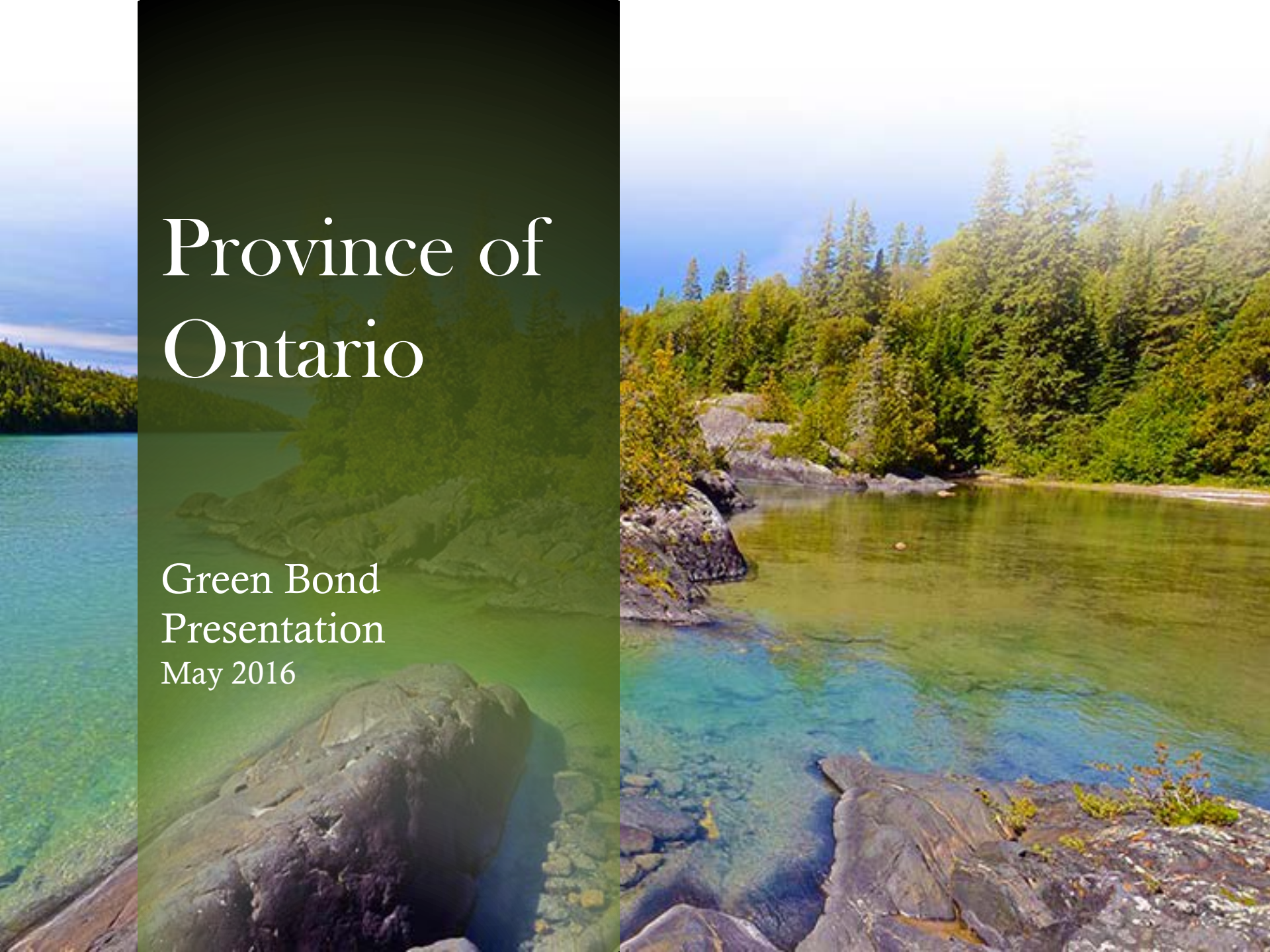




Province of Ontario

Green Bond
Presentation
May 2016



Evolution of Ontario's Green Bond Program

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- Ontario Green Bond Issues Summary
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Ontario's Low-Carbon Economy

