanced approach will be key to ensuring that, while there may be an increase in scale and cost when bundling projects, smaller contractors can still participate.

Bundling is different from an Integrated Systems Approach, where different types of infrastructure assets are procured together and managed under a single AFP contract. Projects that may have the potential to be bundled include bridges, roads and other facilities. For example, a recent study conducted in the County of Wellington by the Residential and Civil Construction Alliance of Ontario (RCCAO) and Ontario Good Roads Association (OGRA), with MMM Group Limited, found that there was potential for municipalities to bundle bridge projects through an AFP model. The study recommended that the Province champion a demonstration of a bundled AFP project with a willing municipality to rehabilitate bridges.¹⁵ The government will be considering the feasibility of bundling through an AFP model, and consulting with its municipal and private-sector partners on the best way to do this.

¹⁵ Residential and Civil Construction Alliance of Ontario.
<https://www.ogra.org/files/Asset-Mgmt/County%20of%20Wellington%20Bridge%20Study%20-%20Final%20Report.pdf>



3.5 ENSURING INCLUSIVE GROWTH AND ACCESSIBILITY

Ontario envisions its economic growth as inclusive growth that will deliver real benefits to everyone, whether that is in employment, education or health. Ontario strives to ensure that all Ontarians have the opportunity to contribute to and benefit from the economy through meaningful participation. Women, Indigenous People, immigrants, people with disabilities and from marginalized neighbourhoods are often people who are not sharing in the dividends of economic growth, and they often become further marginalized by economic activities that make land and public resources scarcer.

INCLUSIVE GROWTH: AN ACCESSIBLE ONTARIO BY 2025

The goal of Ontario's Accessibility for Ontarians with Disabilities Act (AODA), 2005 is to achieve an accessible Ontario by 2025. The act supports the identification, removal and prevention of barriers for people with disabilities. Under the act, there are accessibility standards for customer service, information and communications, employment, transportation and the design of public spaces. The standards apply to all organizations with one or more employees in Ontario, including the Ontario government, the broader public sector and the not-for-profit and private sectors. Accessible transportation and public spaces are critical to ensuring that people with disabilities can fully and independently participate in their communities and society.

The government is taking steps to reform Ontario's labour legislation to support the province's most vulnerable workers by increasing the minimum hourly wage from \$11.60 in 2017 to \$15 in 2019. The change also emphasizes increased vacation entitlements and expanded personal-emergency leave.

It is important that all people have the skills and resources to participate in inclusive growth, and infrastructure is a key tool that can be used to achieve that goal. Ontario is also working with its Indigenous partners to support training and employment in these communities. For example, the government is providing more support for Aboriginal Institutes to help expand their capacity as a distinct and complementary pillar of Ontario's postsecondary education system.

The benefits of infrastructure investment do not stop at employment and economic activity. Infrastructure also supports inclusive growth and can improve Ontarians' quality of life by providing:

- accessible spaces, where all Ontarians can realize their potential, receive needed services, contribute to their communities and enjoy rewarding cultural, recreational and outdoor activities
- better places to learn, teach and carry out research
- more comfortable and seamless experiences for those receiving health and community services

The government will ensure these opportunities are available in all regions of the province, fostering an environment of inclusive growth, in which everyone will benefit from, and contribute to, Ontario's prosperity.



PROVINCIAL EMPLOYMENT STRATEGY FOR PEOPLE WITH DISABILITIES

The government has launched a whole-of-government strategy to remove barriers and provide supports to help Ontarians with disabilities participate more meaningfully in the labour market. The strategy, Access Talent: Ontario's Employment Strategy for People with Disabilities, was launched in June 2017, and is based on four key pillars:

- Start Early: Inspire and Support Youth and Students with Disabilities
- Engage: Support and Encourage Employers as Champions and Partners
- Integrate: Create Seamless, Person-centred Employment and Training Services
- Trail blaze: Establish the Ontario Government as a Leading Employer and Change Agent

The strategy calls on employers with 20 or more employees to hire at least one more person with a disability. It is also creating more inclusive pipelines to employers by helping to address myths and misperceptions about hiring people with disabilities through public education and outreach targeted at employers, service providers, educators, health care professionals and the general public. It includes a number of initiatives to improve the current delivery of training and employment programs for people with disabilities, including implementation of a new Supported Employment program in Employment Ontario for people who have complex barriers to employment as a result of a disability.

In September 2017, the government held its first Employers' Partnership Table, engaging 17 influential leaders from small, medium and large businesses from a range of sectors, along with executives from business/industry associations and postsecondary education. Employer partners include Deloitte Canada, Loblaw Companies, Ltd., CIBC, Sodexo Canada and CBC-Radio Canada. The new table will help advise the government on strategy implementation, including how to shift the business culture across the province and champion employment for people with disabilities.

Also in September, the Discover Ability Network was launched as a new program and online portal connecting persons with disabilities seeking employment directly with Ontario businesses looking to meet their talent requirements. Funded by the Government of Ontario and powered by Magnet, a data-rich, job-matching technology platform, the Discover Ability Network enables employers to connect and recruit talent. It also provides employers with a series of resources to assist with their recruitment and accommodation initiatives and to facilitate sharing successes, learnings and best practices.

As part of the strategy, the government committed to lead by example. The Ontario Public Service Multi-Year Accessibility Plan 2017–2021 includes various strategies to increase the employment of persons with disabilities in all organizational levels.



MORE EDUCATIONAL OPPORTUNITIES FOR INDIGENOUS STUDENTS

Ontario is working with Aboriginal Institutes to give more Indigenous students access to culturally appropriate postsecondary education and training opportunities across the province.

There are nine Aboriginal Institutes in Ontario, located across the province. Aboriginal Institutes currently offer postsecondary education and training programs to more than 1,000 students annually.

Over the next three years, Ontario will invest \$56 million in Aboriginal Institutes to help them expand their capacity as a distinct and complementary pillar of Ontario's postsecondary education system. Aboriginal Institutes partner with colleges and universities to offer degree programs, apprenticeship programs, certificate

programs and diplomas in culturally appropriate and safe learning environments.

Many Indigenous students face unique financial and other barriers to postsecondary education and training. Ontario is working with its Indigenous partners to implement an Indigenous Education Strategy to increase Indigenous Peoples' access to, and participation and success in, postsecondary education and training.

Improving outcomes for Indigenous learners in postsecondary education and training is one of the many steps on Ontario's journey of reconciliation with Indigenous Peoples. As part of The Journey Together: Ontario's Commitment to Reconciliation with Indigenous Peoples, this initiative reflects the government's commitment to work with Indigenous partners, creating a better future for everyone in the province.



3.6 SUPPORTING COMMUNITY BENEFITS

The government wants to ensure that communities benefit from new infrastructure projects during development. The Government of Ontario is the first Canadian jurisdiction to pass legislation (IJPA) to enable consideration of community benefits in infrastructure planning and investment.¹⁶

Community benefits are defined in the IJPA as the “supplementary social and economic benefits” arising from an infrastructure project, such as local job creation and training opportunities, improvement of public space or other benefits the community identifies. This concept can help advance a range of goals, including reducing poverty and developing the local economy with input from under-represented groups.

Three kinds of initiatives can benefit communities:

- Workforce Development Initiatives provide employment and training opportunities (including apprenticeships) to members of traditionally disadvantaged communities, under-represented workers and local residents. This work complements the government’s broader workforce development initiatives.
- Social Procurement Initiatives include the purchase of goods and services from local businesses or social enterprises (organizations that use business processes to achieve social or environmental impacts).
- Supplementary Benefit Initiatives make a neighbourhood a better place to live, work and play — these are benefits that a community affected by a major infrastructure project asks for. It could be the creation of more physical public assets (e.g., child care facilities, a park) and/or getting more or better use from existing

public assets (e.g., design features to reduce noise pollution or traffic congestion during and after construction).

Community benefits are one way for the government to pursue multiple policy goals, including poverty reduction, employment and training, especially for under-represented groups, and support of small business. Ontario is a leader across Canada in successfully implementing community benefits on many types of projects through a variety of initiatives.

In the 2017 Budget, the Government of Ontario committed to consulting on the creation of a Community Benefits Framework. This consultation will continue to be guided by the principle that public-sector infrastructure procurement can create lasting community benefits that go far beyond the completion of a new building or asset. The Province is particularly interested in laying strong, evidence-based groundwork to decide on the best approach to achieve community benefits in Ontario. The identification and implementation of several community-benefits pilot projects will be the first step.

The experiences of Ontario and other jurisdictions have demonstrated that there are many different ways to incorporate community benefits into infrastructure projects. Specific design features can be incorporated into infrastructure-procurement processes for the private sector to deliver as part of the contract. Broader goals or desired outcomes can be included in a procurement, so that the proponents can propose an innovative solution or approach to

¹⁶ Yalnizyan, Armine. <http://www.ifsd.ca/web/default/files/Presentations/Reports/17011%20-%20Community%20Benefits%20Agreements%20-%202017%20July%202017.pdf>





achieve that desired outcome. Community benefits can be negotiated after a contract is signed, as part of the detailed design and construction preparation work. The role of the community, asset owner and private-sector partner can also vary. It will be important to select the right combination of pilot projects to ensure that Ontario can test a number of different ways to leverage infrastructure investments to achieve community benefits.

To that end, Ontario will continue to work with stakeholders, including the construction sector, social services, and community groups, to inform the selection of pilot projects by early 2018. Ontario will select a number of Community Benefits Pilot Projects that collectively cover a range of options across five important considerations:

- Pilot projects should include the full range of community-benefits initiatives.
- Pilot projects should be early enough in the development stage to allow for the option of including specific community-benefits requirements in requests for proposals (RFPs).
- Both AFP and traditional-delivery-model projects should be part of the pilot phase.
- Pilot projects should be restricted to provincially owned assets and be delivered by ministries that have pre-established relations with a target community.
- Pilot projects should be in different regions of the province and in a mix of urban and rural locations.

Over the course of 2018, the government will develop these pilot projects so that lessons learned can be documented and the right approach for Ontario identified. There will continue to be ongoing dialogue and discussions with communities and the

ONTARIO IS SUPPORTING YOUTH EMPLOYMENT

The government is committed to supporting youth to find meaningful employment and gain job-ready skills and experience. Youth programming is a core component of the government's Highly Skilled Workforce Strategy. To support the strategy, in April 2016, the government announced nearly \$190 million over three years that will go to "Career Kick-Start," a strategy that will help young people access hands-on learning and job-readiness resources. These new investments are in addition to continued funding of core programs that help young people find jobs and get career ready.

construction sector throughout the development and implementation of these pilot projects.

As the Community Benefits Pilot Projects progress, the government will begin work on the Community Benefits Framework by:

- gathering lessons learned from the variety of pilot projects, including the Metrolinx Community Benefit program for the Eglinton Crosstown LRT
- looking at what other jurisdictions are doing, and developing made-in-Ontario approaches
- finding innovative ways to achieve broader benefits to local communities
- monitoring infrastructure projects with a view to their achieving community benefits

Following the launch and initial implementation of the pilot projects, the Community Benefits Framework will be developed in partnership with stakeholders,



including the construction sector, social services, and community groups, in 2019. The Framework will:

- set the principles for promoting community benefits on all major public infrastructure projects
- establish roles and responsibilities of sponsoring ministries, the private sector and the community
- provide guidance to all participants on how to identify the affected community and to achieve community benefits
- encourage other orders of government, especially municipal and regional, to promote community benefits on their infrastructure investments
- set reporting requirements

The government will ensure that all major public infrastructure projects comply with the Community Benefits Framework by 2020.

APPRENTICESHIP MODERNIZATION

As part of the Highly Skilled Workforce Strategy, Ontario is modernizing the apprenticeship system. This work includes as a priority increasing participation and completion rates for under-represented groups, including Indigenous people, while creating clearer pathways for all learners.

COMMUNITY BENEFITS IN TRANSIT PROJECTS

“Infrastructure projects such as the Eglinton Crosstown LRT can create benefits for communities that go beyond simply building the infrastructure needed.”

–Premier Kathleen Wynne, 2016

On November 8, 2016, Metrolinx, the Government of Ontario and Infrastructure Ontario signed an Apprenticeship Declaration on the Eglinton Crosstown LRT project with Crosslinx, the Toronto Community Benefits Network and the United Way (City of Toronto and York region). The declaration sets a goal of employing apprentices or journeypersons from historically disadvantaged communities to perform 10 per cent of all trade or craft working hours required to construct the project.

The development and inclusion of an Apprenticeship Plan and the signing of an Apprenticeship Declaration have been included as requirements in the request for proposal (RFP) for the Finch LRT. A financial penalty has also been introduced if the successful proponent fails to sign the Apprenticeship Declaration. The Declaration will likely set the same goal currently implemented on the Eglinton Crosstown LRT.

Apprenticeship opportunities created through projects such as the Eglinton Crosstown and Finch LRT will provide opportunities for skills development and initial experience for new entrants. The full scope of experience required to become a journeyperson will likely be acquired from working on multiple projects.

3.7 MODERNIZING APPRENTICESHIPS AND MONITORING LABOUR FORCE NEEDS

Ontario is working to modernize the province's apprenticeship system. Ontario's large-scale infrastructure investments provide an opportunity to support implementation of this strategy.

The Apprenticeship Modernization Strategy will aim to increase participation and completion rates for under-represented groups, while creating clearer pathways for all learners. This will help to ensure that Ontario has sufficient numbers of workers in the skilled trades to meet long-term demand in each sector and in related construction work. This includes a better understanding of what the construction sector of the future will look like, to ensure that apprentices learn about the technologies and approaches they will need to master as part of their training. Ontario's new apprenticeship strategy will address these vital issues in partnership with labour, construction-sector employers and other stakeholders, including under-represented groups.

The Apprenticeship Modernization Strategy will propose concrete steps that the Province can take with its labour and construction partners to ensure apprentices have the skills to participate in Ontario's infrastructure labour market over the next 10 years and further into the future. As part of the strategy, the Province will be supporting initiatives to ensure the infrastructure sector is reflective of Ontario, focusing on under-represented groups in the apprenticeship trades, such as Indigenous Peoples, newcomers, women, visible minorities and people with disabilities.

Ontario is also helping employers in the booming construction and agriculture sectors to find and retain the workers they need, through a new In-Demand

Skills Stream of the Ontario Immigrant Nominee Program (OINP). This enhancement to the OINP is a pilot project based on labour-market needs and input from trade unions, employers and other key stakeholders. The Province will closely monitor the pilot and make adjustments as necessary to ensure it meets the needs of employers.

The Province continues to modernize the OINP application process with paperless online systems, which speed up the application process and improve customer service. All applications for the In-Demand Skills Stream must be submitted online.

