

**City of Ottawa Green Debenture
2021 Treasurer's Information Report**

City of Ottawa Green Debentures

Key Features

City of Ottawa Green Debentures share the same characteristics as conventional debentures and are ranked concurrently and equally in respect of payment of principal and interest with all other debentures of the City.

Eligible Projects

The City of Ottawa has developed a Green Debenture Framework under which it issues Green Debentures. The Framework identifies eight eligible categories to which bond proceeds may be directed:

- renewable energy
- energy efficiency
- pollution prevention and control
- clean transportation
- sustainable water management
- sustainable management of natural resources
- climate change adaptation and resilience
- green buildings.

The net proceeds of each Green Debenture issued under the Framework will be used to finance, in whole or in part, capital projects that promote environmental sustainability across the City. Specific objectives for these projects will be to mitigate and adapt to the effects of climate change, reduce greenhouse gas (GHG) emissions, and promote the transition to a low-carbon economy.

Assurances

The City has engaged Sustainalytics, an independent sustainability rating firm, to provide a second opinion on its Green Debenture Framework and the framework's environmental credentials as it relates to Green Bond Principles.

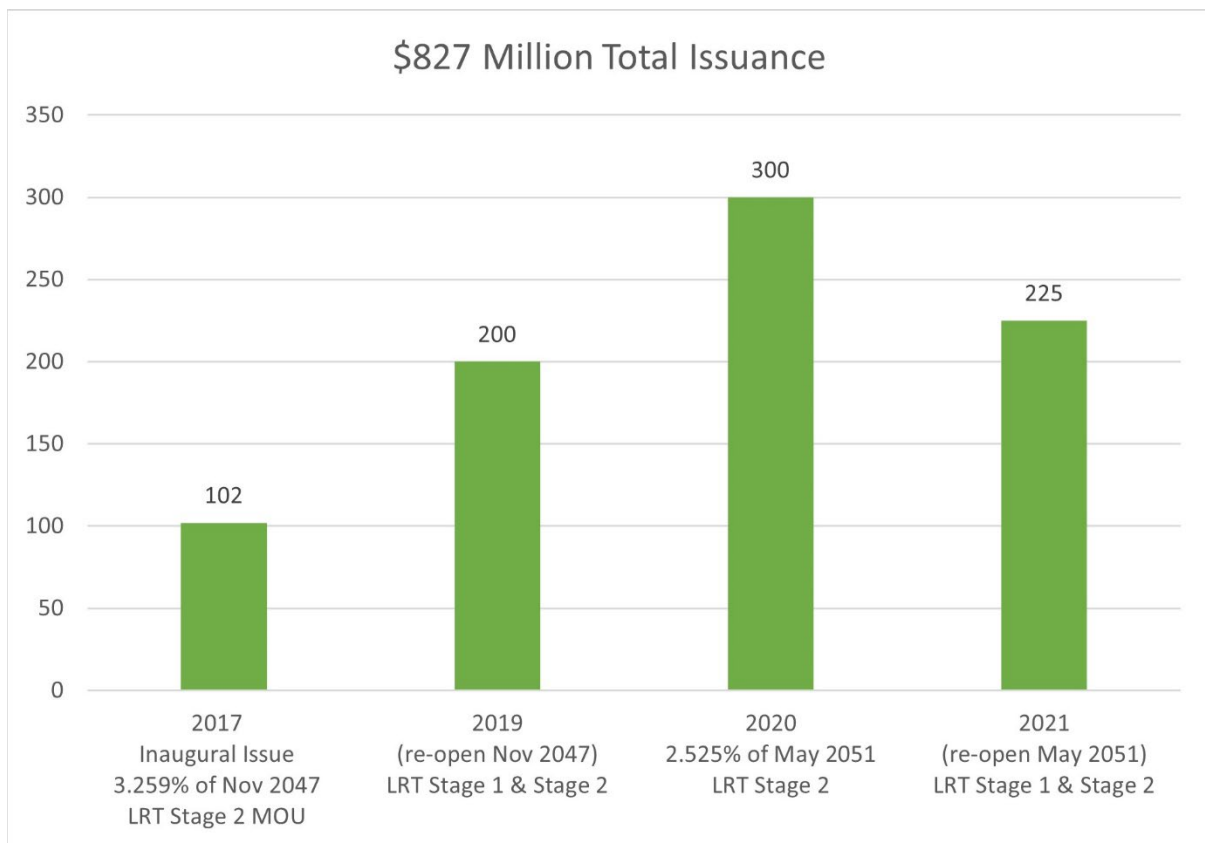
Alignment with Green Bond Principles

Sustainalytics is of the view that the City of Ottawa's Green Debenture Framework is aligned with the four pillars of the Green Bond Principles 2017, which addresses use of proceeds, process for project evaluation and selection, management of proceeds, and reporting. Based on the above considerations, Sustainalytics is of the view that the City of Ottawa's Green Debenture Framework is robust and credible.

City of Ottawa Green Debenture Issuance

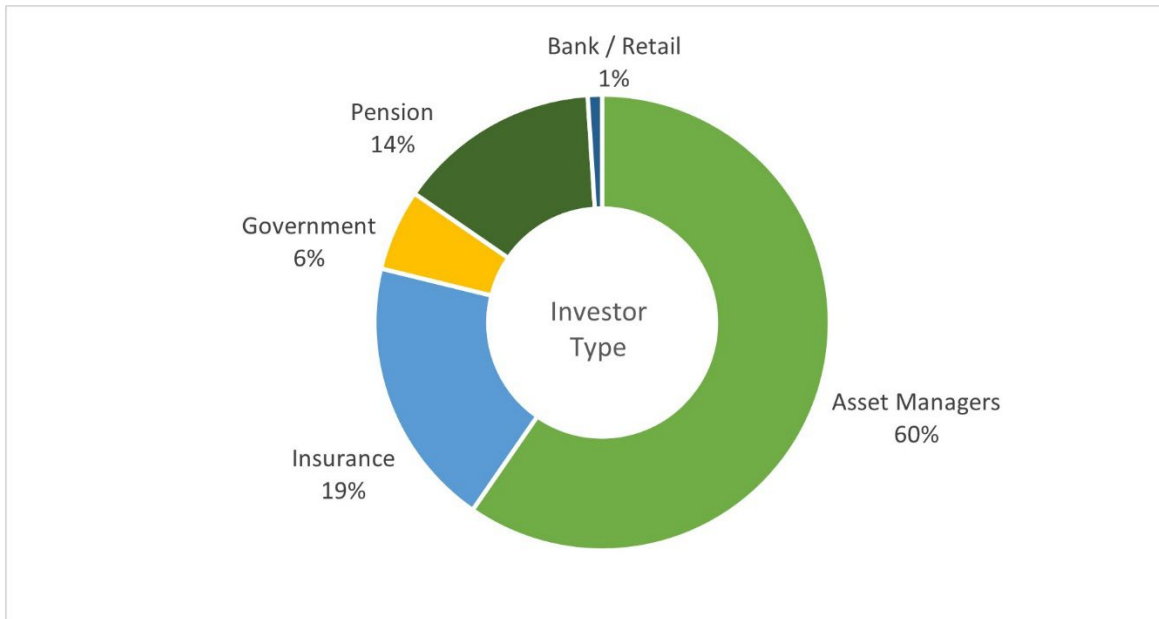
City of Ottawa's Inaugural Green Debenture issue in November 2017 marked the first Municipal Green Bond issue in the Canadian market. To date, Ottawa had four Green Bond issues. All Green Bonds were available through Ottawa's syndicate group for placement with Canadian and international institutional investors. The Ottawa May 2051 Green Bond is included in the Bloomberg MSCI Green Bond Index.

With C\$827 million of Green Bonds issued, Ottawa is now the largest Canadian Municipal and third largest Canadian government issuer of Green Bonds.