In 2015, the Province released its Climate Change Strategy, setting out Ontario's vision for combating climate change and achieving its greenhouse gas emissions reduction target of 80 per cent below 1990 levels by 2050. The following initiatives fit into the strategy:

Cap-and-Trade Program

- The Province is proposing to implement a cap-and-trade program that would place a cap on greenhouse gas emissions, create limited tradable emissions allowances for a given period and require covered emitters to hold allowances equal to their emissions, starting in 2017. The program would reward those that reduce their emissions by enabling them to sell their excess allowances in the carbon market.
- Proceeds are projected to be \$478 million in 2016–17 and \$1.8–\$1.9 billion annually, starting in 2017–18.

Green Investment Fund

- In Fall 2015, the government announced a \$325 million Green Investment Fund to commit to projects that will fight climate change, boost the economy and create jobs. A large portion of the fund will go towards helping homeowners reduce their energy bills.

Green Bond Program

- In 2014, Ontario developed a green bond framework that aligns with its environmental policies and climate objectives. To date, Ontario has issued two Canadian dollar Green Bonds.



Ontario's Green Bond Issues Summary

	Inaugural Green Bond (1.75%, October 9, 2018)	Second Green Bond (1.95%, January 27, 2023)
Format:	Global Canadian dollar	Global Canadian dollar
Size:	CAD 500 Million	CAD 750 Million
Pricing Date:	October 2, 2014	January 22, 2016
Re-offer spread:	+38 bps over CAN 1.25% September 1, 2018	+103 bps over CAN 2.75% June 1, 2022
Listing:	Luxembourg Stock Exchange	Luxembourg Stock Exchange
Investors:	81	52
Green Mandates/ UN PRI Signatories:	85%	70%
New Ontario Investors:	5	4
New Ontario Canadian dollar Investors:	8	4
Project Categories:	Clean Transportation (1 project)	Clean Transportation (3 projects); Energy Efficiency & Conservation (5 projects)
Joint Bookrunners:	BofAML, CIBC, HSBC, RBC	BofAML, BMO, HSBC, RBC, TD
Green Bond Indices:	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



Deal Size and Tenor

- Increased deal size supported by increased green project capacity.
- Larger issue size for second green bond consistent with Ontario's focus on the liquidity of its bonds.
- A longer tenor provides more opportunities for Ontario to re-open the issue and achieve even greater liquidity.
- Having a second longer term green bond provides some additional choice to investors when considering Ontario's green bond offerings.
- Longer tenor for second green bond confirms green investors are more comfortable in extending term.
- Term extension provides a better match to the duration of the underlying green projects.



Green Projects

- A basket of eight eligible projects was utilized for the second green bond, compared to one project for the first issue. The basket approach allows more funding flexibility should some of the chosen projects experience different spending patterns than anticipated.
- Spending assumptions were extremely conservative to ensure proceeds are disbursed in a timely manner.
- The number of framework categories utilized increased to include Energy Efficiency & Conservation in addition to Clean Transportation.
- Ontario Ministry involvement in projects expanded to include Ministry of Health and Long-Term Care and Ministry of Training, Colleges and Universities, in addition to the Ministry of Transportation and Metrolinx.
- Some increased geographical diversification with three projects outside the Greater Toronto Area.
- Total Green Bond financing amounts to \$1.25 billion, with the majority of funding allocated to Metrolinx for clean transportation projects.
- To date, all funds from the inaugural Green Bond and \$276.2 million of the funds from the second Green Bond have been disbursed by the Province to specific projects.