Attracting newcomers to help employers meet their labour-market needs is part of the Province's plan to create jobs, grow the economy and help people in their everyday lives.

Ontario is committed to ensuring that its infrastructure investments support apprentices in building their skills and achieving their certifications. To complement the broader Apprenticeship Modernization Strategy, the government will consider an approach to ensure that implementation plans for major public infrastructure projects include apprenticeship positions, as is now the case for the Eglinton Crosstown LRT.

Infrastructure Ontario retained KPMG earlier this year to assess the capacity of the labour market to meet the pipeline of infrastructure projects in Ontario, Canada and the United States. Ontario will undertake future analysis, such as on a regional or sectoral basis, as needed, to understand the capacity of the labour market in Ontario, including for under-represented groups.



New housing construction has risen steadily over the last five years, adding more than 26,000 jobs since 2011. As Ontario continues to invest in major regional infrastructure, transportation and energy projects, low rates of unemployment in construction sectors are anticipated. Over the next decade, 86,000 are expected to retire, while 80,600 new entrants are expected to replace those leaving the workforce.¹⁷ In that context, the government will track demand for the skilled trades and work to ensure that Ontario has a steady supply of apprentices ready to contribute at construction sites.



¹⁷ Build Force Canada. <https://www.constructionforecasts.ca/sites/forecast/files/highlights/2017/2017-ON-Constr-Maint-Looking-Forward.pdf>

A large white number 4 is positioned on the right side of the page, set against a purple background. The background of the entire page is a photograph of a river with a bridge in the distance. The bridge is a steel truss bridge. The river is calm, and the sky is overcast. The number 4 is the largest element on the page.

4

CHAPTER 4:

THE STATE OF ONTARIO'S INFRASTRUCTURE

It is important that infrastructure investments are based on strong evidence, because this ensures that Ontarians get the maximum benefit out of their infrastructure dollars. The IJPA requires the government by 2019 to describe the state of its assets, what it needs over the next 10 years and its strategy to meet those needs. The Government of Ontario is well on the way to meeting these requirements.

4.1 ASSESSING WHAT ONTARIO HAS

In line with the IJPA's requirements, the government has developed a provincial Asset Inventory of Ontario's owned and consolidated¹⁸ infrastructure assets. Developing a detailed asset inventory is a necessary and important step toward improving asset management across the government and implementing evidence-based infrastructure planning more generally. The inventory includes the age, value and condition of Ontario's assets. It also responds to the 2015 Ontario Auditor General's Report,¹⁹ which highlighted the need for the government to have a reliable estimate of the condition of provincial assets to use in making funding-priority decisions.

The Province owns or consolidates nearly 40 per cent of public infrastructure stock in Ontario — with a replacement value of \$209 billion.²⁰ The Technical Appendix includes a detailed Asset Inventory, organized by sector, including: health, education, tourism and culture, government's general real-estate, transportation, transit, postsecondary education and natural resources and forestry. A summary of these sector profiles is provided in the subsequent figure.

The sector profiles summarize the replacement value and average age and condition of assets. It should be noted that a moderate to high renewal need does not deem an asset to be unsafe or unfit to meet its functional needs. Also, while there are facility, bridge or pavement condition indices for most sectors, these indices are not necessarily comparable across sectors due to methodological differences.

The development of the asset inventory is a significant achievement, due to the size and scope of Ontario's infrastructure portfolio. Ontario is a leader in this field.

THE REPLACEMENT VALUE OF ONTARIO'S ASSETS

The replacement value is the estimated cost of rebuilding the Province's owned or consolidated infrastructure assets, which include hospitals, schools, transit, colleges, tourism, culture and sport facilities, and the government's general real-estate portfolio.²¹

¹⁸ Consolidated assets are those that are owned by consolidated entities, such as school boards, hospital corporations and agencies of the Province.

¹⁹ Office of the Auditor General of Ontario. <http://www.auditor.on.ca/en/content/annualreports/arreports/en15/3.07en15.pdf>

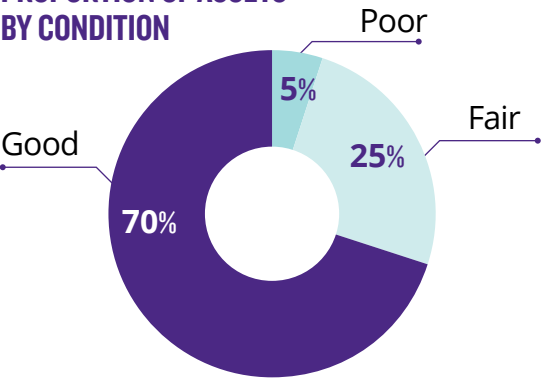
²⁰ Analysis conducted by the Ministry of Infrastructure based on data from Statistics Canada and capital ministries.

²¹ Transfer Payment Partner (TPPs) assets, including municipal assets and universities, are not consolidated onto the financial statements of the Province and are not included in the \$209 billion. More detailed information on the current replacement value can be found in the Technical Appendix.

Figure 7: The State of Ontario's Infrastructure

TRANSPORTATION – PAVEMENT

PROPORTION OF ASSETS
BY CONDITION



AVERAGE AGE
(YEARS)

11

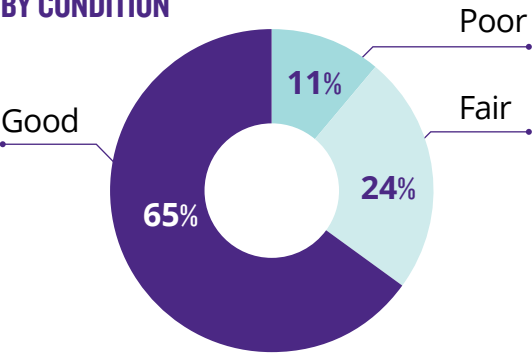
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$50.6



TRANSPORTATION – STRUCTURAL CULVERTS

PROPORTION OF ASSETS
BY CONDITION



AVERAGE AGE
(YEARS)

In Progress

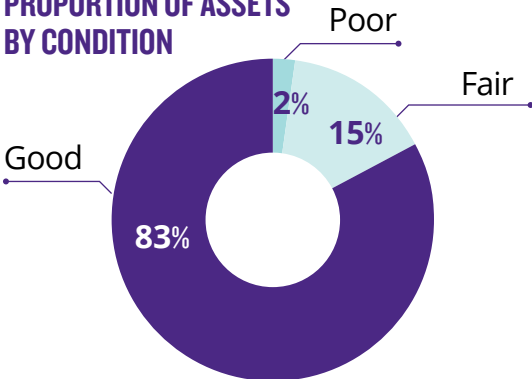
CURRENT REPLACEMENT
VALUE (BILLIONS)

In Progress



TRANSPORTATION – BRIDGES

PROPORTION OF ASSETS
BY CONDITION



AVERAGE AGE
(YEARS)

In Progress

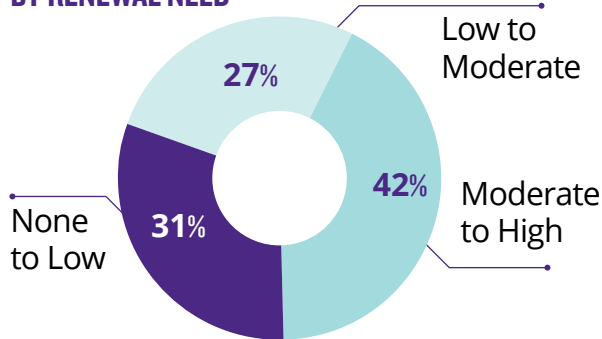
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$21.6



HEALTH

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

47

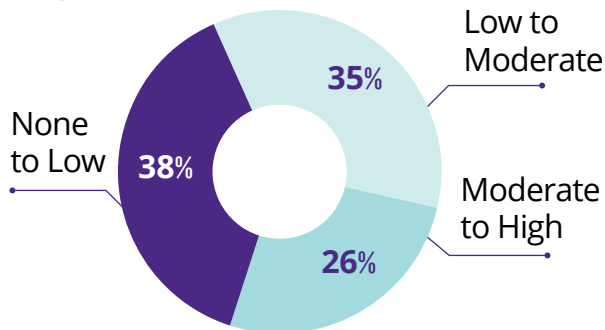
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$23.9



ELEMENTARY AND SECONDARY EDUCATION

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

41+

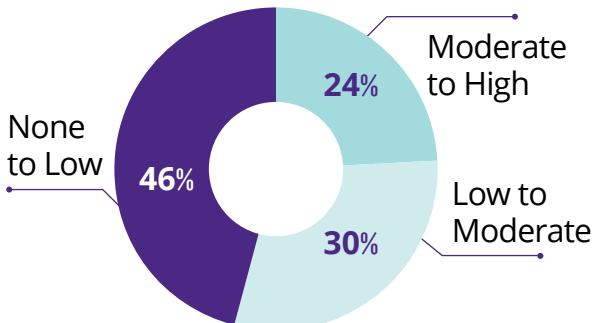
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$53.6



GOVERNMENT OFFICES

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

50

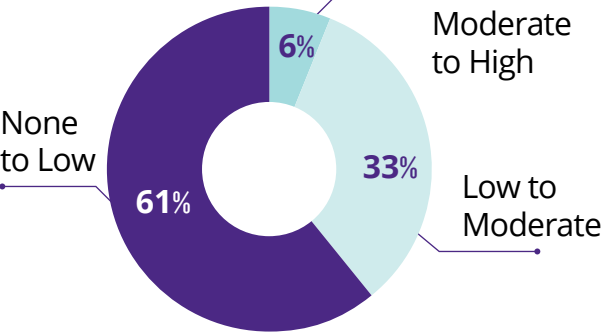
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$2.6



JUSTICE

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

47

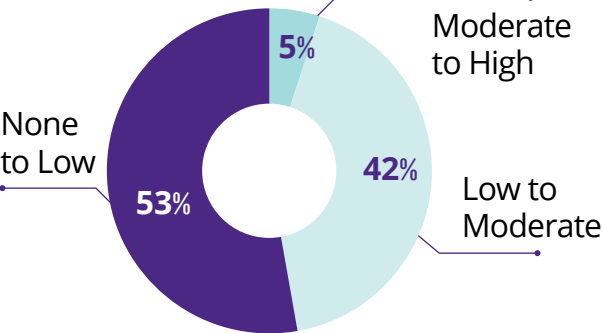
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$2.4



OTHER GOVERNMENT OWNED PROPERTY

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

50

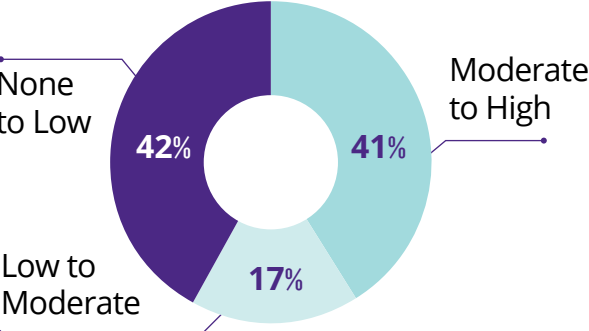
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$2.5



NATURAL RESOURCES AND FORESTRY

PROPORTION OF ASSETS
BY RENEWAL NEED*



AVERAGE AGE
(YEARS)

26^

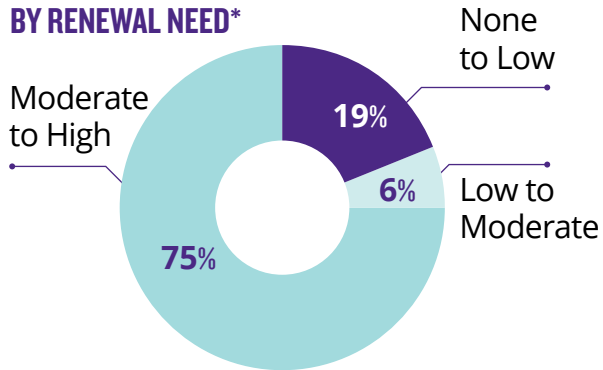
CURRENT REPLACEMENT
VALUE (BILLIONS)

\$1.7



CULTURE AND TOURISM

PROPORTION OF ASSETS BY RENEWAL NEED*



AVERAGE AGE (YEARS)

55

CURRENT REPLACEMENT VALUE (BILLIONS)

\$1.6



Note 1: The sum of the values in the infographic above do not equal the \$209 Billion of provincially-owned or consolidated infrastructure stock value because they exclude certain assets such as those not owned and consolidated by the Province.

Note 2: The summary above includes data collected and/or reported by sectors between 2011 and 2017. For more detailed information, please refer to the Asset Inventory in the Technical Appendix.

*Average condition (measured by the Facility Condition Index (FCI)) is calculated by taking the sum of three year repair needs and dividing it by the sum of Current Replacement Value (CRV).

+ Average age weighted by square footage or size of building.

^ Age weighted by CRV.

4.2 KNOWING WHAT ONTARIO NEEDS

The government needs strong evidence to ensure the right infrastructure is built in the right place at the right time in communities across Ontario. In recognition of this, the government uses and is continuing to develop a variety of tools to support evidence-based decision making for Ontario's infrastructure planning. These tools and analyses will ensure that the Province meets the requirements for evidence-based decision making by May 2019, as required by the IJPA.

The Stable State model is one of these tools. It estimates how much investment the government needs to make to keep the current stock of infrastructure constant on a per-capita basis, using an appropriate mix of rehabilitation, replacement and expansion for demographic growth.

This model provides a much more robust estimate of the infrastructure renewal backlog than the

government has ever had before, and is part of the government's efforts to continually improve evidence-based decision making. Using the Stable State model, it can estimate both its current infrastructure renewal needs, as well as its future (20 years) renewal needs, according to different expenditure scenarios. For example, according to the model, as a result of the Province's 13-year capital plan that started in 2014–15, the provincial infrastructure renewal backlog will decline to less than four per cent of the replacement value of all provincial infrastructure in ten years, from about eight per cent today.

This model contributes to the government's understanding of long-term infrastructure needs, as well as to its understanding of the future fiscal implications of the investment decisions that it is making today. More detailed information on the Stable State model can be found in the Technical Appendix.



4.3 DEVELOPING A STRATEGY TO MEET ONTARIO'S NEEDS

The government has made significant strides in asset data collection and analysis. Its next steps will be to expand the data collection and analysis related to infrastructure capacity, demand and utilization, and to strengthen Ontario's infrastructure-planning and priority-setting process.

The government will be undertaking research to better understand the capacity of the current infrastructure that is in place. It will also be working to get a better understanding of the current and projected demand for services that the infrastructure delivers. This will help determine current and future utilization levels.