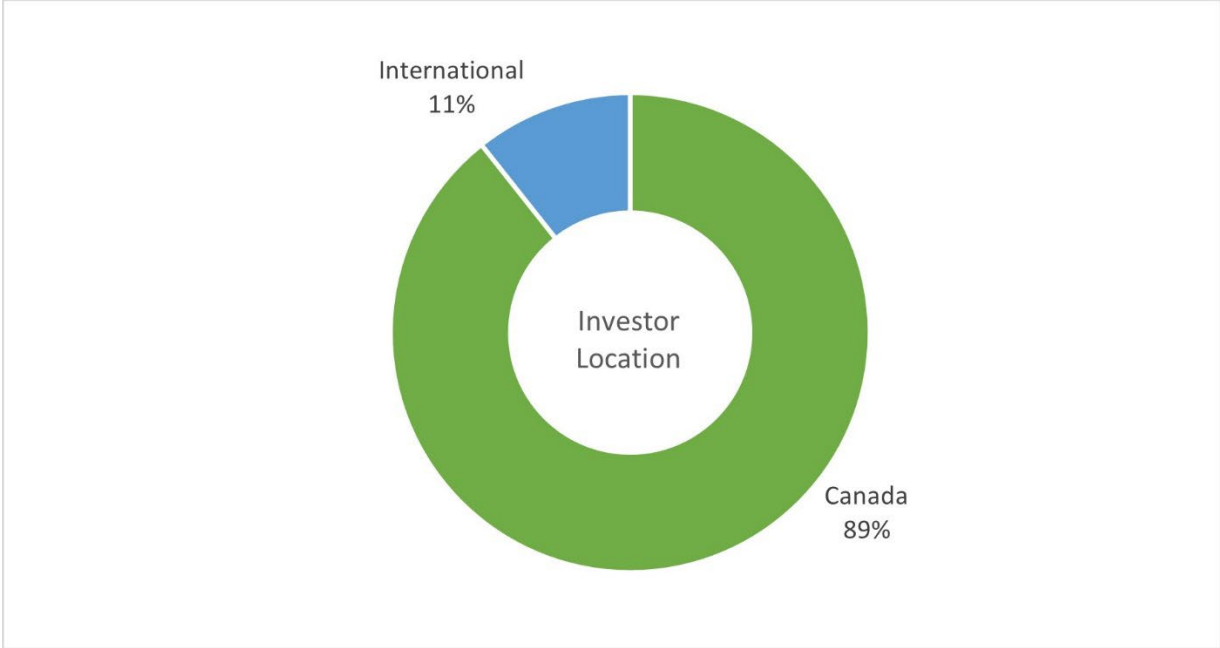
Investor Distribution

Well-diversified placements with Asset Managers, Pension Funds, Insurance Funds and Government Agencies.