Green Projects

Project Name	Eligible Category	Measurable Results	Maximum Funding*
Eglinton Crosstown Light Rail Transit	Clean Transportation	GHG Reduction	\$402M
Regional Express Rail	Clean Transportation	GHG Reduction	\$200M
vivaNext Bus Rapid Transit	Clean Transportation	GHG Reduction	\$100M
Sheridan College Hazel McCallion Campus Expansion – Mississauga	Energy Efficiency & Conservation	Silver LEED Certification	\$68M
St Joseph’s H.C. Hamilton – West 5 th Campus	Energy Efficiency & Conservation	Gold LEED Certification	\$14M
St Joseph’s H.C. – London and St. Thomas	Energy Efficiency & Conservation	Gold LEED Certification	\$5M
Waypoint Centre for Mental Health – Penetanguishene	Energy Efficiency & Conservation	Gold LEED Certification	\$2M
Centre for Addiction and Mental Health – Queen St.	Energy Efficiency & Conservation	Gold LEED Certification	\$2M

*Funding amounts for each project are estimates based on total eligible costs, final amounts provided to each project will be confirmed in the coming year. More details on these projects are included in the Appendix.



Reporting and Assurance

- Ontario's Green Bond Framework was developed in consultation with the Center for International Climate and Environmental Research – Oslo (CICERO).
- In March 2016, the Province of Ontario became a member of the Green Bond Principles maintained by the International Capital Markets Association (ICMA). Ontario's Green Bond program aligns with the Green Bond Principles.
- Ontario's first Green Bond Newsletter was released on December 9, 2015.
 - o It is available on the OFA's website (www.ofina.on.ca) in the Green Bond section.
 - o The Newsletter provides a Green Bond issue transaction summary, an outline of the use of proceeds, an overview of the process for project evaluation and selection, and an update on the project, including an overview of the project, the project status and expected environmental benefits.
 - o It also includes an assurance audit performed by the Auditor General of Ontario, verifying the flow of funds to the projects.



Project Delivery Includes P3 Projects

- Ontario's version of public private partnerships (P3) is called Alternative Financing and Procurement (AFP).
- AFP allows short-term transfer of construction risk (dollar and scheduling risk) to construction consortiums prior to the projects going onto the Province's balance sheet.
- The Province makes small interim payments throughout construction and a large payment to the construction consortium at substantial completion of the project. There are usually also smaller payments over an extended period after substantial completion.
- AFP is becoming a more common method of project delivery for Ontario. For example, for the second green bond, about \$277 million of the Eglinton Crosstown project and all of the hospital projects use the AFP Funding model.
- Utilizing AFP funded projects provides a bigger pipeline to support Ontario's Green Bond program.



Green Project Pipeline

- Ontario is making public infrastructure investments of more than \$137 billion over the next 10 years, or about \$160 billion over 12 years, starting in 2014–15.
 - About \$31.5 billion over the next 10 years will go towards the Province's *Moving Ontario Forward* plan for public transit, transportation and other priority infrastructure projects.



- Assuming adequate demand, Ontario’s green project pipeline should easily support an ongoing Green Bond program for many years to come.
- The Province is looking to further diversify the types of projects and their geographic locations where possible.



Syndicate Structure and Dealer Engagement

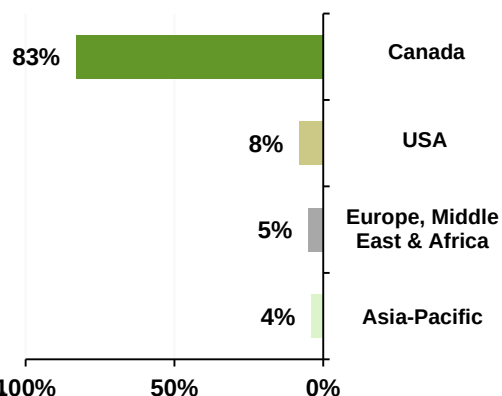
- Canadian dollar green bonds utilize Ontario's domestic underwriting syndicate to optimize both primary issuance and secondary market-making.
- The 12 dealers in Ontario's domestic underwriting syndicate are the strongest in trading Ontario Canadian dollar bonds and are highly motivated to provide market-making through the annual syndicate evaluation process.
- Ontario's 12 domestic syndicate members were asked to submit a written proposal on the best approach for issuing a Green Bond for both Green Bond issues.
- Evaluation of the written proposals for each Green Bond determined the assignment of syndicate positions for the dealers.
- Dealer proposals were evaluated against a number of criteria:
 - o Term Selection, Size and Pricing
 - o Marketing and Investor Outreach
 - o Secondary Ontario Green Bond Trading
 - o Syndicate Structure/ Issuance Process
 - o Direct Ontario Green Bond Investment
 - o Green Credentials
 - o Documentation
 - o Overall Quality of Presentation
- The first Green Bond had 3 tiers of dealer participation with 4 dealers in the Lead group, while the second Green Bond had 4 tiers of participation and 5 dealers in the Lead group.
- The second Green Bond employed an exempt list approach. Feedback from investors on whether this was an improvement, relative to our first issue, would be appreciated.