Understanding capacity, demand and utilization will help the government develop a strategy to meet Ontario's infrastructure needs, based on the gap between capacity and demand. The strategy to close that gap could involve, among other actions, investing in new capacity, getting more out of existing capacity by using it more efficiently, or managing demand. Implementing this strategy could include actions such as improving and standardizing business cases and implementing asset management standards. The government will be working with all ministries across government and with municipalities to develop and implement this strategy. More information on developing the strategy is in the Technical Appendix.





5

CHAPTER 5:

DELIVERING RESULTS

Better planning means better services for Ontarians. In every sector, the government is improving planning by using data and better information to make decisions based on evidence. It will make the most of its existing infrastructure, and ensure it has new infrastructure where needed to support a high quality of service for Ontarians. Across the province, the government is investing in infrastructure to transform the way that it delivers public services and ensures that it is prepared for the future. The government is also working to better co-ordinate its planning with land-use planning to connect people to the services they need in their communities.

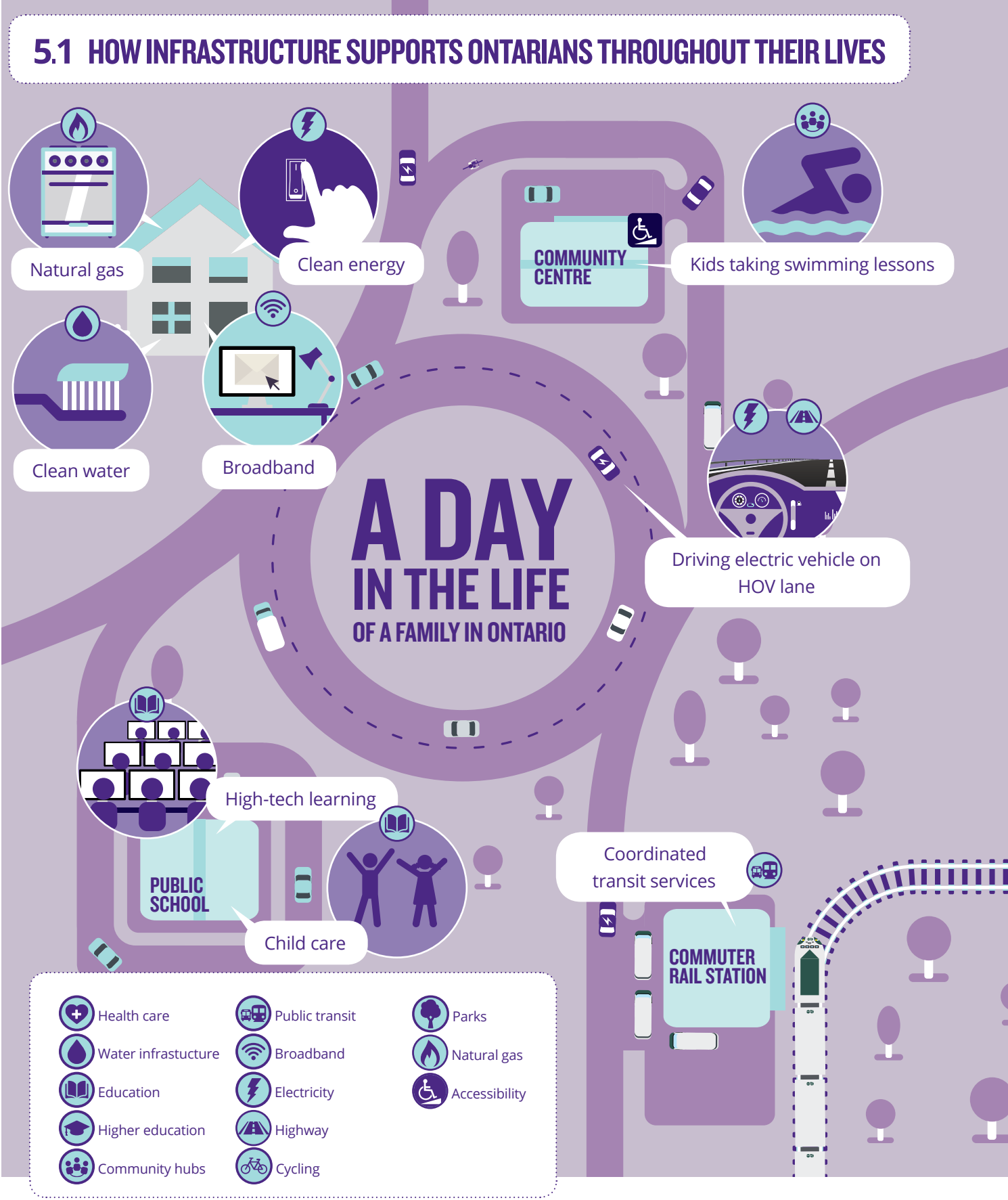
Every day, people across the province depend on publicly funded infrastructure to go about their lives. Ontario's current commitment to invest about \$190 billion in vital public infrastructure over 13 years, starting in 2014–15, is improving the lives of Ontarians of all ages — whether they're taking transit to work, attending college or university or enjoying Ontario's rich cultural heritage.

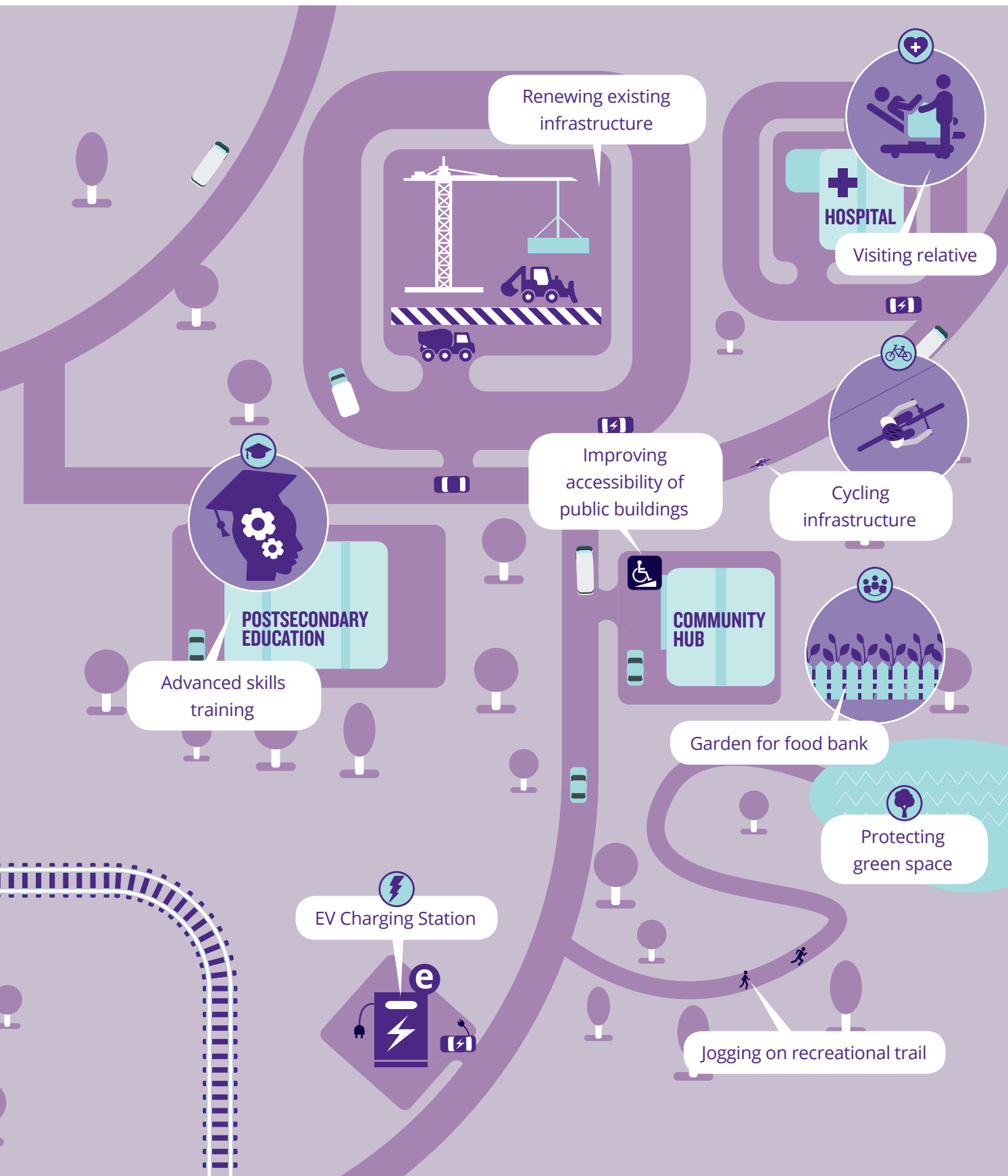
Infrastructure touches Ontarians' lives every day. It's so seamless that it can be easy to overlook the services that Ontarians depend on, from clean water and energy to high-speed Internet, to roads and public transit. Ontario families benefit from good schools, high-quality health care and community services. Infrastructure investments improve the quality of life every day across the province.

Ontario's current commitment to invest about \$190 billion in vital public infrastructure over 13 years, starting in 2014–15, is improving the lives of Ontarians of all ages.



Figure 8: A day in the life of a family in Ontario





5.2 MANAGING CONGESTION AND OFFERING CHOICE IN TRANSPORTATION

Transportation infrastructure is a cornerstone of Ontario's prosperity. Much of what Ontarians value — jobs, leisure time, access to health care and education and trade with other provinces, the United States and other nations — depends on the provincial transportation system. The Province strives to be a world leader in moving people and goods safely, efficiently and sustainably to support a globally competitive economy and a high quality of life — and enabling people and businesses to thrive, now and in the future.

Challenges in Ontario's Transportation Sector

Across the province, the transportation sector is currently the largest source of greenhouse gas (GHG) emissions. The Government of Ontario is working hard to reduce GHG emissions caused by transportation.

Population trends, such as urbanization, will impact transportation systems heavily. Over the next 20 years, the population in Ontario's major urban centres is expected to increase by 25 per cent. The aging population will require creative, accessible and innovative approaches to ensure that all users can move about the province.

Investments in disruptive technologies, such as automated vehicles, will change the transportation system dramatically, and the government needs to be prepared.

In Southern Ontario, commuters face tremendous congestion problems. Today, the Greater Toronto and Hamilton Area (GTHA) has one of the longest commute times in North America. The Toronto Board of Trade reports that, collectively, the economic cost of this congestion to the region is valued at over



\$6 billion per year, and is projected to grow to \$15 billion by 2031.²²

Northern Ontario, with its long distances between communities and urban centres, requires a multimodal transportation system. The North is also especially vulnerable to the impacts of climate change, particularly in communities that rely on seasonal winter roads. The region's geography, harsh

winter weather conditions and changing weather patterns complicate construction efforts and general planning for the various modes of transportation.

²² Toronto Board of Trade. https://www.bot.com/portals/0/unsecure/advocacy/DiscussionPaper_AGreenLight_March18_2013.pdf

ONTARIO IS SUPPORTING TRANSPORTATION IN THE RING OF FIRE

The Province is taking an important next step toward developing the Ring of Fire, an area in Northern Ontario with significant chromite resources. Ontario is working with Webequie, Marten Falls and Nibinamik First Nations to plan and construct a year-round access road into the proposed mining-development site being pursued by Noront Resources Ltd. As part of this project, the Province is also working with First Nations to build all-season access roads to their communities.

Ontario will support First Nations to plan and construct an east-west road connecting the Webequie and Nibinamik communities to the provincial highway network north of Pickle Lake. This project would provide all-season access to both First Nations communities, as well as into the Ring of Fire development.

The Province is also supporting Marten Falls First Nation to plan and construct an access road connecting the community to the existing provincial highway network at Aroland/Nakina.

Communities are working to begin environmental assessments of these projects by January 2018, and plan to begin construction in 2019, pending all necessary approvals.

As a next phase, Ontario will continue to support Marten Falls to undertake further technical and environmental studies that could inform planning and development of a north-south access road tied to the business case for, and development of, chromite mining in the Ring of Fire.

Building these roads is a critical step in realizing the economic benefits of one of the largest mineral-development opportunities in Ontario in almost a century. Funding for these roads is part of the government's commitment to invest \$1 billion in Ring of Fire infrastructure to create jobs, provide long-term benefits and improve the quality of life for people in the region.

Ontario is working to support these First Nations as they address all regulatory requirements, so that this unique environment is protected.

The Province welcomes this merging of cultural considerations with regulatory requirements and will ensure First Nations and their perspectives, including traditional knowledge, are carefully considered in decision making.

Investing in the development of the Ring of Fire, while ensuring that First Nations participate in and benefit from this development, is part of Ontario's plan to create jobs, grow the economy and help people in their everyday lives.



The Draft Northern Ontario Multimodal Transportation Strategy was released that outlines the needs and requirements for transportation in Northern Ontario,²³ highlighting services provided by the Ontario Northland Transportation Commission (ONTC). The ONTC, as a provincial agency, is an important public provider of intercommunity bus services and rail services in Northern Ontario with linkages to other areas of the province. The final transportation strategy is expected by early 2018.

How Ontario Is Building Better Transportation Infrastructure

The Province is taking important actions to address these challenges by:

- investing heavily in transportation infrastructure, including through the Moving Ontario Forward plan to support public transit, transportation and other priority infrastructures
- investing in strategic infrastructure to make the transportation system more resilient, support highway expansion and integrate the use of High Occupancy Vehicles (HOV) and High Occupancy Toll (HOT) lanes
- pursuing transit-supportive expansion on GTHA highways, with the ultimate goal of building a network of HOV and HOT lanes across the region, when and where it makes sense to do so
- supporting and investing in less-carbon-intense travel options — including supporting electric vehicles and low-carbon trucks and buses through the Greenhouse Gas Reduction Account
- supporting commuter cycling infrastructure and public-transit infrastructure
- continuing to deliver priority regional rapid-transit initiatives, including a plan to provide faster and more frequent service on the GO network through the GO Regional Express Rail (RER)

plan, with electrification on core segments of the network, including the Union-Pearson Express (GO RER is one of the largest transit infrastructure investments in North America)

- using technology, such as connected/automated vehicles (CV/AV), intelligent transportation systems and real-time traveller information (e.g., 511 services), to improve safety, manage congestion, enhance the traveller experience, support improved accessibility and mobility for people and goods and minimize the environmental impacts of transportation. Support for automated vehicles will come from Ontario's Greenhouse Gas Reduction Account
- reducing GHGs in transportation fuels by encouraging cleaner fuel technologies
- continuing to support the implementation of municipal rapid-transit systems
- using lower GHG-intensive building materials and construction techniques

HIGH-SPEED RAIL IN SOUTHWESTERN ONTARIO

Ontario will advance the Environmental Assessment and preliminary design work for High-Speed Rail, a transformative project in southwestern Ontario that would reduce travel times, give people more transit options and create jobs and economic growth.

