



Province of  
Ontario

Green Bond  
Program

January 2017

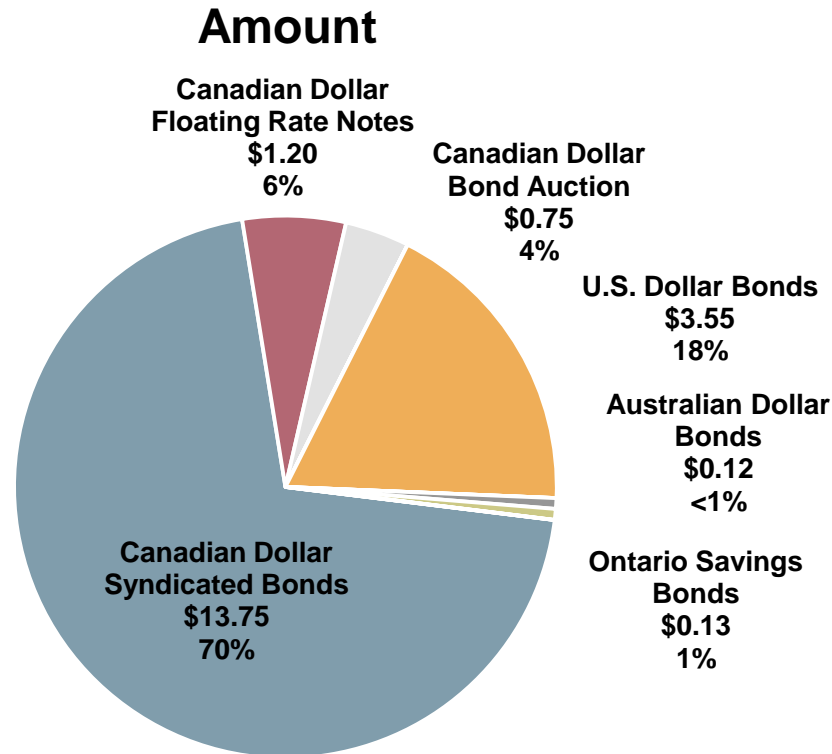
# Province of Ontario Long-Term Borrowing Program

- Ontario's borrowing program has a domestic focus, but also incorporates international financing to diversify and expand its investor base.
- Ontario's borrowing requirements have been declining, reflecting lower deficits, prefunding and term extension of borrowing in recent years.
- The 2016-17 long-term borrowing requirement of \$23.8 billion is the lowest requirement since 2008-09.
- The Province's Green Bond program commenced in 2014, and supports Ontario's infrastructure spending plan of about \$160 billion over 12 years starting in 2014-15.
- Ontario remains committed to the Green Bond market, and expects to continue to access the Green Bond market on an annual basis.
- Ontario is currently the largest issuer of Canadian dollar Green Bonds, with two outstanding green issues totalling \$1.25 billion. New issuers and investors continue to enter the market.

# 2016–17 Borrowing Completed: \$19.5 Billion

## Types of Canadian Dollar Bonds Issued

- Syndicated bonds
- Medium-term notes
- Floating rate notes
- Bond auctions
- Real return bonds
- Green Bonds
- Ontario Savings Bonds



**2016–17 Total Long-Term Borrowing Requirement: \$23.8B**

**Borrowing Completed: \$19.5B (82% Complete)**

**Ahead/(Behind) Even Pace: Even Pace**

**Canadian Dollar: 81%**

**Foreign Currencies: 19%**

**Average Term: 16.0 years**

*Note: As of January 20, 2017.*

# Province of Ontario Green Bonds

**The Province of Ontario intends to issue its third Green Bond in the near future, subject to market conditions.**

- Ontario's Green Bonds:
  - Carry the full faith and credit of the Province of Ontario.
  - Rank *pari passu* with Ontario's other bonds and are payable without any preference or priority.
  - Are direct unsecured obligations of the Province of Ontario and investors do not assume any specific risk related to the funded projects.
  - Payments of principal and interest on the bonds will be a charge on and payable out of the Consolidated Revenue Fund of Ontario.

# Green Bond Framework and Use of Proceeds

- Eligible projects fall into the following five categories identified in the Province of Ontario's Green Bond Framework, excluding fossil fuel and nuclear energy projects:
  - Clean transportation;
  - Energy efficiency and conservation;
  - Clean energy and technology;
  - Forestry, agriculture and land management; and
  - Climate adaptation and resilience.
- Green Bond proceeds are paid into the Consolidated Revenue Fund of Ontario. An amount equal to the net proceeds of each Green Bond issue is recorded in a designated account in the Province of Ontario's financial records. These designated accounts are used to track the use and allocation of funds to eligible projects.
- So long as the bonds are outstanding and the designated accounts have a positive balance, amounts are deducted from these accounts as funds are allocated to eligible projects.