Investor Demand

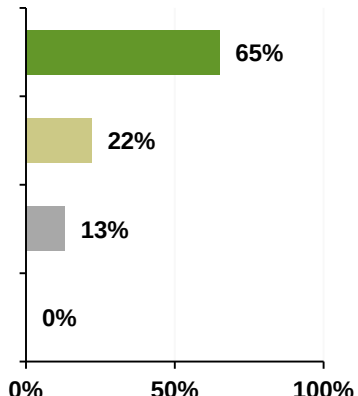
- Global offering format was used for both issues to leverage and facilitate international investor interest. Foreign investor participation increased from 17 per cent to 35 per cent.
- Demand remained strongly driven by investors with Green mandates and/or UN PRI signatories, representing 85 per cent of overall sales in the first issue and 70 per cent in the second.
- Ontario Green Bonds can also be an attractive investment for non-green investors.
- Both deals added new investors, helping broaden Ontario's investor base.
- Both Green Bonds were available to retail investors through Canadian financial institutions.

Demand by Region

Inaugural Green Bond

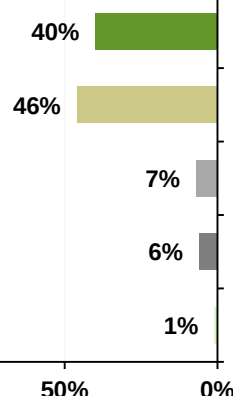


Second Green Bond

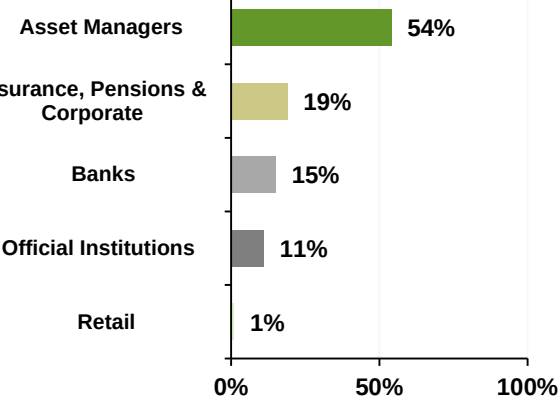


Demand by Investor Type

Inaugural Green Bond



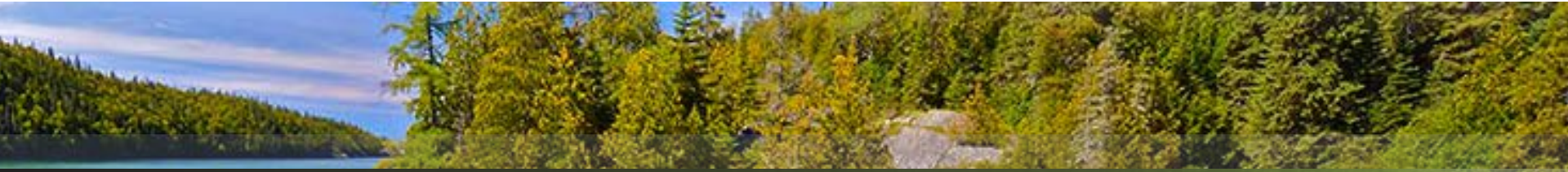
Second Green Bond





Looking Ahead

- Green project pipeline likely sufficient to support annual Green Bond issuance of about \$750 million.
- We will look to do our third green bond later this fiscal year (likely fall or early winter).
- Ontario remains supportive of the Canadian dollar Green Bond market and our next issue will likely be in that market once again.
- As we monitor and access foreign markets for our overall borrowing program, Ontario may explore Green Bond opportunities in foreign markets as well.