²³ Government of Ontario. <https://nomts.ca/>



TRANSPORTATION PLANNING ACROSS REGIONS TO CONNECT COMMUNITIES

Metrolinx developed the first Regional Transportation Plan (RTP) for the Greater Toronto and Hamilton Area (GTHA) in 2008 to guide its efforts to transform the transportation network across the region. It provides the vision, goals and objectives for a transportation system, as well as the actions and the policies needed to achieve that vision.

A review and update of the RTP (The Big Move) is under way to ensure that it continues to reflect the transportation priorities of the region, in line with provincial priorities, and to extend its 25-year outlook to 2041.

ONTARIO IS PLANNING FOR THE GORDIE HOWE BRIDGE

The Gordie Howe International Bridge between Detroit and Windsor — Canada's busiest gateway — will be a major contributor to Ontario's economic growth, and its construction is being funded by the federal government. The Province planned for that in constructing the Herb Gray Parkway. The parkway will ensure the safe and efficient movement of people, goods and services to and from the bridge and a future new Canadian inspection plaza.





ONTARIO IS BUILDING BETTER GO REGIONAL EXPRESS RAIL



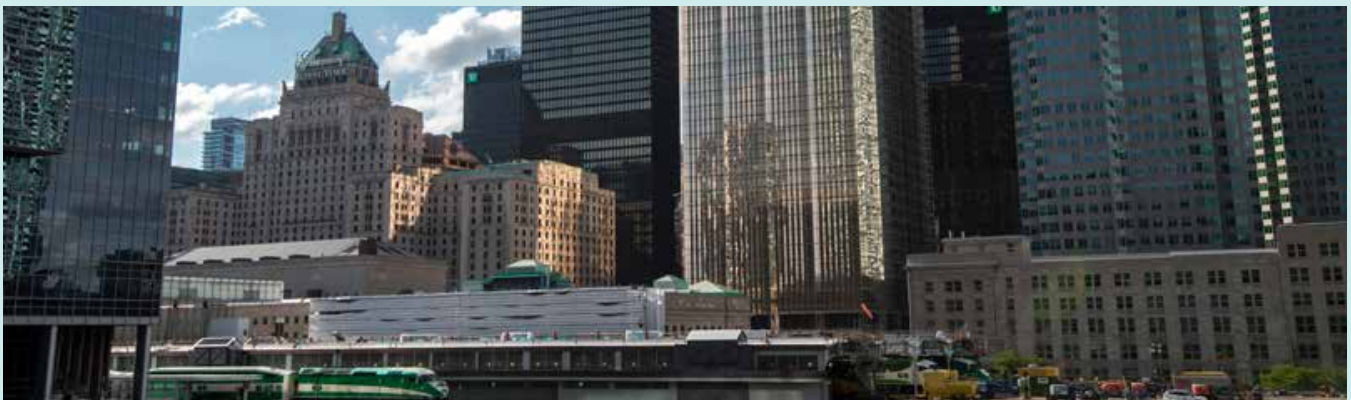
When Canada was celebrating its centennial year in 1967, the first GO train line opened along the shores of Lake Ontario to take passengers to jobs in downtown Toronto.

What began as limited weekday service, running from the suburbs to downtown Toronto in the morning and then the reverse in the evening, has grown to meet the diverse demands of commuters in the booming Greater Toronto and Hamilton Area.

In its first year of operation, GO Transit carried 2.5 million riders, exceeding its projected ridership for that year in just six months. Today, GO Transit

accommodates about 70 million trips per year on seven rail lines, connecting to 15 GO bus terminals and 17 municipal transit systems. The number of weekly trips across the entire GO rail network is also expected to grow from approximately 1,500 to nearly 6,000 once GO Regional Express Rail (RER) is delivered by 2024-25.

As such, GO Transit will be undergoing transformative changes to meet increased ridership demands. By 2024-25, GO Transit will be able to meet twice its current transit demands during peak service hours and four times during off-peak service hours.



Ontario has a strong plan through GO RER. It is part of the province's \$21.3-billion transformation of the GO rail network to ensure more frequent, two-way, all-day and reliable service. More specifically, the Province is planning for major infrastructure improvements to the GO Transit rail network, such as the modification and building of new stations, improvement of rail crossings, and addition of new tracks, locomotives and train control systems.

The RER plan will expand the network, while also electrifying rail service on core lines. Not only will this make trips faster — it will also make it cleaner for the environment.



When fully implemented by 2025, this expanded rail service will also link to local transit services to create a truly regional network.

This network will also become the foundation for the City of Toronto's SmartTrack plan. The Province and the City of Toronto have agreed to an integrated GO RER/SmartTrack service concept, which includes six new stations along the Kitchener, Stouffville and Lakeshore East GO rail corridors within the City of Toronto, and a western extension of the Eglinton Crosstown LRT to Pearson International Airport.

The Province's \$56-billion investment in public transit over the next decade will have a huge economic payoff — from direct construction jobs to shorter commute times for passengers.

And enhanced rail service will get more drivers out of their cars, reducing overall GHG emissions and playing a key part in the ongoing fight against climate change.



ONTARIO IS BUILDING BETTER LIGHT RAIL TRANSIT



Light rail transit lines are the future when it comes to transforming the way commuters move. Ontario is already thinking far into the future by funding several LRT projects.

These transit lines will help move passengers more quickly and efficiently, as they run on dedicated tracks, and won't get stuck in regular traffic.

The new LRTs can carry far more passengers than typical buses or streetcars — as many as 25,000 commuters per hour.

In Ottawa, the first stage of the Confederation Line is set to open in 2018. It will run for 12.5 kilometres, from Tunney's Pasture in the west to Blair Road in the east, with the key downtown stretch built underground. And Stage II will go even further east, west and south, with more than a \$1-billion investment from the provincial government.

In Waterloo Region, the ION LRT's first phase will run from Fairway Park Mall in Kitchener, north through downtown Kitchener and Uptown Waterloo, making stops at Wilfrid Laurier University and the University of Waterloo and ending at Conestoga Mall in Waterloo.



With 200,000 new residents expected to move to this region in the next two decades, there would need to be 500 kilometres of lanes built to keep up. Instead, the region is preventing urban sprawl and the encroachment on prime agricultural land by choosing rapid transit.



In Toronto, construction continues on the Eglinton Crosstown LRT line, which will run for 19 kilometres along Eglinton Avenue from Mount Dennis in the west to Kennedy Road in the east — with 10 kilometres underground between Keele Street and Laird Drive.

The Eglinton Crosstown LRT — one of the largest infrastructure investments in Toronto's history — will open in 2021.

Scott Shaw, who is overseeing work at Cedarvale station for Crosslinx Transit Solutions, says this is a very challenging project — building underground, while the subway and buses are still running, and while Eglinton Avenue and the Allen Expressway remain open.

"It's not like a normal job site, where you can back the truck up and offload," he said. "You have a 30-foot by 30-foot opening, a few stories deep. You are taking all your stuff down there — all your concrete, rebar, mechanical, electrical, elevators, escalators.

Everything has to go up and down shafts."

The Province is making an unprecedented investment of \$56 billion in public transit. Other LRT projects in the works include Hamilton, Hurontario in Mississauga and Finch West in Toronto.

When these LRTs are up and running in different communities, they will ensure commuters get from point A to point B quicker, which ultimately means more time with those who matter most.



ONTARIO'S VISION FOR THE FUTURE OF TRANSPORTATION

Integrated and multimodal: Ontarians will experience seamless transportation that's accessible to users of all abilities. The government will plan and manage the transportation system as one single network, including transit, roads, cycling networks, ferries and expanded charging options for electric vehicles across the province. It will also maintain this network to continue to support high-quality service.

Connecting people: Ontarians will connect to their jobs, their families, their communities and important services through faster and more-frequent transit service and an effective road network.

Future ready: The government will be prepared for technology of the future. For example, the government aims to adapt the transportation systems and infrastructure to prepare for connected/automated vehicles (CV/AV) to meet the broader goals around safety, congestion, mobility and environmental impacts.

Optimizing existing infrastructure and reducing congestion: Convenient and affordable public transit, combined with traffic-management strategies, such as High Occupancy Vehicles (HOV) and High Occupancy Toll (HOT) lanes mean less traffic and congestion on roads. Transit-service operations and policies, such as fare policy, are optimized to make the best use of transit capacity.

Supporting economic development: Ontario's multimodal transportation system is critical to the province's economy. It connects to key gateways, providing safe and reliable access to the rest of the continent and the world.

To ensure this system continues to support the efficient movement of people and goods, Ontario is investing in priority infrastructure projects across the province, including public transit, roads, bridges and highways. For example, the Province is conducting an environmental assessment for high-speed rail along the Toronto-Windsor corridor, and working with First Nations in Northern Ontario to plan and construct a year-round access road to the Ring of Fire development, creating new jobs and improving the quality of life for people in the North.

Environmentally sustainable: Electric vehicles, low-carbon trucks and buses, rapid transit and the electrification of the GO rail network mean fewer emissions and less air pollution. Improving air quality means fewer respiratory problems and the mitigation of climate change. Less traffic and congestion also means lower emissions and air pollution, because cars will not be spending so much time idling in traffic. Commuter cycling infrastructure will promote active transportation.

Co-ordinated with land-use planning: Transportation supports land-use planning goals, such as densification and development near existing transit hubs, through dedicated lanes for buses.



5.3 PROVIDING THE RIGHT HEALTH CARE, WHEN AND WHERE IT'S NEEDED

Health care facilities are some of the most critical infrastructure assets in the province. Having the right infrastructure directly enables better health care outcomes — at both the individual and community levels.

Challenges in Ontario's Health Care Sector

Ontario's population is growing and aging. As people age, they depend more on the province's health care system. The government expects that by 2041 seniors will make up 25 per cent of the province's population. Seniors are already heavier users of hospital services and have longer hospital stays. For example, on average, a senior is in acute in-patient care roughly one and a half times longer than a non-senior adult.

Health care facilities are getting older, too. For example, Ontario's hospitals have an average age of 47 years. They need repairs, renovations and, in some cases, replacement.

As the population of Ontario continues to grow and age, and public facilities continue to age and deteriorate, there is a demonstrable need for capital investments for both new capital projects and the maintenance and repair of existing facilities. The combination of the aging population and aging facilities will put a strain on Ontario's health care system in the future. To put "Patients First," the Province's aging health care infrastructure will require significant levels of investment over the next 10 years

Hospitals have often been considered the foundation of the government's health care system, but many services can be provided just as well and at a lower cost in community facilities outside hospitals. The Province is working to establish the infrastructure to provide community-based care effectively and where appropriate.

COMMUNITY HUBS IN ACTION

The Carlington Community Health Hub is a successful partnership between the Carlington Community Health Centre and Ottawa Community Housing. The collaboration answers the needs of the community by delivering affordable housing for seniors, primary medical care and support services, all under one roof.

ONTARIO IS PUTTING PATIENTS FIRST

The government's Patients First: Action Plan for Health Care reaffirms the Ontario government's commitment to providing Ontarians with access to the right care, at the right time and at the right place. The goal is to improve patients' health care experience and their health outcomes. An important part of this commitment is to make it easier for people to receive care at home and in their community.



How Ontario Is Building Better Health Care Infrastructure

The Province has developed a balanced plan to address growth and renewal needs and ensure that Ontarians have access to the care they need. These investments provide opportunities to improve care delivery and to improve hospital operational efficiency and sustainability. They also provide appropriate service levels that take into account community growth and changing demographics. These investments protect and sustain the health care infrastructure, now and for generations to come.

To meet the needs of Ontario's growing and aging population, the government must ensure that health care is being provided in modern facilities. Over

the next 10 years, the Province plans to provide more than \$20 billion in capital grants to hospitals. This includes a new commitment of approximately \$9 billion to support the construction of new major hospital projects across the province. These transformational investments will support timely access to the right care, in the right place, at the right time.

Investing in health care infrastructure also makes good sense environmentally. That is why the Province's funding of hospital retrofits and renewal is consistent with Ontario's Climate Change Action Plan. In support of the Action Plan, the government has launched an evidence-based Hospital Energy Efficiency Program (HEEP) for 2017–18 to improve the energy efficiency of Ontario's public hospitals by reducing GHG emissions and redirecting energy-related cost savings back into direct patient care. In addition, new builds and retrofits provide opportunities to increase the accessibility of hospitals and other facilities, consistent with Ontario's Building Code and accessibility standards for public spaces.

The Province is investing more than ever in innovative technologies and treatments to reduce the length and cost of hospital stays. With this shift in care, patients may need to access care in settings outside a hospital, such as through home care, at a community health centre or in a long-term care home. Focusing on community care will help the Province find the right balance between caring for patients in hospital and in the community. Transitioning services into the community will free up capacity in hospitals for acute cases that do require hospital care.

TRANSITIONING TO COMMUNITY-BASED HEALTH CARE

Delivering modernized models of care and community infrastructure funding to shift care from hospital to community settings, along with focusing on long-term-care needs in communities, will transform how health care is delivered over the coming decade.

The Province is exploring opportunities to provide health services more efficiently and closer to residents' home communities.

The redesigned Community Health Capital Program streamlines funding applications and expands funding eligibility. New investments in hospices and supervised injection sites are enabling care and prevention to occur in appropriate settings. Eligibility for funding has also been expanded to support the co-location and integration of multiple health and social services under one roof.



ONTARIO IS BUILDING BETTER HEALTH CARE IN VAUGHAN

The future Mackenzie Vaughan Hospital, scheduled to reach completion in 2020, will be part of Mackenzie Health, a regional health provider in Southwest York Region and beyond. Patients in Vaughan will benefit from the following:

- A faster and more efficient registration process with Self-Serve Registration Kiosks and E-Check-In enables patients to confirm their appointments up to seven days in advance.
- Advanced diagnostic imaging and modern surgical services as well as other specialized medical and treatment services will provide a seamless experience for patients.
- The Mackenzie Innovation Institute (Mi2) is a hub for innovating health care. Mackenzie Health is also working with its partners to expand the connectivity of IT systems to improve care through greater efficiencies and patient-centred focus.
- Integrated “smart” digital technology systems and medical devices can speak directly to one another to maximize information exchange. This platform will provide advanced, secure and adaptable technologies that will allow for connectivity both inside and outside the hospital walls to enable integrated care. A single directive from a physician could trigger an entire range of actions needed for patient care.