# Assurances and Features

- Ontario's Green Bond Framework has been developed in consultation with the Center for International Climate and Environmental Research – Oslo (CICERO).
- Ontario's Green Bond program aligns with the Green Bond Principles maintained by the International Capital Markets Association, with Ontario being a member of the Green Bond Principles Group.
- An assurance audit is performed by the Auditor General of Ontario verifying amounts allocated to selected projects and tracking the amount of Green Bond proceeds.
- Proceeds are invested in short-term Government of Canada securities as part of the Consolidated Revenue Fund.
- An annual Newsletter is published reporting on the selected projects, their funding, progress and environmental performance.
- Ontario's previous Green Bonds have met the standards to be included in the following Green Bond indices: Barclays MSCI Green Bond Index; BofA Merrill Lynch Green Bond Index; S&P Green Bond Index; and Solactive Green Bond Index.

# Process for Project Evaluation and Selection

- The selection of eligible green projects is done on behalf of the Province by Ontario Financing Authority (OFA) staff with advice from the Province's Green Bond Advisory Panel (GBAP).
- The GBAP, which includes staff from various ministries and agencies, including the Ministry of the Environment and Climate Change and the OFA, evaluates and recommends projects for inclusion in Ontario's Green Bond program based on selection criteria including:
  - Environmental project assessment considerations, including measurable results or other performance indicators clearly outlining the environmental benefits and features of each project;
  - Funding requirements that occur within a period of six months prior to and 12 months following the issue of the Green Bond; and
  - An ability to track the progress and funding of the selected projects.
- The process can be summarized as:



# Eligible Projects

- A basket of projects, including the 12 projects below, have been selected as eligible and are expected to receive funding from the next Green Bond.
- This basket of projects allows a level of funding flexibility should some of the chosen projects experience different spending patterns than those currently forecast.

Project Name	Framework Category	Indicative Funding Allocation (\$ Millions)
Regional Express Rail	Clean Transportation	400
Eglinton Crosstown LRT	Clean Transportation	300
vivaNext Bus Rapid Transit	Clean Transportation	50
Finch West LRT	Clean Transportation	10
Hamilton LRT	Clean Transportation	3
Hurontario LRT	Clean Transportation	6
ErinoakKids Centre for Treatment and Development	Energy Efficiency & Conservation	163
St. Joseph's Healthcare Hamilton – West 5 <sup>th</sup>	Energy Efficiency & Conservation	8
St. Joseph's Healthcare – London and St. Thomas	Energy Efficiency & Conservation	8
Waypoint Centre for Mental Health	Energy Efficiency & Conservation	3
Centre for Addiction and Mental Health – Queen Street	Energy Efficiency & Conservation	2
Woodstock General Hospital	Energy Efficiency & Conservation	5
<b>Total</b>		<b>958</b>



# 1-Regional Express Rail

- In 2015, the Province of Ontario committed \$13.5 billion for extensive rail improvements through the GO system, known as the Regional Express Rail (RER) program. Metrolinx is currently implementing RER, which will bring faster and more frequent GO train service across the Greater Toronto and Hamilton Area (GTHA).
- In 2015, RER was selected as a green project to receive funding from Ontario's second Green Bond issue.
- RER will build on all the expansion already underway and transform the region's transportation system by providing better and more frequent service.
- To enable RER, a range of projects including track construction, train control/signals systems improvements, grade separations, vehicle overhaul, train shed restoration and station rehabilitation are required. Many of these works are already underway in communities throughout the GTHA.
- Five GO corridors will be upgraded to provide service every 15 minutes (or better) in both directions throughout the day. Implementing RER is expected to add 4,500 new weekly train trips, for a total of 6,000 weekly trips, and increase GO ridership by 140 per cent over the next fifteen years.
- Electrification of the GO train system in core areas will contribute towards a significant reduction in greenhouse gas (GHG) emissions. Expanding and electrifying the rail network will provide a more environmentally friendly alternative to the existing diesel trains.
- GO train ridership in 2014 was approximately 54 million annual trips. With the implementation of RER on five corridors, ridership is forecast to climb to 127 million annual trips over the next fifteen years, thereby helping to ease congestion and reduce the number of vehicles on the road.
- New GO stations and facilities are aiming to achieve LEED Gold certification, and are exploring renewable energy opportunities, including the installation of electric vehicle charging stations.
- Electric trains are able to accelerate faster and travel at top speeds for longer, cutting journey times for some trips by up to 20 per cent.