Summary

- Ontario remains committed to the Green Bond market and expects to continue accessing it on a regular basis going forward.
- Adjustments to our Green Bond program have been made over the past two years, but the changes have been fairly minor and have reflected a desire to generally expand and broaden the program.
- The Province will continue to be responsive to market developments and will look to respond to investor feedback and adjust the program where it makes sense.
- The Green Bond market continues to evolve and we hope to evolve our program along with it.



Appendix

Eglinton Crosstown Light Rail Transit

- The Eglinton Crosstown Light Rail Transit (LRT) is a \$5.3 billion (2010\$) investment from the Government of Ontario to expand transit in Toronto.
- It is the largest transit expansion in the history of the region and is currently under construction, with scheduled completion in 2021. Work currently underway includes Design, Tunneling and Alternative Financing Procurement (AFP) scope of works.
- This 19 km corridor will have 25 stations and stops, and will link to 54 bus routes, three subway stations and three GO Transit lines.
- The new, expanded transit service will move people up to 60 per cent faster than current bus services. Projected ridership is 5,400 passengers per hour in the peak direction by 2031, and the capacity of the Crosstown vehicles is 15,000 passengers per hour per direction.
- The Eglinton Crosstown LRT project was selected as the first project to receive Green Bond financing for \$500 million in 2014.





Eglinton Crosstown Light Rail Transit

- The Crosstown light rail transit vehicles are electric powered and produce near-zero emissions, making them the right choice for the environment.
- The Eglinton Maintenance and Storage facility aims to achieve Silver level certification according to the LEED® green building rating system. All stations and stops aim to achieve the Toronto Green Standard Tier 1 for environmental performance.
- Through a collaborative initiative, a Community Benefits framework has been developed for the project, which targets employment, apprenticeship and local supplier and social procurement opportunities.
- The Crosstown LRT will contribute to reduced greenhouse gas (GHG) emissions from the lower emissions profile of electric rapid transit versus the existing bus service, as well as the mode shift expected from auto users shifting to public transit.
- The Crosstown will also move people more easily and more quickly to their destinations, which will manage traffic congestion and provide an excellent, environmentally – friendly travel alternative.

Regional Express Rail

- Regional Express Rail (RER) is a \$13.5 billion (2014\$) investment from the Government of Ontario to transform the GO rail network.
- Through RER, the GO rail network will be upgraded to feature: frequent, all-day service, faster trip times, and electric trains.
- Construction on RER projects is currently underway, with anticipated completion by 2024. The infrastructure and service expansion is expected to provide:
 - More than a doubling of peak service and a quadrupling of off-peak service compared to today;
 - Reduced journey times for some cross-region transit trips by as much as 50 per cent; and
 - A wider range of travel options for Greater Toronto and Hamilton Area (GTHA) residents.





Regional Express Rail

- Once complete, RER will provide: significant time savings through faster, more frequent transit options; improved access to employment, education and services; manage congestion; and a mode shift from auto trips to transit trips.
- Electrification of five of the GO Transit corridors is a key component of RER and will be phased in, starting with UP Express. Electrification was announced in April 2015, with completion of Environmental Assessments anticipated by the end of 2016.
- Through more frequent, and electrified service, RER will lead to a reduction in GHG emissions due to the conversion of the trains from diesel to electric propulsion, the resulting higher ridership, and mode shift from auto trips to transit trips.
- All new GO Transit stations and facilities built as part of RER will target achievement of Gold level certification according to the LEED® green building rating system.