ONTARIO IS INVESTING IN BETTER HEALTH CARE FOR NORTH WEST ONTARIO

Thunder Bay Regional Health Sciences Centre (TBRHSC) and the University Health Network in Toronto are jointly developing a Comprehensive Cardiovascular Surgery (CVS) program for patients of the North West (NW) LHIN. In the past, NW LHIN heart patients and their loved ones had to travel to Toronto, Hamilton or Ottawa, hundreds of miles from home, to receive life-saving CVS. As a result of this successful partnership, the government is building and expanding capacity in Thunder Bay and flying experienced surgeons to Thunder Bay to operate on patients, rather than having patients fly to southern Ontario. The Province is supporting the planning and implementation of this new program by funding this major hospital capital project at TBRHSC.

The investments Ontario is making in the province's health care infrastructure will provide Ontarians with health care services across the continuum of care, supported by modern technology, now and in the future.

To make the best use of infrastructure investments in the health care sector, the Province will continue to work with Local Health Integration Networks (LHINs) and with community partners to better understand regional needs across the health care sector, including for example, regional emergency services.



ONTARIO IS INVESTING IN THE RIGHT HEALTH CARE

Hospitals and Local Health Integration Networks (LHINs) are collaborating on several innovative approaches to address Alternate Level of Care (ALC) challenges. Infrastructure investment can help enable this innovation through the reuse and repurposing of existing infrastructure. For example, the Reactivation Care Centre – Central LHIN Hospitals Collaborative will soon be transformed into a facility specifically designed to rehabilitate hospital patients in the Central LHIN so that they can be discharged to their homes or a more appropriate care setting. The Toronto Central LHIN and University Health Network are developing a plan to repurpose the Hillcrest facility to provide a range of community health services for patients currently in hospital.

ONTARIO IS INVESTING IN TECHNOLOGY IN HEALTH CARE

Health care needs and approaches to treatment can evolve rapidly with technological advances. Complex Malignant Haematology (CMH) is an emerging area of need in the health care system for people with lymphoma, leukemia, myeloma and other blood disorders. CMH is a complex and evolving area of clinical care that requires specialized facilities in which to perform challenging procedures, such as stem-cell transplantation. To address this rapidly growing need for these services, the following hospitals have projects in planning or under construction: University Health Network, Hamilton Health Sciences Centre, The Ottawa Hospital, Sunnybrook Health Sciences Centre and London Health Sciences Centre.





ONTARIO IS BUILDING BETTER INDIGENOUS HEALTH CARE AT NOOJMOWIN TEG



It reflects its name.

Noojmowin Teg Health Centre on Manitoulin Island literally means a place of healing.

"It is central to our vision," said executive director Pamela Williamson of the new healing lodge that opened in 2016 at the centre, which serves seven First Nations within Manitoulin District on Lake Huron.

"It's absolutely the most restful, beautiful space. Everybody actually feels the spirituality of the space," she said, noting that at the middle of the circular room is a stone hearth, where a sacred fire is often lit for prayers and healing.

"It gives us the opportunity to be more connected and practise holistic healing," Williamson said.

The Province contributed \$2.36 million for a significant expansion project to replace temporary structures that were in use.

The health centre, located within the territory of Aundeck Omni Kaning First Nation, offers on-site and community-based services for First Nations



clients, including primary care, mental health and addictions care, traditional healing, allied health and health promotion.

The health centre was built in collaboration with an area First Nation health authority, Mnaamodzawin Health Services Inc., using a cost-shared model. Construction was planned in phases, with the first one opening in 2005, after the original building burned down in a 2001 fire.

In 2016, Phase Two opened with the healing lodge, along with administration and clinical space. The centre hopes in its final phase to build an additional 900 square feet, which will include a medicine room,

with a focus on the making and storing of traditional medicines, and more administration and clinic rooms.

For now, the latest addition ensures Noojmowin Teg is providing culturally relevant health services — both traditional healing and traditional medicine, making it a model of holistic health care.

“For us, it means our services are an integration of traditional and western healing practices,” Williamson said, noting it creates a learning environment.

Collaboration with area health partners, along with a greater focus on traditional practices has led to more culturally sensitive health care services for the Island’s Indigenous populations, she added.





HOW TECHNOLOGY IS TRANSFORMING HEALTH CARE DELIVERY AT TORONTO'S HUMBER RIVER HOSPITAL



In the back hallways of Toronto's Humber River Hospital, the only hint that things are done a little differently is an occasional beeping sound and a voice warning that a vehicle is approaching.

Look down the corridor and there's a small, flat machine, low to the ground, moving at a fast clip. It's not a golf cart coming, but a robot, officially known as an automated guided vehicle (AGV), carrying supplies — everything from IVs (intravenous) to linens to food trays to medications from the pharmacy.

This is a perfect example of how infrastructure investments in a new hospital can improve services, all the while harnessing innovation and technological advances.

The Province plans to spend more than \$20 billion in capital grants over the next decade to help hospitals renovate existing facilities or build new ones.

Humber River Hospital, North America's first digital hospital, has 10 of these AGV units, which can carry up to 600 kilograms, zipping down service corridors, ferrying items to all 14 floors and parking their goods at designated delivery portals on each floor, to be picked up by staffers.



When administrators started infrastructure planning for this 656-bed community hospital, just a stone's throw from the busy Highway 401, they knew it would cover 1.8-million square feet.

That would mean a ton of walking to make daily deliveries, so they wanted to figure out a way to move supplies efficiently. Plus, they wanted to focus their budget dollars on delivering front-line patient care.

Jennifer Tredinnick, senior director of planning at Humber River Hospital, which opened in 2015, says this robotic delivery system has become second nature now.

"They are very efficient. They don't have a lot of down time," she said. "There were a couple of months where we had to do quite a bit of trouble-shooting as they learned us and we learned them."

Before any AGV moves, it will issue a voice warning that it will be moving momentarily, and a laser-guided beam means it will come to a stop if someone or something is blocking the path. It will ask someone to remove the obstruction, so it can get on its way.

These devices do not mix in public hallways, where patients or visitors are walking, and they use only service elevators, with more deliveries made during evening hours and sometimes overnight.

Each delivery will send a message to the appropriate staffer that items have been placed in the docking-bay area for pickup.



"At first, people were a little wary of them, but I think now people see it as a great part of the hospital, a really nice, efficient part of the hospital," Tredinnick said, adding Humber River regularly fields inquiries from other hospitals wanting to learn more.

Infrastructure investments are much more than just building new hospitals — those dollars translate into improved quality of care, in all aspects, even logistics deliveries.

ONTARIO'S VISION FOR THE FUTURE OF HEALTH CARE

Easy to navigate: The Province's 14 LHINs have been subdivided into 76 care communities to better integrate new models of care in locations where they are needed most.

Community-based when possible, and integrated with other social services: Up to 25 per cent of patients admitted to hospitals can be served in the community. Moving care into community-operated facilities and care homes with more bed spaces is a convenient and cost-effective way to provide services. Focusing on increasing access to community care will ease the strain on hospital capacity and provide timely acute care as needed. Community hubs present an opportunity to provide greater access to health and social services in one location.

Hospital-based for acute needs: The government will have enough capacity to address acute cases as needed and expand capacity in high-growth areas of the province. It will respond to health care innovation by ensuring that infrastructure is available to support new models of care.

Leveraging technology and new service-delivery options: Increased use of innovative service-delivery options, such as tele-medicine, will help reduce delays and treat patients in a convenient and cost-effective way. The government will also explore other service-delivery changes, such as flying surgeons to Thunder Bay to perform a procedure instead of flying patients and their families to the GTHA.

Engaged with the long-term-care sector: The government is advancing the Enhanced Long-Term Care Home Renewal Strategy and redeveloping more than 30,000 long-term-care beds to current design standards by 2025, ultimately eliminating all four-bed wards in Ontario's long-term-care homes.





5.4 TRANSFORMING EDUCATION: SUPPORTING FAMILIES AND STUDENTS

Ontario wants every child to get a great start in life. More than any other public asset, schools define who we are — and who our children will become. It is critically important to educate Ontario's children to be confident, capable and caring citizens, who are equipped for the future.

Investing in education infrastructure supports the Province's policy goals of job creation, growth and skills development and creates a space for families to come together throughout the province. Ontarians can have confidence that their publicly funded education system supports students from junior kindergarten through to high school and beyond.

Challenges in Ontario's Education Sector

Ontario's population distribution and demographics are changing. In some parts of the province, school spaces are not being fully used. In others, schools are over capacity. The government needs to plan for the future, so that Ontario has accessible spaces for students where and when they need them. Where there is excess space that is not being used for educational purposes, Ontario must continue to work with community partners to find alternative uses for the space, such as child care or community hubs.

There are also particular challenges in small or remote communities that have small or declining student populations.

Finally, schools do not exist in isolation. In addition to the challenges outlined above, there are many factors that will impact the way school boards make infrastructure decisions, such as evolving accessibility requirements.

ONTARIO IS MAKING THE MOST OF SCHOOL SPACE

The government is currently revising the pupil-accommodation guideline and the community-planning and partnerships guideline to help school boards make more efficient use of school space while continuing to ensure that communities have the opportunity to provide meaningful input. Community hubs are an example of how to maximize underutilized school space.



ONTARIO IS SUPPORTING CHILD CARE INFRASTRUCTURE

Quality child care is essential for families with young children. Parents want peace of mind, knowing they will have access to care for their children as close to home as possible — and that this care can be managed within their monthly budget. Yet, for too many, child care is unavailable or unaffordable, or has a significant wait time.

The Province plans to help 100,000 additional children aged 0 to 4 access child care over five years, as announced in the 2016 Ontario Speech from the Throne.

This year alone, the government is investing over \$200 million to increase the accessibility and affordability of licensed child care throughout the province. This means families will have access to child care for up to 24,000 more children under four years old.

How Ontario Is Building Better Education Infrastructure

The Province's education infrastructure investments will help more families give their kids a great start in their early years and help communities thrive.

The Government of Ontario has invested nearly \$17.5 billion in capital funding to support more than 820 new schools and more than 800 additions and renovations since 2003. These investments are needed to address enrolment growth, support full-day kindergarten, replace schools in poor condition and support the reduction of unused space.

The government is also providing \$1.4 billion annually to support the renewal of existing school space. This is in addition to \$2.7 billion that was provided in the 2015–16 and 2016–17 school years. These investments will result in improvements to key building components that ensure student safety and improve energy efficiency.



The Province is taking action in a number of important areas to support families and students by:

- improving access to licensed child-care spaces for children aged 0 to 4
- investing in full-day kindergarten to give all children a great start to their school years
- building and maintaining modern, resilient education infrastructure that will help improve student health and fight climate change
- funding school-board capital-planning initiatives to invest in priority projects and improve school conditions to support the well-being of students and staff
- facilitating and funding initiatives to support the development of community hubs in surplus school property to make the most of school space
- supporting school boards in addressing local needs in rural and Northern communities

ONTARIO IS ENABLING COMMUNITY HUB DEVELOPMENT IN BRANTFORD

In 2016, the “Major B. Hub” was launched by the Grand Erie District School Board in partnership with the City of Brantford. This community space includes meeting and learning areas, a fully equipped kitchen and an accessible washroom. It is located in the lower level of Major Ballachey Public School in Brantford, sharing a hallway with an Early Learning Centre and the Wish Closet (which provides free clothing and household items). With housing, community-facilitated social services, recreation, education and wellness programs, the Major B. Hub is uniquely situated to provide support and resources to a priority neighbourhood, and to enhance the comfort of children and families in a school setting. Program offerings are determined by community need, informed by the local neighbourhood association and free to all participants.



ONTARIO IS STRENGTHENING RURAL AND NORTHERN EDUCATION

As part of the recent Plan to Strengthen Rural and Northern Education, the government announced new measures to support joint-use planning between co-terminus school boards. When school boards share space, it can help ensure that school presence is maintained in a diversity of communities, and that space is being used efficiently. Moving forward, the government will

be evaluating all capital proposals for joint-use opportunities between school boards.

The government has also doubled existing funding available to help boards explore and develop joint-use opportunities, and it has provided an additional \$1 million to support operational funding for joint-use project management.

Successful joint-use projects will receive a greater portion of government capital funding, which will enable schools to manage higher costs.





ONTARIO IS BUILDING BETTER PUBLIC EDUCATION: LEAMINGTON DISTRICT SECONDARY SCHOOL



There's always the first day of school jitters.

But this September in southwestern Ontario, there was much more excitement as the doors opened to the new \$32-million Leamington District Secondary School.

Much planning went into the high school, from ensuring natural light comes streaming in, to designing the bus bays for the vehicles that will bring students from the nearby farming community, famous for growing tomatoes.

This is just one example of the almost \$16 billion the province has earmarked over the next decade in capital grants to school boards, from renovating existing schools to building new facilities to consolidating others.

On the first day, students got their first glimpse of mobile laptop carts and state-of-the-art kitchens for culinary programs.

The music room is built on the stage — and the theatre arts room is nearby, creating a green room for productions.

Some walls can be removed temporarily. In the gym, the bleachers are moveable.

"It's about designing flexible spaces, not restricting rooms to where 'only this program can be taught here,'" said Giuliana Hinchliffe, co-ordinator of engineering for the school board. "We didn't build full science labs. Depending on the type of experiments going on, teachers can shuffle between labs."



The key is ensuring that space is flexible, and used well. “We’re trying to get away from people owning space,” she said.

And with flexibility comes collaboration. If two teachers want to teach a joint class, some rooms can be opened up to create a larger space. Or discussions can get under way in the school library — but spill out into the student commons, creating room for three classes at the same time.

Space could also be used outside of regular school hours. The kitchen could be used by the community for a local Meals on Wheels program, or the gym could be an ideal spot to run recreational sports programming. Classrooms might be used for cultural programming or special language classes.

In addition to maximizing space, planners looked at ways to improve energy efficiency, especially since buildings are often among the biggest greenhouse gas emitters.



The Leamington school is using specially designed concrete slabs — with tube openings — to heat or cool the slabs at night when energy costs are lower, and then release the warm or cold air during the day. It is also planning to use LED lighting throughout the school.

“I have never built the same school twice. We have learned lessons from every new school,” said Hinchliffe.



ONTARIO'S VISION FOR THE FUTURE OF EDUCATION

Continues to provide high-quality education:

Ontario is providing high-quality education to children across the province to prepare them for life after graduation, whichever pathway they choose. Education is accessible and inclusive to reflect Ontario's diversity and help children achieve their full potential. Quality public education is available in all communities, including Northern, rural and remote communities. When all students are provided with opportunities for an excellent education, communities thrive.

Provides access to licensed, quality child care:

The government will offer access to 100,000 additional licensed child-care spaces for children

aged 0 to 4. The Province is expanding capital investments to create 45,000 new spaces. It is prioritizing spaces in schools, and is planning to work with community-based and broader public-sector providers. Access to child care will help more families give their kids a great start in their early years. It will also support parents who choose to participate in the workforce.

Maintains schools properly: The Province is funding school-board capital-planning initiatives to invest in priority projects and improve the condition of schools.