# 2-Eglinton Crosstown Light Rail Transit (LRT)

- The Eglinton Crosstown LRT project, which is being implemented by Metrolinx, is a \$5.3 billion (2010\$) investment by the Government of Ontario to expand transit in Toronto.
- The Crosstown will be an efficient and reliable transit option for people, which will ease traffic congestion and provide an environmentally friendly travel alternative. The LRT vehicles are electric powered and produce near-zero emissions, making them an attractive choice for the environment.
- It is the largest transit expansion in the history of the region and is currently under construction with scheduled completion in 2021. The Eglinton Crosstown LRT was selected in 2014 as the first green project to receive funding from Ontario's inaugural Green Bond issue, and also received funding from Ontario's second Green Bond issue.
- The new LRT line will bring 19 new kilometres of rapid transit to Toronto, connecting Mount Dennis in the west to Toronto Transit Commission's (TTC) Kennedy Station in the east, and will include a 10 km underground tunnel in its central section between Keele Street and Laird Avenue.
- It will have 25 stations and stops, and link to 54 bus routes, three subway stations and three GO Transit lines. All 25 stations and stops are aiming to achieve the Toronto Green Standard, and will be designed to maximize daytime lighting. The Eglinton Crosstown maintenance and storage facility is aiming to achieve LEED Silver certification or higher. Eglinton Crosstown is projected to have 50 million boardings per year in 2031.
- The Eglinton Crosstown will bring fast, reliable and convenient transit service to passengers across Toronto. It will carry more passengers and is estimated to move up to 60 per cent faster than the existing bus service on Eglinton Avenue.
- The underground portion of the Eglinton Crosstown will reduce congestion and increase street level capacity by reducing current bus traffic across the same line.



# 3-vivaNext Bus Rapid Transit (BRT)

- In partnership with the Regional Municipality of York, Metrolinx is improving rapid transit in York Region through the vivaNext BRT program. The construction of dedicated bus lanes in the centre of the road, known as rapidways, will allow rapid transit buses to move out of congested traffic.
- The York vivaNext BRT program is a \$1.4 billion (2008\$) investment by the Government of Ontario to expand transit in York Region. In 2015, the vivaNext BRT was selected as a green project to receive funding from Ontario's second Green Bond issue.
- Improving access to public transit and new mobility options such as the vivaNext BRT will contribute to decreasing GHG emissions and Criteria Air Contaminants (CAC), manage traffic congestion, and encourage mode shift from auto trips to transit trips.
- Construction of the York vivaNext BRT program is well underway. Two BRT rapidway sections in the system, Highway 7 East and Davis Drive, are in service. The remaining two BRT rapidways, Highway 7 West and Yonge Street, are currently under construction to be completed by 2020.
- The new rapidways will bring 34.7 km of planned segregated BRT routes. They will provide more reliable service to travellers, with more frequent service of two to five minutes between arrivals in peak periods, and connections with GO Transit, regional transit and future extensions of the subway system.
- Once complete, rapidways will improve flow for existing traffic, adding left-turn lanes where none previously existed, removing buses from general lanes and diverting auto trips onto transit.



# 4-Finch West LRT

- The Finch West LRT is an 11-kilometre light rail transit line that will run along the surface of Finch Avenue from the new Finch West Subway Station on the Toronto-York Spadina Subway Extension at Keele Street to Humber College.
- It will provide rapid transit to neighbourhoods that need it the most; it will travel through two of the City of Toronto's 13 identified Neighbourhood Improvement Areas (NIAs) Jamestown and Jane/Finch.
- The Finch West LRT is a \$1 billion (2010\$) investment from the Ontario government to expand transit in Toronto.
- The projected ridership of the Finch West LRT corridor is estimated to be 2,300 - 2,800 passengers per hour in the peak direction by 2031. LRT cars can be removed or added easily, thus providing the flexibility to accommodate ridership demands.
- The Finch West LRT will carry passengers in dedicated right-of-way transit lanes separate from regular traffic, as well as priority signaling at intersections. These two components ensure that the Finch West LRT is reliable and that travel times are more certain.
- The Finch West LRT will have 18 stops through northwest Toronto, including an underground interchange station at Keele Street and a below-grade stop at Humber College. It will have rapid transit connections from Finch West Station to the new Toronto-York subway extension.
- The replacement of the current Finch West bus fleet with electrically powered light rail trains in the corridor is expected to reduce pollutants attributed to diesel-powered transit vehicles, especially particulate matter. The LRT will produce near-zero emissions, making it an attractive choice for the environment.