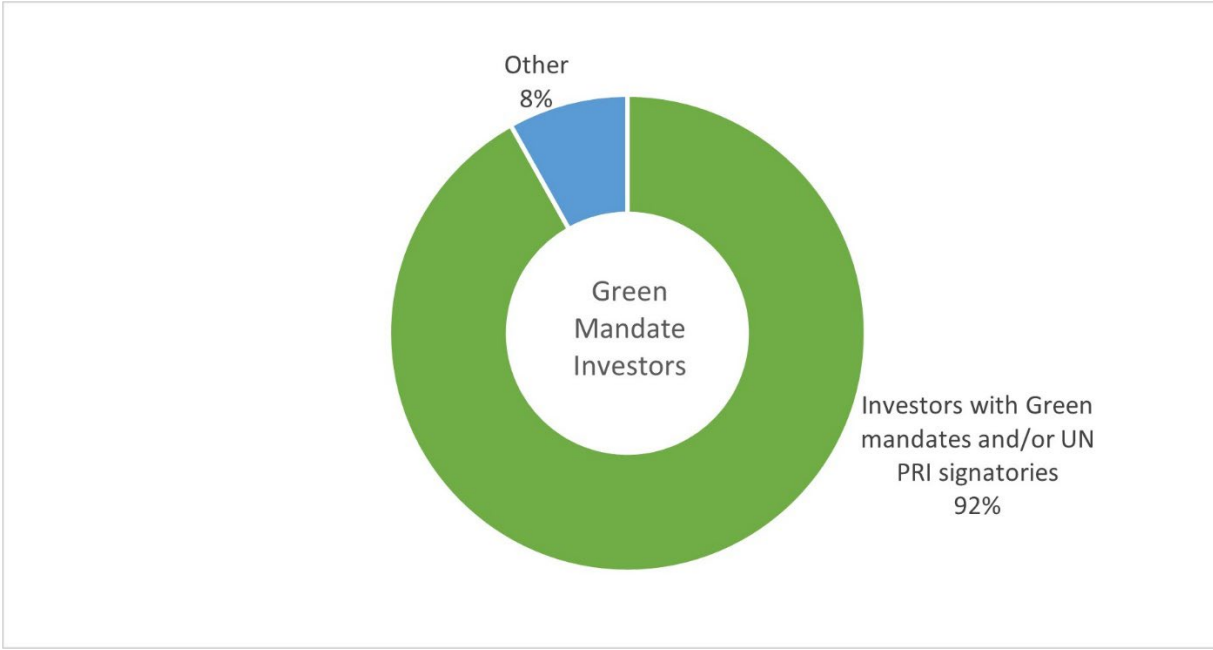
Investor Location

Demand for the Ottawa Green Bond is primarily concentrated in Canada, with an average of 89% bonds placed domestically; however, interest from international accounts is growing and represented 17% of the 2021 issuance.



Strong Interest from Green Mandate Investors

Investors who have demonstrated support for ESG, green investment practices and mandates represented 92% of overall sales.



Use and Management of Proceeds

The net proceeds of all Green Debentures were allocated to the following projects in compliance with the City of Ottawa Green Debenture Framework and in accordance with the appropriate By-Laws.

By-Law #	Clean Transportation Project	Green Bonds Proceeds	Funds Disbursed	Balance
2017-355	908650 - LRT Stage 2 - RTG MOU	<u>102,000,000</u>	<u>102,000,000</u>	-
		102,000,000	102,000,000	-
2019-272	907926 - LRT Stage 2 905176 - LRT Stage 1 Confederation Line	153,300,000	153,300,000	-
		<u>46,700,000</u>	<u>46,700,000</u>	-
		200,000,000	200,000,000	-
2020-110	907926 - LRT Stage 2	<u>300,000,000</u>	<u>300,000,000</u>	-
		300,000,000	300,000,000	-
2021-359	905176 - LRT Stage 1 Confederation Line 907926 - LRT Stage 2	8,812,200	*	*
		<u>216,187,800</u>	<u>*</u>	*
		225,000,000	*	*

*Details will be available via year-end financial reporting

The proceeds were used to finance spending on the projects identified in the table. As of December 31, 2021, 100% of proceeds have been disbursed and the remaining unspent

balance for the first three issues is \$0. A report on the unspent balance for the 2021 debenture issue under By-Law 2021-359 will be provided in subsequent updates.

Green Debenture Project Update

Project Overview

The City of Ottawa's LRT Confederation Line - Stage 1 project has provided a more accessible connection to the Ottawa's downtown area. The LRT Stage 2 expansion will build on the City's Confederation Line investment by extending light rail an additional 30 kilometers, bringing 70% of residents to within 5 kilometers from an LRT station and connecting the City's communities to the east, west, and south. In March 2019, Ottawa City Council approved the Stage 2 Project. The LRT extension is not only part of an official, integrated land-use plan and the City's Transportation Master Plan, it is also in line with Federal and Provincial commitments for transit expansion.