Creates community hubs: The Province is actively supporting the development of community hubs, both in current and in surplus school buildings.





5.5 TRAINING ONTARIANS TO BE THE WORKFORCE OF THE FUTURE

In today's economic climate, postsecondary education is more important to Ontario's future than ever before. Fierce competition in a global knowledge-based economy means that the Province's workforce must have the education it needs to be competitive. Colleges, universities and skilled trades programs each play a critical role in equipping people for success by providing them with the skills to succeed. High-calibre teaching facilities and advanced technological infrastructure keep the Province's colleges and universities at the forefront of advancement. These institutions also support the vibrancy of their local economies in and around colleges and universities.

The apprenticeship system is vital to Ontario's success. Currently, 24 colleges and 44 union- or employer-sponsored centres are providing training. There are more than 150 apprenticeship trades in four sectors across Ontario, including construction, industrial/manufacturing, motive power and services. Investing in a modern apprenticeship system that provides people with the skills and training they need to succeed is part of the Province's plan to create jobs, grow the economy and help people in their everyday lives.

ONTARIO'S HIGHLY SKILLED WORKFORCE STRATEGY

Through Ontario's Highly Skilled Workforce Strategy, the Province is working in partnership with other orders of government, educators, employers, labour and other partners to match education, training and skills development with the demands of the technology-driven knowledge economy.

IMPROVING ACCESS TO POSTSECONDARY EDUCATION IN BRAMPTON AND MILTON

Ontario will invest up to \$180 million in new postsecondary sites in Brampton and Milton to expand access to postsecondary education and support students with new learning options in their communities. These sites will be focused on Science, Technology, Engineering, Arts and Mathematics (STEAM) and model a 21st-century learning environment, with modern classrooms, curriculum delivery models and significant experiential learning opportunities.

Brampton and Milton are two of the fastest-growing communities in Canada, located along Ontario's Innovation SuperCorridor between Toronto and Windsor, where there are dense pockets of world-class talent, start-ups and research institutions.





Challenges in Ontario's Postsecondary Education Sector

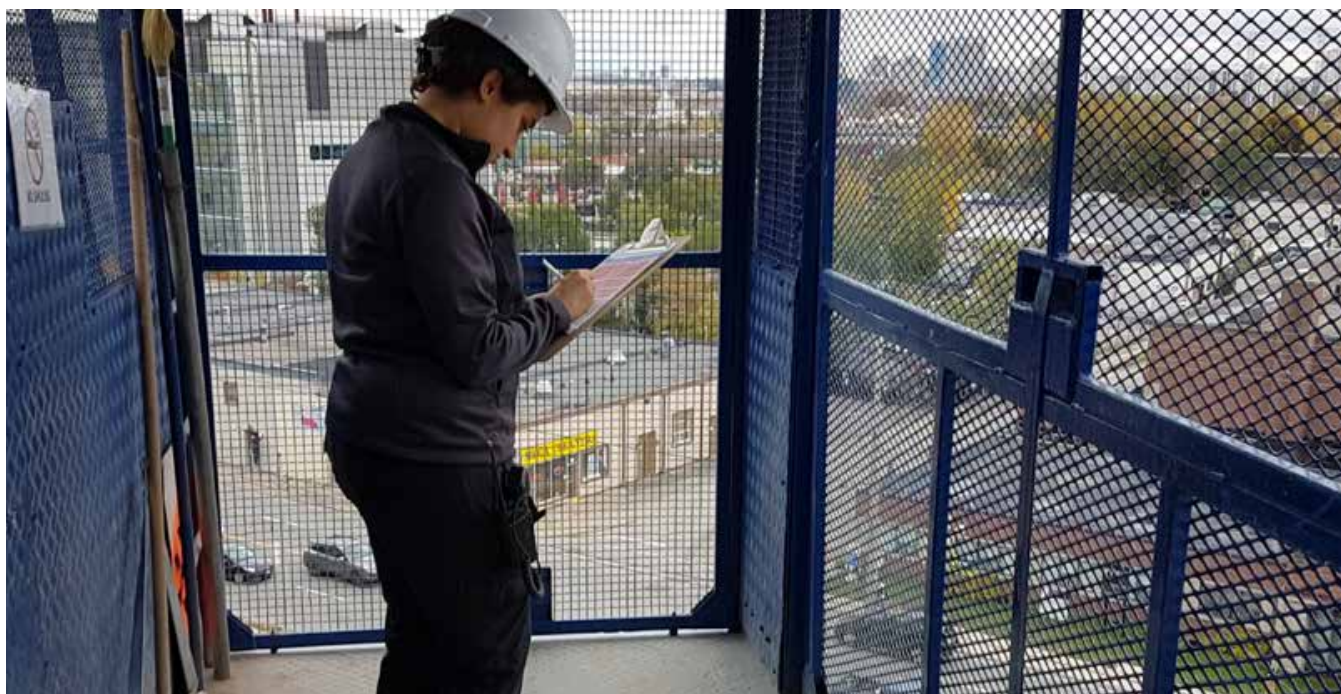
To offer students modern and innovative learning environments, the government must keep up with the pace of technology. This means renewing existing postsecondary space and planning facilities to be adaptable to changes.

The Province also recognizes the important economic role that postsecondary institutions play in their local communities. They are employers and provide opportunities for students. They also attract investment. The Province plans to expand access to postsecondary education throughout the province, whether that is through new campuses or through virtual education.

How Ontario Is Building Better Postsecondary Infrastructure

The government is making a range of investments to improve the access to and the quality of postsecondary education, such as:

- working to ensure that postsecondary education facilities have the necessary advanced technology to meet the needs of a changing, knowledge-based economy
- expanding access to postsecondary education, both in the classroom and through virtual learning to support colleges and universities across the province in developing new and innovative approaches to online and technology-enabled learning that meets the needs of Ontario students
- addressing facility-renewal priorities across colleges and universities to ensure that students have safe and high-quality learning environments



- transforming and modernizing research spaces to help ensure the postsecondary sector continues to drive Ontario's competitive advantage in research and innovation
- modernizing Ontario's apprenticeship system by increasing participation and completion rates for under-represented groups, while creating clearer pathways for all apprentices and developing an approach to enhance apprenticeship opportunities through major public infrastructure projects in Ontario

CREATING A NEW FRENCH LANGUAGE UNIVERSITY

Students in Ontario can study in French from early years until high school. The government is proposing to create a new French-language university in the province to provide French learners more opportunities to pursue postsecondary studies in French.

VIRTUAL LEARNING THROUGH eCAMPUSONTARIO

eCampusOntario is a not-for-profit corporation that provides access for students to online courses in Ontario postsecondary institutions. Online learning will provide opportunities for more students from across the province who wish to stay in their home community or, for other reasons, to study online.

This year, 45 recipients from universities and colleges across Ontario will receive a broad range of research and innovation grants through eCampusOntario to explore technology-enabled learning and highlight best practices in student engagement. These grants total \$2.6 million.





ONTARIO IS SUPPORTING SCIENCE AND RESEARCH

Ontario's postsecondary institutions foster research that supports a thriving clean economy. They help train the highly skilled workforce of tomorrow and share knowledge and insights that fuel engines of discovery. Recent examples include:

- Sault College's Institute for Environment Education and Entrepreneurship (iE3) project will renovate and modernize the Sault's existing infrastructure, which houses the Natural Environment and Digital Technologies facilities. It will accommodate new activities, such as collaborative applied research, e-learning and specialized industry training, as well as catalyze innovation in digital technologies and environmental studies and foster the development of new technologies in graphic information systems (GIS), remote surveillance, water treatment and environmental monitoring. The space will be more efficient and will facilitate

applied research and innovation through industry collaboration, specialized training with industry-relevant equipment, private-sector incubation, student and graduate entrepreneurship, and smart grid and clean technologies development and testing.

- Ontario College of Art and Design University (OCAD U)'s Creative City Campus (CCC) project will revitalize and expand the institution's core creative spaces on McCaul Street in Toronto. The \$60-million project involves approximately 50,000 square feet of new construction and 95,000 square feet of renovation and repurposing of existing space in and around the existing facilities of the university. The Government of Ontario is investing \$27 million in the modernization and expansion of learning facilities at the OCAD U campus. The investment will give current and future students greater access to technology-enabled, studio-based and experiential learning, and help the university maintain its status as one of the leaders in art and design education in North America.





ONTARIO IS BUILDING BETTER POSTSECONDARY EDUCATION IN THE NORTH



Laurentian University's McEwen School of Architecture is built on a pride of place.

That means not only reflecting its place in Sudbury, but also ensuring a special focus on the resiliency of Northern people and the unique beauty of the landscape of Northern Ontario. That philosophy is at the heart of the school's goal of educating professionals, with the hope they will choose to remain in the North.

So the focus is on creating designs and work reflective of the region. Student projects have included designer ice fishing huts and canoes made from carbon fibre and birch bark. The project is just one example of how Ontario is investing in postsecondary education, earmarking \$3 billion in capital grants over the next decade.

As the first new architecture school to open in 45 years in Canada, it is offering an exciting new program for both bachelor's and master's degrees, but firmly rooted in the North.

At the same time, it has a unique tri-cultural perspective, holding classes in both English and French, along with teachings from First Nations and Métis Elders and guests.

Different cultural perspectives are honoured, and the school strives for inclusion when it comes to design.

Located in the heart of downtown Sudbury, the new school is playing an integral role in revitalizing the community.

The school now occupies 77,000 square feet in a double-winged building connected to two century-old Canadian Pacific Railway buildings that have been repurposed and adapted. Old doors and logos from the railroad have been saved and reused.

The open space, which includes a wood-burning fireplace on the ground floor, focuses on sustainability. Exposed steel beams are visible, which serve as immediate teaching tools.



The materials in the \$43-million building include wood, concrete and steel — reflecting the industries at Sudbury's core, including forestry, mining and railways.

Ontario contributed nearly \$27 million toward the new facility: \$21 million from the Ministry of Advanced Education and Skills Development and \$5.74 million from the Northern Ontario Heritage Fund.

The school itself is showcasing new building techniques. For the first time in Ontario, cross-laminated timber, known as CLT, was used.

It uses glue, sandwiched between layers of board from spruce or pine trees, to create a solid sheet of engineered wood, which can be trimmed to form different shapes.

It is strong and versatile – just like the architects that the McEwen School of Architecture hopes to develop and nurture. And it's more sustainable because, with the future in mind, it uses small trees instead of trees from old-growth forests.



ONTARIO'S VISION FOR THE FUTURE OF POSTSECONDARY EDUCATION

Focused on creating modern, safe and high-quality learning environments for colleges and universities:

The Province is investing in new modern facilities and maintaining existing spaces for college and university students.

Innovative and flexible: Offering students more innovative and flexible education and experiential learning opportunities supports Ontario's Highly Skilled Workforce Strategy.

Supportive of student success: Ontario is giving students the skills they need to succeed in the modern economy.

Supportive of the economy: Postsecondary institutions are training Ontario's future

workforce. They also attract investment and are important employers in their local communities.

Inclusive and accessible: Opportunities for postsecondary education should be available to all Ontarians, regardless of income, family background, geographic location or physical ability. More access to affordable postsecondary education, closer to home, will help develop Ontario's highly skilled workforce by increasing experiential learning opportunities, helping students acquire the talent and skills for the knowledge economy and encouraging partnerships in high-demand fields.

Co-ordinated: Funding for postsecondary institutions that comes from the Province and the federal government must be co-ordinated to ensure the best quality of service for students.



5.6 ENSURING A STRONG AND MODERN JUSTICE SYSTEM

A strong justice system must reflect Ontario's values and attitudes, protect Ontarians' rights, be accessible to all Ontarians and allow for effective ways of resolving challenging issues. Through its justice system, the Province:

- makes Ontarians safer in their communities, through strong law enforcement, crime prevention and effective rehabilitation
- prosecutes crime, administers criminal, family, civil and small-claims courts, protects victims and vulnerable people and provides expert legal services and Legal Aid

The provincial justice system should be modern, accessible and sustainable, and should promote overall community well-being, while preserving public safety. It must respond to the diverse needs of Ontario's communities, promote public safety and support improved outcomes for people in, or at risk of, engagement with the justice system. Access to justice should be improved through opportunities for online self-service and remote appearances for some court procedures, reducing time and costs.

Challenges in Ontario's Justice System

The provincial justice sector's assets can be found everywhere, from remote fly-in locations in the North to large urban centres. Ontario's size and its large number of justice-sector facilities create challenges in delivering consistent services, both in person and digitally — there are bandwidth issues in the North and capacity constraints in urban centres. Justice-sector infrastructure assets are costly, and they take many years to plan, build, commission and bring into service.

Decision making in the justice system is decentralized, crosses three orders of government and engages independent partners and participants, including the judiciary, police, Crown attorneys and defense lawyers. In particular, federal government policy changes can have huge impacts on the Province's justice sector. Recent examples include mandatory minimum sentences and the legalization of cannabis. New legal requirements, such as updating camera systems, have also created new demands on the system.

Due to the sensitive nature of the information gathered by the justice system, initiatives to share and integrate data across the criminal-justice sector require IT solutions that cross orders of government and stakeholders, while ensuring appropriate security and privacy of information. These systems are often complex and costly, and require time to design and implement. At the same time, rapid technology changes (for example, body-worn cameras for police) continually challenge the capacity of existing resources.

ONTARIO IS ENABLING A CULTURALLY RELEVANT JUSTICE SYSTEM

The Thunder Bay courthouse includes a culturally relevant space for Indigenous Peoples. The Aboriginal Conference Settlement Suite is the first in Ontario and was planned with input from elders and community leaders. It is designed to respect and acknowledge Indigenous traditions and encourage the healing process.



How Ontario Is Building Better Justice Infrastructure

The Province is transforming the justice system to make it more modern, client-centred, community-based and focused on prevention. The Province also needs to work closely with its partners, both inside and outside government, to ensure that its goals are aligned.

The Province is leveraging technology to transform how the courts and tribunals operate. Ontario is working to make access to justice easier and faster. Electronic filing of documents, online dispute resolution (to resolve matters earlier) and increased

use of remote video technology will become an integral part of the justice system. Increasing opportunities for online self-service and the ability to appear remotely for some types of events is another way to support modern service delivery.

Ontario's blueprint for reconciliation with Indigenous communities calls for Ontario to create a culturally relevant and responsive justice system. It will include Indigenous legal principles and systems that were disrupted because of colonization, such as restorative justice. Reconciliation with Indigenous Peoples also includes expansion of Indigenous bail verification and supervision and access to Indigenous court workers.



The Province is modernizing the corrections system, including an update of the policies on the use of segregation and an improvement of bail and remand. It is also modernizing Ontario Provincial Police (OPP) facilities to meet current and future requirements.