vivaNext Bus Rapid Transit

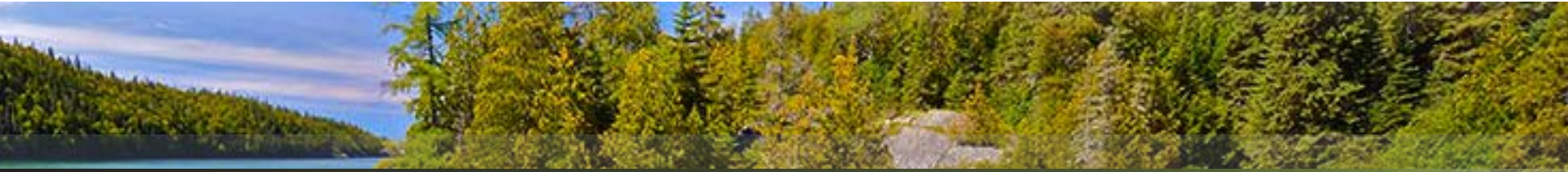
- The vivaNext Bus Rapid Transit (BRT) is a \$1.4 billion (2010\$) investment from the Government of Ontario to expand transit in York Region.
- vivaNext BRT is currently under construction with scheduled completion in 2019. Nearly 9 km of rapidways are already in service with three segments open in Newmarket, Markham and Richmond Hill.
- This 34.7 km bus rapid transit expansion will include 38 new Viva stations and stops. Viva vehicles will travel in dedicated bus lanes in the centre of the road for the majority of the route.
- vivaNext BRT will connect with other regional rapid transit including GO Transit, Brampton Züm, and the TTC Spadina subway extension.





vivaNext Bus Rapid Transit

- The new vivaNext rapidways will support improved community connectivity and access to services, education, and retail or businesses by making it easier to travel in and around York Region.
- In July 2015, the vivaNext BRT project opened an Operations, Maintenance and Storage Facility built to the LEED® green building system's Silver level certification. This facility will support the growing fleet of Viva vehicles.
- Improving access to public transit and new mobility options such as the vivaNext BRT will contribute to decreasing GHG and Criteria Air Contaminants (CAC), manage traffic congestion, and encourage mode shift from auto trips to transit trips.



Sheridan College Hazel McCallion Campus Expansion

- Sheridan College Hazel McCallion Campus Expansion project is a joint investment by the Government of Ontario and Sheridan College, which includes substantial green features.
- Expansion will accommodate 3,200 full-time students and is currently under construction with scheduled completion in May 2016.
- The new facility will be 220,000 square feet within the urban core of Mississauga, and will include new classrooms, studios, laboratories and production spaces. The new building will also house a gallery space to showcase student creativity and innovation.
- This College expansion project will be the first postsecondary education asset in Canada to be funded using green bond proceeds.



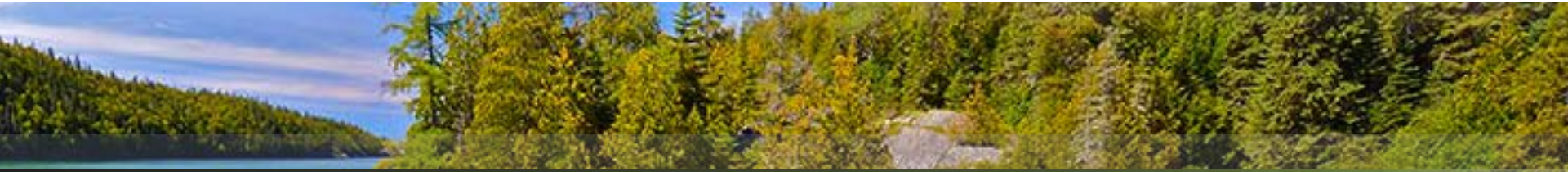
Sheridan College Hazel McCallion Campus Expansion

Green highlights of the expansion project:

- Building is being constructed to meet a Sheridan-mandated maximum annual energy consumption of 100 kWh/m²/year. This simple metric drove bidder innovation across many disciplines.
 - Leadership in Energy and Environmental Design (LEED®) Silver certification, with energy performance in the top one per cent of all LEED® buildings.
 - One of the most energy-efficient academic buildings in North America.
- LED lighting & intelligent lighting controls throughout the facility.
- Active chilled beams, radiant panels, and in-slab heating for cooling/heating with dedicated outdoor air.
- Solar thermal collectors and waste heat recovery offset hot water heating by natural gas.
- High-quality building envelope reduces thermal losses and solar gain through windows.