# 5-Hamilton LRT

- Together with the City of Hamilton, Metrolinx is planning to build the Hamilton LRT: a new 13-kilometre LRT line that will run through downtown Hamilton along Main and King streets, and along James Street North to the new West Harbour GO station.
- Hamilton LRT will connect McMaster in the west to Queenston Circle in the east.
- A signature project under the Moving Ontario Forward plan, Hamilton LRT is funded with a \$1 billion (2014\$) commitment from the Province of Ontario, announced by the Premier on May 26, 2015.
- With 14 stops on the B-Line and connections with local transit service, the Lakeshore West GO Transit line and multiple GO Bus routes, Hamilton LRT will drive economic growth and improve connectivity across local communities.
- Hamilton LRT is expected to be in service in 2024. Major construction is scheduled to begin in 2019.
- By 2021, it is estimated that the number of kilometres travelled by automobile will decline by almost 5 million kilometres annually under the most conservative scenario assessed in the 2010 Benefits Case. The LRT will produce near-zero emissions, making it an attractive choice for the environment.





# 6-Hurontario LRT

- The Hurontario LRT project will bring 20 kilometres of fast, reliable, rapid transit to the cities of Mississauga and Brampton along the Hurontario corridor.
- New, modern light rail vehicles will travel in a dedicated right-of-way and serve 22 stops with connections to GO Transit's Milton and Lakeshore West rail lines, Mississauga MiWay, Brampton Züm, and the Mississauga Transitway BRT.
- Funded through a \$1.4 billion (2014\$) commitment from the Province of Ontario, the Hurontario LRT is a signature project of the Moving Ontario Forward plan.
- The Hurontario LRT will be significant benefit to the communities of Mississauga and Brampton, and be an integral component of the GTHA's broader transportation network.
- Metrolinx is working with the cities of Brampton and Mississauga to ready the project for procurement. Construction is scheduled to begin in 2018, with anticipated completion in 2022.
- The LRT will produce near-zero emissions, making it an attractive choice for the environment. Air quality will be improved from a reduction in criteria air contaminants such as particulate matter and sulphur dioxide from exhaust fumes.



# 7-ErinoakKids Centre for Treatment and Development

- The ErinoakKids Centre for Treatment and Development is the largest of Ontario's 20 children's treatment centres, treating almost 13,000 children and youth with physical, developmental and communication disorders, as well as those with autism, and hearing and vision impairment in Peel, Halton and Dufferin counties.
- The new facilities centre will replace ErinoakKids' existing 11 sites while more than doubling the existing treatment therapy space. Key features at each of the three sites will include:
  - Fully accessible playgrounds for recreation, physiotherapy and occupational therapy, gyms – including climbing walls, treatment rooms, therapeutic playrooms, a resource centre for staff and families, a drop-in centre for youth and audiology departments for hearing aid fitting and dispensing.
- The three sites (over 120,000 square feet in Brampton, over 100,000 square feet in Mississauga and nearly 80,000 square feet in Oakville) will allow the agency to serve more clients on an annual basis and will enable ErinoakKids to continue its mission to help children and youth gain optimal levels of independence, learning, health and well-being. They will provide services for children and youth.
- The agency will be seeking LEED Silver certification upon completion of the three new sites.

# 8-St. Joseph's Healthcare Hamilton – West 5th

- The West 5th Campus is an 850,000-square-foot facility that provides specialized mental health services to those suffering from severe mental illness or addiction.
- The project provides additional inpatient beds, expanded outpatient clinics for psychiatry, diagnostic imaging and medical services, along with research and academic spaces.
- Anticipated energy reduction of 15 million kWh per year.
- The facility is LEED Gold certified.
- Anticipated water reduction of 7.1 million litres per year, equivalent to supplying water to 37 Ontario households for a year.
- Storm Water Management System to minimize water pollution. Highly efficient plumbing fixtures to reduce indoor water usage by 20 per cent.
- Mature trees preserved on portions of the Campus with over 500 new trees planted.
- Low emitting materials used during construction to ensure improved indoor environmental quality.
- PVC roof to increase building heat naturally from the sun.
- 90 per cent of construction materials came from landfills and recyclable products.



# 9-St. Joseph's Healthcare – London and St. Thomas

- The St. Joseph's Specialized Mental Healthcare facility in London provides services such as adolescent psychiatry, assessment, geriatric psychiatry, and treatment of concurrent disorders and psychoses.
- The St. Joseph's Forensic Mental Healthcare facility in St. Thomas provides specialized inpatient and outpatient services, including assessment, treatment, outreach and support services to individuals with a mental illness who have come into significant contact with the criminal justice system.
- Anticipated energy reduction of 6.6 million kWh per year.
- The two facilities are LEED Gold certified.