ONTARIO IS SUPPORTING INNOVATION IN CORRECTIONS

New, multi-purpose correctional centres in Thunder Bay and Ottawa will set the standard for innovation and renewal. The Province plans to engage the public, key stakeholders and Indigenous partners to help decide on future programming at these proposed correctional centres.



ONTARIO'S VISION FOR THE FUTURE OF THE JUSTICE SYSTEM

Fair, humane and client-centred: There is a focus on prevention and on reducing the number of people in custody. Where custody is appropriate, the government will ensure access to programs and services to rehabilitate and reintegrate individuals. The goal is to promote overall community well-being, while preserving public safety. The Province is also seeking better outcomes for people engaged with the justice sector, and is working to ensure that health care services in the prison system are integrated as required and to update policies on segregation, bail and remand.

Culturally relevant and responsive: The justice system must respond to the diverse needs of Ontario's communities. In particular, Ontario's blueprint for reconciliation with Indigenous communities, which calls for Ontario to create a culturally relevant and responsive justice system, would include working toward strengthened relationships with Indigenous Peoples on a nation-to-nation basis.

Modern, accessible, sustainable: The Province is reducing the time required and costs incurred to resolve legal problems. Justice will be more accessible through multi-channel service delivery and technology. Courts and tribunals will use electronic filing of documents, online dispute resolution to resolve matters sooner and remote video technology to save travel time and money. Online electronic processes for jury administration and remote video appearances will reduce the need for physical infrastructure.

Supportive of safe, strong communities: This will be achieved through law enforcement, crime prevention and effective rehabilitation.

Multi-purpose: Correctional centres will go beyond bricks and mortar. They'll engage staff, justice and community partners to work together for rehabilitation that supports better outcomes

Focused on using existing space efficiently: Initiatives such as electronic filing, remote and online participation and reduction in the number of people in custody means the Province needs less space for file storage, holding cells, public-service areas and parking.



5.7 MANAGING NATURAL RESOURCES AND THE ENVIRONMENT SUSTAINABLY

It is essential that the Province manage its natural resources responsibly and sustainably to ensure the prosperity of both current and future generations. In addition to managing provincial parks and natural resources, the Province also provides important services, such as forest-fire management and the provision of necessary aviation services that ensure public safety and respond to natural-hazard emergencies.

Challenges in Ontario's Natural Resources Sector

As the climate changes, various natural environmental hazards are anticipated to increase. Improvements to Fire Management Headquarters facilities in Thunder Bay, North Bay and Dryden will help mitigate potential loss of life and/or environmental damage resulting from the anticipated increases in forest fires. Further, increases in extreme weather events, such as storms, floods and droughts are also anticipated. Provincial water-control dams play a key role in controlling water flows and potentially mitigating loss of life and environmental damage resulting from these extreme weather events. Additionally, capital expenditures are being directed to building and maintaining non-forest access roads, bridges, and rail and water crossings that help mitigate impacts to transportation routes, which may be required for emergency preparedness, response and support. Ultimately, this will protect the public and the environment, including fish and wildlife.

How Ontario Is Building Better Natural Resources Infrastructure

The government will continue to work toward its mandate to manage the province's natural resources and green infrastructure in an ecologically sustainable way to ensure that they are available for the enjoyment and use of current and future generations. This includes key activities such as:

- managing biodiversity of wildlife and plants
- managing natural heritage and protected areas
- promoting green infrastructure to complement physical, social and cultural infrastructure
- managing Crown land, water and non-renewable resources
- providing leadership and oversight to support the sustainable use of forests for a healthy forest-products sector and thriving forest-dependent communities
- supporting the provincial commitment to renewable energy and facilitating the availability of Crown land for renewable energy projects, including water, wind, solar and bio-energy

To make the best use of infrastructure funds in the natural resources and mining sectors, the Province will continue to:

- make important linear infrastructure investments, such as transportation, to support mineral development in the Ring of Fire (see Transportation section for more information)



- invest in expanding or renewing fire-management headquarters and centres in Thunder Bay (\$25 million), Dryden (\$28 million) and North Bay (\$8 million)
- maintain its \$5-million long-term annual transfer-payment program to the Province's Conservation Authorities for water and erosion-control infrastructure

The Province is undertaking an important multi-year program to create and implement an efficient, standardized system to support more accurate financial accounting and reporting and risk-prioritized capital spending for infrastructure assets related to natural resources management. The state-of-the-art system will align with these government directions and use evidence-based decision making to enable more effective management of highly diverse asset classes across widely-varying program areas. This will result in more strategic delivery of programs and services, supporting more effective and efficient management of Ontario's natural resources, and thus providing greater benefits to Ontarians.



GREEN INFRASTRUCTURE DEFINED

Green infrastructure refers to natural and human-made elements that provide ecological and hydrological functions and processes. Green infrastructure can include components such as natural-heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs.

ONTARIO'S VISION FOR THE FUTURE OF THE NATURAL RESOURCES SECTOR

Sustainably managed: Ontario is providing leadership and oversight to support the sustainable management of natural resources, such as forests, to ensure a healthy natural resources sector and thriving resource-dependent communities.

Modern: The government is making the best use of technologies — such as drones to monitor activities in remote areas.

Nimble and responsive: The Province must be able to respond effectively to natural disasters, such as forest fires.



5.8 SUPPORTING FAIR AND AFFORDABLE HOUSING

Housing infrastructure plays a significant role in enhancing quality of life for the people of Ontario. It impacts all aspects of daily activity, whether it is employment, education or health care. Significant public investments have been made by past generations in building and maintaining Ontario's social and affordable housing stock.

Ontario has a responsibility to strengthen its communities by promoting a housing market that serves the full range of housing needs, protects tenants, prevents homelessness and encourages private-sector building, while supporting the creation of affordable housing and market housing for working families and Ontario's most vulnerable households.

Provincial housing assistance is multifaceted. It includes investment in housing infrastructure and accessibility, financial assistance to help households manage housing costs, support services to enable the most vulnerable Ontarians to stay housed, as well as assistance to help people find and maintain stable housing.

Although Ontario does not own or directly manage housing infrastructure, the Province works closely with its 47 service managers, comprised of upper and single-tier municipalities, and District Social Services Administration Boards (DSSABs) to administer social housing and manage local housing and homelessness-prevention systems. Two Indigenous Program Administrators, Ontario Aboriginal Housing Services



(OAHS) and Miziwe Biik Development Corporation, also play a pivotal role in delivering off-reserve housing programs for the Indigenous community.

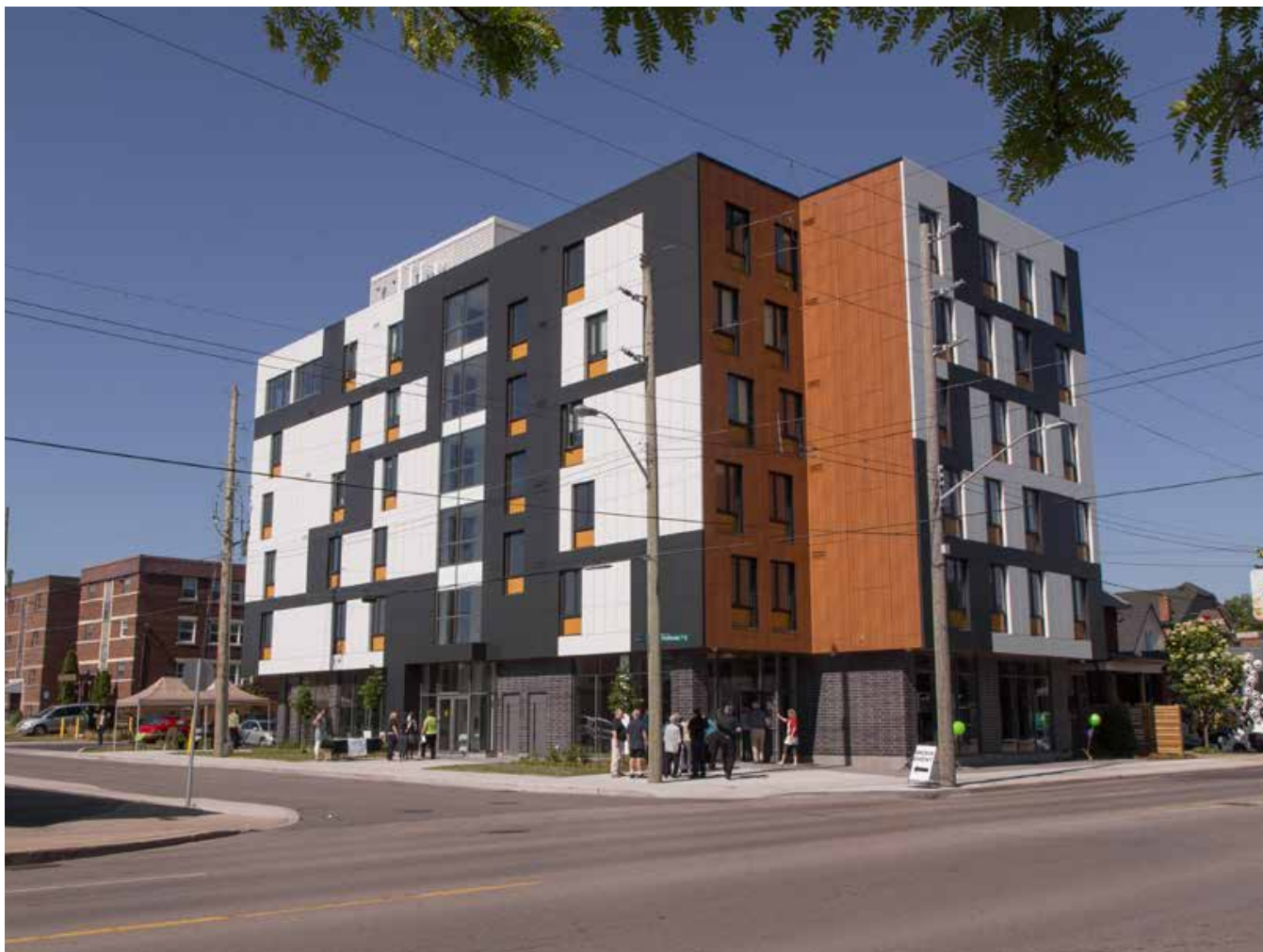
Traditionally, Ontario's investments in housing infrastructure have concentrated on social housing, affordable-housing programs and homelessness supports. This focus has more recently expanded to address broader concerns about housing affordability.

How Ontario Is Building Better Social Housing

Social-housing buildings provide units in which rents are based on the income of eligible tenants, referred

to as rent-geared-to-income or RGI units. Some social-housing buildings are comprised of 100 per cent RGI units, while others contain a mix of RGI units and low-end-of-market rent units.

A major concern is the aging of the social-housing stock in Ontario. Even the newest of pre-1995 buildings are reaching the age where major renovations, including redevelopments, are required to maintain the physical viability of the buildings. Service Managers have responsibility for maintaining the physical and functional viability of the stock, but may face challenges in doing so.



This is why the Province announced new funding for repairs and retrofits in social-housing buildings. This investment is part of Ontario's Climate Change Action Plan, and will provide up to \$657 million for repairs and retrofits to social-housing apartment buildings over five years, subject to carbon market proceeds.

How Ontario Is Building Better Affordable Housing

Ontario also supports housing infrastructure by delivering capital funding through housing programs, such as the Investment in Affordable

Housing (IAH), the Investment in Affordable Housing Extension (IAH-E) and Phase One of the federal Social Infrastructure Fund (SIF).

The IAH and IAH-E are federal/provincial cost-shared programs that are providing over \$1.28 billion up to March 31, 2020, for the construction and repair of affordable housing units and the provision of rental and down-payment assistance to households in need. Phase One of the federal SIF represents an immediate infrastructure investment over two years (2016–17 and 2017–18). It includes a doubling of the funding of the IAH program over two years, which will result in over



\$336 million in additional federal and provincial money to build, renovate, and make available affordable housing. The provincial share of the cost-matching is being made available over three years.

The Indigenous Program Administrators, OAHS and Miziwe Biik Development Corporation, are responsible for delivery of the Off-Reserve Aboriginal Housing component, which is largely based on the IAH-E capital components. Indigenous Program Administrators were allocated \$26.4 million under the IAH and \$44.1 million under the IAH (2014 Extension), and will receive approximately \$17.5M under the SIF IAH.

How Ontario Is Supporting Better Market Housing

To help make housing more affordable for buyers and renters, Ontario is implementing the Fair Housing Plan. The plan consists of 16 comprehensive measures to help more people find an affordable place to call home, while bringing stability to the real-estate market and protecting the investments of homeowners.

To increase the housing supply, one action the government has taken under the plan is to establish the new Provincial Affordable Housing Lands program. The program leverages surplus provincial land across the province to develop a mix of market housing and new, sustainable, affordable housing. Earlier this year, the Province announced the launch of marketing for the first three sites selected as pilot sites under the program — 26 Grenville/27 Grosvenor Street and two sites in the West Don Lands in Toronto. Approximately 2,000 new purpose-built rental housing units, including much needed affordable and family-sized rental housing, will be created on the three sites.

ONTARIO'S VISION FOR THE FUTURE OF HOUSING

The Long-Term Affordable Housing Strategy (LTAHS) Update released in 2016 lays the groundwork for the long-term transformation required for Ontario's housing and homelessness system to better meet the housing needs of Ontarians.

The LTAHS Update also embodies Ontario's vision that every person should have an affordable and suitable home to provide the foundation to secure employment, raise a family and build strong communities. This vision has two overarching outcomes: a decreased number of people who are homeless and an increased number of households achieving housing stability.



5.9 PROVIDING EFFECTIVE SOCIAL SERVICES TO SUPPORT ALL ONTARIANS

All Ontarians should have the opportunity to realize their potential and participate fully in an inclusive society. Our social services infrastructure assets are the foundation for providing:

- safe and comfortable environments for the children and families who rely on youth justice, child and youth mental health, special needs, Indigenous and child-protection programs and services. For example, Children's Treatment Centres provide supports for children and youth that have a variety of developmental, physical and communication challenges
- services that support Indigenous people, women fleeing domestic violence, people who are Deaf or deafblind, and people with developmental disabilities
- services that support newcomers and immigrants, who may be in a vulnerable position and in particular need of improved social infrastructure
- services that are accessible to people with disabilities. For example, the government has been remodelling Ontario Disability Support Program offices to improve their accessibility and enhance the customer-service experience through a more open, client-friendly environment that includes desk-side interviewing, fully accessible reception areas and waiting rooms, accessible and confidential interview rooms and barrier-free access to public washrooms

Challenges in Ontario's Social Sector

Ontario's population is changing and becoming more diverse. That means the needs of the government's

clients are changing, and it must adapt to keep up. The Province recognizes a need to expand programs, meet changing needs, increase access to services and make the most of what it already has. Ontario continues to strive to be a leader in supporting accessibility. The government can also consider locating these services in the same place, through community hubs, to better meet Ontarians' needs and make the best use of public property.