Estimated Environmental Benefits

The business case for this project identified the following benefits:

- Increased ridership: Total system ridership is expected to increase to 164 million trips per year as result of Stage 1 LRT. Stage 2 LRT is expected to increase ridership by additional 10 million plus trips per year by 2031
- Decreased congestion: majority of buses removed from downtown streets; reduction of approximately one sixth of total vehicle kilometers travelled by 2031
- Improved mobility: travel time savings and improved access from extended areas of the City
- Vehicle operating cost savings: fuel and maintenance
- Public health: benefits associated with reduction in harmful emissions as a result of replacing diesel buses with electric trains; reducing contributions to climate change; reducing the number of collisions; mobility options for those who rely on public transit for access to health care
- Land use: more compact urban form; increased clustering and accessibility
- Economic development: increased employment; GDP and tax contributions
- Environmental Benefits: the conversion to electric rail from diesel buses will result in a reduction in the greenhouse gases (GHGs) and critical air contaminants (CACs), which have direct implications for the overall sustainability of urban growth and direct consequences on the health of residents.
 - It is estimated that Stage 1 – Confederation Line would reduce GHG emissions by 94,000 tonnes and CAC by 4,600 tonnes by 2031;

- Stage 2 would reduce the GHG emissions by over 110,000 tonnes and CAC by over 3,000 tonnes by 2048

Project Status Update

The City of Ottawa's Rail Construction Program continues to closely monitor the COVID-19 pandemic in relation to both the maintenance and operation of the Stage 1 LRT and the delivery of the Stage 2 LRT projects. The various maintenance, design, and construction teams working on light rail in Ottawa are adhering to all guidance provided by Ottawa Public Health and the Province of Ontario. Construction continues in all geographic areas of the project, and the City staff is working closely with the contractors to understand if there will be any long-term impacts to these projects as a result of the current environment.

Stage 1 LRT - The O-Train Confederation Line Light Rail Transit system opened in September 2019 providing high frequency train service between Blair and Tunney's Pasture stations, and through downtown.

City staff are collecting performance information from different service areas; however, current data is influenced by COVID-19 travel patterns and is difficult to compare with data from before LRT system opened. Transit ridership dropped to 14% of pre-COVID, April 2019, levels in April 2020, and has been recovering gradually, reaching 41% of usual volumes at end of October 2021. City staff monitor ridership continuously as public health restrictions and recommendations evolve and as more customers return to on-site work and on-campus learning and resume using public transit.

Stage 2 LRT – Construction activities for Stage 2 have commenced in 2019 and are currently well underway. Stage 2 will extend the current system farther south, east, and west, adding 44 kilometers of new rail and 24 new stations by 2025. There was significant progress made on Trillium Line South extension and Confederation Line East and West extensions in 2021. Various construction activities are completed or currently ongoing, such as modifications to highways, interchange ramps and intersections; road detours; utilities relocations; new bridges construction; construction of new drainage work; construction of new stations; construction of new parking lots at Park and Ride location. Rideau Transit Group is providing 38 additional Alstom Citadis Spirit light rail vehicles to ensure that the expanded Stage 2 Confederation Line operates as a single, uniform service. The Rail Construction Program is monitoring the production of this expanded fleet with special attention being placed on ensuring that all hardware and software improvements and upgrades resulting from in-service experience of the Stage 1 are applied to the new vehicles. Additionally, project team TransitNEXT will supply seven Stadler FLIRT vehicles designed and manufactured in Switzerland and for use on O-Train Line 2. Staff continue to work with Rideau Transit Group to monitor potential COVID-19 related impacts on the Alstom manufacturing facility in Brampton, Ontario and with TransitNEXT to monitor potential impacts on the Stadler manufacturing facility in Bussnang, Switzerland.

Future Issuance Plans

The City of Ottawa remains committed to the Green Bond market. Subject to market conditions, Ottawa plans to continue issuing Green Bonds each year. The City is planning to issue \$100 million Green Debenture in 2022 and approximately \$150 million in Green Debentures annually from 2023 to 2026.

The City of Ottawa also has a plan to update its Green Bond Framework in the near future. The update will include the expansion from Green to Sustainable framework to allow for a greater breadth of potential bond offerings in the future.

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