# 10-Waypoint Centre for Mental Health

- Waypoint Centre for Mental Health Care in Penetanguishene replaced the 160-bed Oak Ridge building and the 20-bed Brebeuf building to offer a larger, more modern hospital space for treatment and care of people with mental illness who have come into contact with the law.
- The new Atrium Building was built with environmentally friendly design features in order to achieve Gold certification according to the LEED green building rating system, as part of the government's commitment to reduce energy use and GHG emissions.
- Waypoint aimed to achieve Gold level certification through focus on healthy indoor environments, reduced GHG emissions, efficient use of energy, water and other resources.
- Anticipated energy reduction of 540,000 kWh per year.
- The new building is LEED Gold certified.

# 11-Centre for Addiction and Mental Health

- The Centre for Addiction and Mental Health (CAMH) project involves redevelopment at the CAMH Queen Street site in Toronto.
- All three Phase 1B buildings were designed and built with environmentally responsible and sustainable features and have achieved LEED Gold certification.
- Anticipated energy reduction of 20 million kWh per year.
- Anticipated water reduction of 4.3 million litres per year, equivalent to supplying water to 22 Ontario households for a year.
- Secure underground bicycle parking and change/shower facilities to promote bicycle use and commuting have been added.
- Green spaces, both public and exclusive to clients, have been incorporated into the site, with large-growing shade trees planted throughout the site.

# 12-Woodstock General Hospital

- At three-storeys high and 350,000 square feet, the new Hospital is more than double the size of the previous facility. In replacing the previous hospital, which opened in 1895 and has 113 beds, the new hospital allows health care professionals to offer a full-range of clinical services and programs, including:
  - physiotherapy and rehabilitation services;
  - cardio-respiratory services;
  - pharmacy and laboratory services;
  - a new inpatient rehabilitation program, in partnership with community agencies;
  - diagnostic Imaging (DI) department using the latest in digital imaging technologies for diagnosis and to reduce patient wait times; and
  - maternal/child/women's health unit.
- The new Hospital provides patients and staff with a high-quality healing environment and the latest technology in patient care and communications.
- The Woodstock Hospital was designed with a host of environmental and energy best practices in mind.
- The Hospital is LEED Silver certified. It was the first hospital to achieve LEED Silver certification in Ontario.

# Summary

- Ontario is planning to issue its third Green Bond in the near future, subject to market conditions.
- The issue will carry the full faith and credit of the Province of Ontario.
- Green Bonds are direct unsecured obligations of the Province of Ontario and investors do not assume any specific risk related to the funded projects.
- The eligible projects which are expected to receive funding from the next issue will include a basket of projects with an emphasis on clean transportation and energy efficiency and conservation.
- Ontario remains committed to the Green Bond market, and expects to continue to access the Green Bond market on an annual basis.

# Appendix

# Ontario's Green Bond Issues

	<b>Inaugural Green Bond (1.75%, October 9, 2018)</b>	<b>Second Green Bond (1.95%, January 27, 2023)</b>
<b>Size:</b>	CAD 500 Million	CAD 750 Million
<b>Pricing Date:</b>	October 2, 2014	January 22, 2016
<b>Format and Currency:</b>	Global Canadian dollar	Global Canadian dollar
<b>Listing:</b>	Luxembourg Stock Exchange Euro MTF Luxembourg Green Exchange	Luxembourg Stock Exchange Euro MTF Luxembourg Green Exchange
<b>Green Bond Indices<sup>(1)</sup>:</b>	Barclays MSCI Green Bond Index BofA Merrill Lynch Green Bond Index S&P Green Bond Index Solactive Green Bond Index	Barclays MSCI Green Bond Index BofA Merrill Lynch Green Bond Index S&P Green Bond Index Solactive Green Bond Index
<b>Project Categories:</b>	Clean Transportation (1 project)	Clean Transportation (3 projects); Energy Efficiency & Conservation (5 projects)
<b>Green Mandates/ UN PRI Signatories<sup>(2)</sup>:</b>	85%	70%
<b>Domestic/ Foreign Investors<sup>(3)</sup>:</b>	83% / 17%	65% / 35%
<b>Joint Lead Managers:</b>	BofAML, CIBC, HSBC, RBC	BofAML, BMO, HSBC, RBC, TD

(1) As of the date hereof, Present inclusion of any Green Bonds in such indices is not indicative of future inclusion (including for any Green Bonds issued after the date hereof).

(2) As of the original issue date. Represents the percentage of investors with green investing mandates or investors that are signatories to the United Nations Principles for Responsible Investment.

(3) As of the original issue date.

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