How Ontario Is Building Better Social Infrastructure

Social infrastructure will continue to enable service delivery and capacity building, now and in the future. Sustained investment in infrastructure is critical to support the delivery of programs across the province and ensure accessibility of services.

The Province is making strategic investments in social services and social infrastructure. These investments will address those challenges that have been identified to achieve better outcomes for clients. It will also make sure it is getting the most out of Ontario's existing assets and find more innovative ways to use them.

Many community hubs use surplus space or space not needed for direct program delivery for community use, enhancing integration of education, health care and social services. Ontario will use opportunities to create hubs to enhance access to social services across the province.

Ontario's planned Social Purpose Real Estate strategy will help ensure that the Province reviews



current and future assets from a community-needs perspective. It can also consider such factors as the need for funding or other barriers to co-locating or integrating social services.

ONTARIO'S VISION FOR THE FUTURE OF SOCIAL SERVICES

Client-centred: The government provides the right range of services to meet a client's needs.

Outcome focused: Success is measured by the outcomes of the people who rely on social services.

Local: The government provides services where and when people need them.

Promoting inclusion: Ontario increases support for persons with disabilities, including developmental disabilities.

Supportive of Ontario's most vulnerable: The government will support vulnerable Ontarians through social-assistance programs and other interventions, such as an updated domestic-violence action plan. It is also working to end human trafficking by supporting increased awareness, enhancing justice-sector initiatives and improving access to services for survivors.



5.10 ENHANCING TOURISM AND SPORT WHILE PROMOTING ONTARIO'S CULTURE AND HERITAGE

Accessible and diverse culture, tourism and sport infrastructure is necessary to provide quality services both to visitors and Ontarians. These sectors are essential to building a creative and prosperous economy in Ontario. As Ontario's economy shifts from manufacturing to services, the economic and job-creation potential of these sectors increase in importance.

In addition to contributing to the economy, the province's tourism, culture, and sport and recreation sectors enhance the quality of life for Ontarians. They strengthen communities, promote cultural engagement and inclusion, and provide a variety of social and health benefits.

Ontario has a diverse collection of tourism, culture and heritage sites. It includes museums, art galleries, science centres, convention centres, historical parks, land-based attractions and public libraries, including First Nations public libraries on reserves. In addition to their monetary value, many attractions have social and historical value to the communities and regions in which they are located. For example, Sainte-Marie among the Hurons at Huronia Historical Parks is a designated Canadian National Historic Site and Fort Henry, managed by the St. Lawrence Parks Commission, is a designated National Historic Site of Canada and also part of a UNESCO World Heritage Site.



Ontario is a centre for the arts and cultural industries, such as film and television production, interactive digital media, music and publishing.

Infrastructure investment in the arts and cultural industries contributes directly to many of the goals of the IJPA. This includes promoting global economic competitiveness, productivity, community benefits and job creation and training opportunities. The government supports commercialization and training centres in the arts and cultural industries, performance spaces, affordable workspaces and cultural-collaboration centres, including community hubs and digital infrastructure for media production and distribution.

The government's tourism, culture and heritage assets also contribute significantly to the economy through job creation and events that bring tourism dollars to local communities. Examples include:

- In 2015, there was \$25.4 billion in visitor spending. That year, tourism contributed \$30.9 billion to Ontario's Gross Domestic Product (GDP). Ontario welcomed 12.7-million

visitors who participated in cultural activities in Ontario and collectively spent \$7.1 billion.

- The province also welcomed 8.5-million visitors who participated in sports in Ontario and collectively spent \$2.6 billion.
- In 2014, sport contributed \$2.5 billion to Ontario's GDP.
- The culture sector contributes approximately \$25 billion to Ontario's economy, representing nearly 4 per cent of Ontario's GDP.

Over \$666 million in new and upgraded community sport and recreation infrastructure was created as a result of the 2015 Pan Am and Parapan American Games held in Toronto and the Greater Golden Horseshoe region. These facilities were built for post-games community use, ensuring a lasting legacy from the games. For example, the Toronto Pan Am Sport Centre (TPASC) was built to host Games events. Today, it is a training venue for high-performance athletes, a home for major international sporting events, such as the recent 2017 Invictus Games and 2017 North American Indigenous Games, and is used by the community for recreational purposes.



Challenges in Ontario's Culture, Tourism and Sport Sectors

Many of Ontario's cultural assets are aging. The Province must upgrade them to repair and improve buildings, address accessibility issues and include new technologies. It must also maintain them to ensure that they are available for the benefit of future generations.

The Ontario Heritage Act requires the province and certain listed bodies to identify, protect and care for the provincial heritage properties they own and manage. Many provincial heritage properties are icons in the Ontario landscape, and they are important to the social, economic and cultural well-being of Ontario communities. Examples of provincial heritage properties include many of Ontario's courthouses, correctional facilities, bridges and provincial parks.

The range of tourism, culture and sport assets across the province is as varied as the communities they serve. The diversity of these assets results in some challenges. In addition to maintenance, these institutions and properties need new infrastructure

investments as well. For example, many infrastructure assets are in rural, remote and First Nations communities, and may need upgrades so they have adequate broadband connectivity to offer the best services.

Indigenous communities and organizations (both on- and off-reserve) have unique cultural infrastructure needs, such as: museum-quality repositories for archaeological artifacts, community spaces for cultural/artistic activities (especially for youth), and funding for culture-related activities on the land, such as bush camps.

How Ontario Is Building Better Culture, Tourism and Sport Infrastructure

The Province is advancing its commitment to Indigenous reconciliation by supporting the restoration of the former Mohawk Institute Indian Residential School in Brantford and the redevelopment of an interpretive centre.

To expand and support tourism activities, the Province is undertaking vital research in the areas of marketing, product development and investment



to aid business decisions by both governments and industry. The Province also encourages private-sector investment and new-product development to expand Ontario's tourism sector and promote the economic development of regional tourism.

Ontario will continue to support the Strategic Framework for Tourism by continuing to implement the government's Investment Attraction Strategy, aimed at encouraging international investment in Ontario's tourism industry, and by supporting new investors with a one-window business-advisory approach.

Ontario Place is a unique waterfront asset located in Toronto. The Province is embarking on a bold transformation of this site, which began with the opening of a new urban park and trail in June 2017. Formerly a staff parking lot, the 7.5-acre Trillium Park and William G. Davis Trail has restored access for residents and visitors to a spectacular part of Toronto's waterfront. Improvements to site features like the Cinesphere and the pods build on this progress and help welcome people back to the site. Revitalization and transformation continue to be key priorities as the Province moves forward on its vision by taking new steps to integrate the West Island as a culture and innovation hub and transform the East Island as a celebration common.

Through Ontario's Culture Strategy, the Province is promoting cultural engagement and inclusion, strengthening culture in communities, fuelling the creative economy and promoting the value of the arts throughout government. It is also continuing to work with cultural institutions, such as libraries, museums and heritage organizations, to continue promoting cultural activities across the province. Ontario is also working with government partners and culture stakeholders to maximize the use of public libraries, museums, galleries and other culture facilities as

community hubs and to explore opportunities to integrate arts and culture activities and spaces into schools and other community facilities.

To support sport across the province, Ontario will continue to champion participation in sport and recreation activities. The government is aware of the need for investment in sport and recreation infrastructure in communities across the province, and a conversation with all levels of government is required to identify the gaps and next steps.



ONTARIO'S VISION FOR THE FUTURE OF CULTURE, TOURISM, HERITAGE AND SPORT

Supports arts and culture: Ontario promotes cultural engagement and inclusion, strengthens culture in communities, fuels the creative economy and promotes the value of the arts throughout the province.

Conserves Ontario's heritage: The Province utilizes, adaptively reuses and enhances accessibility and energy conservation of our heritage properties.

Supports a dynamic tourism industry: By doing so, the Province supports economic growth and jobs across Ontario.

Enables physical activity: Ontario promotes healthy and active lifestyles. This includes encouraging active transportation, such as cycling and participation in sporting activities. Safety in sports is important, and the government is working to prevent and mitigate head injuries.

Builds partnerships and engages with Indigenous communities: The Province is supporting culture and tourism activities within Indigenous communities, raising awareness of the vitality of Indigenous cultures in Ontario and promoting reconciliation.



5.11 CREATING A SUSTAINABLE AND AFFORDABLE ELECTRICITY SYSTEM

A clean, reliable and affordable supply of electricity is key to creating sustainable jobs, fighting climate change and growing the economy. Energy planning does not fall within the IJPA, and energy assets are not included in the provincial asset inventory. Nevertheless, energy assets are still crucial parts of the Province's infrastructure. In addition to Ontario's infrastructure commitment of about \$190 billion over 13 years, the Province is making significant investments in energy. Ontario has:

- invested nearly \$70 billion in the electricity system since 2003, including generation, transmission and distribution assets to ensure that the province has a clean and reliable electricity system
- eliminated Ontario's use of coal for electricity generation, resulting in cleaner electricity
- expanded the use of clean, renewable power
- launched a new \$100-million natural-gas grant program in 2017 to support the building of natural-gas infrastructure to expand services to homes and businesses
- made important investments in nuclear generation — Ontario's nuclear industry generates \$2.5 billion in direct and indirect activity in the province annually
- provided support to lower electricity bills through Ontario's Fair Hydro Plan
- capped rate increases to inflation for the next four years, and provided extra support for low-income families and those living in rural or remote communities or on-reserve First Nations communities

SMART-GRID FUND SUCCESS STORY

FleetCarma, an award-winning Ontario-based company that provides electrical vehicle (EV) products and services, identified two main concerns relating to an increased number of EVs plugging into the electricity grid in the coming years. First, local grid reliability can be compromised if distribution transformers become overloaded in some neighborhoods. Second, during periods of peak electricity demand (e.g., hot summer afternoons), additional EV charging can strain electricity-generation resources.

With the support of the Ontario Ministry of Energy's Smart Grid Fund, the FleetCarma Charge TO pilot project offered a solution to deal with these potential risks by controlling EV charging and thereby protecting local grid infrastructure, all the while taking the needs of EV owners into account.

How Ontario Is Building Better Energy Infrastructure

This fall, the government released a new Long-Term Energy Plan (LTEP), *Delivering Fairness and Choice*, to provide a road map of the Province's energy system over the next 20 years.

The 2017 LTEP focuses on the affordability and reliability of a clean energy supply, giving consumers more choice in the way they use energy, while offering ways to conserve energy and introducing new regulatory protections.



Key initiatives in the 2017 LTEP include:

- maximizing the use of Ontario's existing energy assets, only securing new power when it is needed
- enhancing consumer protection by giving the Ontario Energy Board (OEB) increased regulatory authority over the 326,000 individually-metered condo and apartment units in the province
- working with the OEB to provide people with greater choice in their electricity price plans, by piloting alternatives to the current approach to time-of-use pricing in select communities across the province
- enhancing net metering by allowing more people the opportunity to produce clean energy and use it to power their homes and lower their electricity bills
- allowing utilities to intelligently and cost-effectively integrate electric vehicles into the grid, including smart charging in homes

It has been projected that Ontario's consumers and businesses stand to gain \$6.3 billion in economic, environmental and reliability benefits if Ontario utilities invest in smart-grid technologies that will modernize distribution.



However, there are barriers standing in the way of modernization, and these barriers inhibit the domestic uptake of smart-grid technologies. The government will address these barriers as it implements the Long-Term Energy Plan, with a focus on creating the right environment for utilities to make investments in the smart grid where it makes sense. The goal is for utilities to modernize their systems and businesses in a way that improves efficiency and performance, lowers costs and gives customers more choice in how they participate in the energy system.

Where feasible, Ontario is supporting the expansion of the transmission grid to remote First Nations communities in northwestern Ontario, to reduce their reliance on diesel-powered generation. This initiative will support social and economic development for

remote communities by increasing their access to clean and reliable power. Communities will be free from electrical load restrictions that limit housing and economic development and will reap environmental benefits (such as a reduction in GHG emissions and diesel spills). The Province has selected Wataynikaneyap Power L.P. as the transmitter for connecting 16 of these communities to the electricity grid, and has designated this project a priority. The Wataynikaneyap Power project is undergoing environmental assessments and will be submitting a Leave to Construct application to the Ontario Energy Board for regulatory approval to commence construction.



INDIGENOUS COMMUNITIES ARE CRITICAL PARTNERS IN ONTARIO'S ENERGY SECTOR

First Nations and Métis communities across the province are leading or involved in renewable-generation, transmission and conservation projects, and many are also engaged in community energy planning.

In Ontario, nearly 60 First Nations and Métis communities and groups are leading or partnering in more than 600 wind, solar and hydroelectric projects, largely as a result of incentives from Ontario renewable-energy programs.

In total, these projects have a contracted capacity of over 2,200 megawatts of clean energy.

ONTARIO'S VISION FOR THE FUTURE OF ENERGY

Generates clean and sustainable energy:

Ontario is developing renewable energy sources, while encouraging the development of a clean-energy economy for the future.

Ensures affordability and supports fairness:

The government is supporting fairness and affordability across Ontario.

Fosters a conservation-oriented culture:

Conservation saves energy and money. This can be pursued through public education, retrofits and incentive programs.

Provides reliable energy: Dependable supply ensures families, communities and businesses have the energy they need to prosper.

Supports the participation of Indigenous communities:

Indigenous communities participate in new generation and transmission projects, and in delivering conservation and community energy-planning initiatives.



CONCLUSION

MOVING FORWARD

Ontario's Long-Term Infrastructure Plan is a living plan. The Province will monitor its implementation on an ongoing basis to identify what is and isn't working well, and will use that information to make any changes and release a new plan — at least every five years.

The Province is committed to meeting the IJPA requirements by the legislated deadline of May 2019. Ontario will also transform Ontario's infrastructure-planning and delivery process to achieve better outcomes, and will integrate life-cycle assessment to better understand the environmental impact of the government's investments. The Province is working to explore enhancements to the AFP delivery model, as well as other innovative made-in-Ontario solutions. It will work towards developing Community Benefits Pilot Projects to inform a future policy framework on community benefits.

The government will develop a broadband strategy that will outline a vision for broadband connectivity, identify key priorities and outline a roadmap to achieving them. The government will also continue to support co-located services to better meet community needs of the people of Ontario through developing a Social Purpose Real Estate strategy.

Ultimately, the goal of Ontario's infrastructure investments is to deliver better access to, and quality of, services across the province. Ontario's priority is to continue its significant investment in infrastructure to build a stronger economy, create jobs, build strong communities and enhance the quality of life for all Ontario residents.







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