Other resource efficiency measures:

- Stormwater collected in underground cistern and used as grey water throughout the building.
- Zero Waste Sheridan three-colour bin system implemented throughout facility.
- Materials selected per LEED® criteria for sourcing, recycled content and toxicity.
- Building is within 400 meters of major public transportation node with routes serving the entire region.



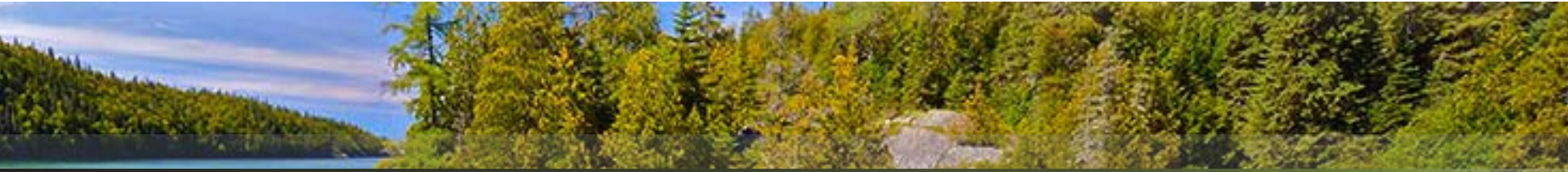
St. Joseph's Healthcare Hamilton - West 5th

- This project falls under the Energy Efficiency & Conservation category.
- 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.
- The project was certified with Gold level certification according to the LEED® green building rating system, and includes the following features:
 - o Storm Water Management System to minimize water pollution;
 - o Highly efficient plumbing fixtures to reduce indoor water usage by 20 per cent;
 - o Preservation of mature trees on portions of the Campus with over 500 new trees planted;
 - o Low emitting materials used during construction to ensure improved indoor environmental quality;
 - o PVC roof to increase building heat naturally from the sun; and
 - o 90 per cent of construction materials come from landfills and recyclable products.



St. Joseph's Health Care – London and St. Thomas

- This project falls under the Energy Efficiency & Conservation category.
- The St. Joseph's Specialized Mental Health Care facility in London provides services such as adolescent psychiatry, assessment, concurrent disorders, geriatric psychiatry and psychosis.
- The St. Joseph's Forensic Mental Health Care 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.
- The St. Joseph's Health Care Specialized Mental Health Care and Forensic Mental Health Care facilities have been designed to meet the highest environmental sustainability standards, while at the same time, supporting individuals on their path to recovery. Both projects feature environmentally responsible and sustainable features and have achieved Gold level certification according to the LEED® green building rating system.



Waypoint Centre for Mental Health

- This project falls under the Energy Efficiency & Conservation category.
- The Waypoint Centre for Mental Health Care in Penetanguishene replaced the 160-bed Oak Ridge facility and the 20-bed Brebeuf building to offer a larger, more modern space for treatment and care of people with mental health disorders who have been involved with the criminal justice system.
- Waypoint 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 greenhouse gas emissions.
- Waypoint aims to achieve Gold level certification through focus on healthy indoor environments, reduced greenhouse gas emissions, efficient use of energy, water and other resources.



Centre for Addiction and Mental Health - Phase 1B

- This project falls under the Energy Efficiency & Conservation category.
- The Centre for Addiction and Mental Health project involves redevelopment at the Centre for Addiction and Mental Health (CAMH) Queen Street site in Toronto.
- All three Phase 1B buildings have been designed with environmentally responsible and sustainable features in order to achieve Gold certification according to the LEED® green building rating system.
- With Phase 1B of the project:
 - o CAMH will see a reduction of nearly 27 per cent in energy costs;
 - o Its reduced greenhouse gas emissions will be like taking 220 cars off the road;
 - o Secure underground bicycle parking and change/shower facilities to promote bicycle use and commuting have been added; and
 - o Green spaces, both public and exclusive to clients, have been incorporated into the site, with large-growing shade trees planted throughout the site.



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