

Green Lane Landfill Renewable Natural Gas Project Update

Date: September 9, 2025

To: Infrastructure and Environment Committee

From: General Manager, Solid Waste Management Services

Wards: All

SUMMARY

The City's Green Lane Landfill (GLL) produces landfill gas. The regulated practice for managing this gas is to capture and flare it, which does not take advantage of the gas' green energy potential. To realize this potential, the City has been working with Enbridge Gas Ontario (Enbridge) on a project to turn the landfill gas into renewable natural gas (RNG), a renewable energy that can be used to fuel vehicles or heat buildings.

As part of an agreement with the City, Enbridge was to be responsible for the design and construction of the RNG facility as well as its operation and maintenance for the first 15 years. Additionally, the City had required that Enbridge provide the three First Nations in close proximity to GLL with an opportunity to invest in the equity of the project in order to generate benefits for their communities.

The project recently completed its pre-design phase which included a feasibility study. On July 3, 2025, the City received a letter from Enbridge stating that based on the feasibility study, Enbridge no longer wishes to proceed with the project and is terminating its agreement with the City. As a result, the project cannot go forward as originally intended.

The purpose of this report is to provide an update on the project and Solid Waste Management Services (SWMS) intention to explore alternative avenues to beneficially use the landfill gas produced at GLL. It is also to advise of SWMS' intention to partner with the City's Indigenous Affairs Office to enhance the division's Indigenous engagement.

RECOMMENDATIONS

The General Manager, Solid Waste Management Services recommends that:

1. The Infrastructure and Environment Committee receive this report for information.

FINANCIAL IMPACT

There are no immediate financial impacts resulting from the adoption of the recommendation in this report.

Future financial impacts will include the following and are yet to be determined.

SWMS intends to continue to make capacity funding available to the three First Nations in close proximity to Green Lane Landfill through its Capital Budget to support their continued participation in the landfill gas utilization project with the amount to be based on any engagement plans that are established with the First Nations.

SWMS will fund a new manager position that will be established in the Indigenous Affairs Office through its Operating Budget.

The Chief Financial Officer and Treasurer have reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on June 14 and 15, 2023, City Council adopted Item IE4.2 entitled "Landfill Gas to Renewable Natural Gas Project and Future Potential Renewable Energy Opportunities at the Green Lane Landfill" and authorized the General Manager, Solid Waste Management Services to enter into agreements necessary to investigate, evaluate, produce, manage, distribute, use and sell hydrogen and other renewable energies and associated environmental attributes and to investigate and accept external funding from all levels of government and organizations for Solid Waste Management activities including but not limited to renewable energies and landfill management. City Council also requested Solid Waste Management Services explore the feasibility and market value of hydrogen and other renewable energies that may be derived from the City's waste processing facilities.

The City Council Decision document can be viewed at:
<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE4.2>

At its meeting on December 15, 16 and 17, 2021, City Council adopted Item EX.28.7 entitled "2022 Rate Supported Budgets - Solid Waste Management Services" extending the existing authority for the General Manager, Solid Waste Management Services to continue to administer the First Nations Engagement Grant Fund for the Green Lane Landfill Renewable Energy Study Project funded through the capital program for qualifying local First Nations to retain, on a verified basis, technical services such as energy, environmental and/or similar consultants to assist with the engagement process over the term of the Study and to negotiate and enter into any necessary agreements for this grant fund on terms and conditions acceptable to the General Manager, Solid Waste Management Services and in a form satisfactory to the City Solicitor.

The City Council Decision document can be viewed at:
<https://secure.toronto.ca/council/agenda-item.do?item=2021.EX28.7>

At its meeting on December 16, 17 and 18, 2020, City Council adopted Item EX.19.10 entitled "2021 Rate Supported Budgets - Solid Waste Management Services and Recommended 2021 Solid Waste Rates and Fees" and authorized the General Manager, Solid Waste Management Services to establish and manage a First Nations Engagement Grant Fund for the Green Lane Landfill Renewable Energy Study Project funded through the capital program for qualifying local First Nations to retain, on a verified basis, technical services such as energy, environmental and/or similar consultants to assist with the engagement process.

The City Council Decision document can be viewed at:
<https://secure.toronto.ca/council/agenda-item.do?item=2020.EX19.10>

At its meeting on July 28 and 29, 2020, City Council adopted Item IE14.7 entitled "Citywide Greenhouse Gas Reduction Strategy through Blending Renewable Natural Gas and Natural Gas, a Low-Carbon Fuel Option" and directed Renewable Natural Gas produced at the Dufferin and Disco Road Organic Processing Facilities be delivered by Solid Waste Management Services via the local gas utility distribution company for distribution to all enrolled City gas accounts under the City Natural Gas Purchasing Program managed by the Environment and Energy Division and to those enrolled accounts for City's agencies, boards and corporations that elect to purchase Renewable Natural Gas, at a cost per cubic metre not to exceed the amounts required to fully recover all Renewable Natural Gas capital and operating costs.

The City Council Decision document can be viewed at:
<https://secure.toronto.ca/council/agenda-item.do?item=2020.IE14.7>

At its meeting on December 17 and 18, 2019, City Council adopted Item EX11.3 entitled "2020 Rate Supported Budgets - Solid Waste Management Services and Recommended 2020 Solid Waste Rates and Fees" and authorized the Chief Financial Officer and Treasurer and the General Manager, Solid Waste Management Services and/or designate, to negotiate and enter into any new agreements, amendments of existing agreements, or acknowledgements, including on the basis of a non-competitive procurement under Municipal Code Chapter 195 (Purchasing), necessary in connection with the efforts to produce, manage, market, distribute, use and sell Renewable Natural Gas and other environmental attributes associated with Renewable Natural Gas production on terms and conditions satisfactory to the General Manager, Solid Waste Management Services and each in a form satisfactory to the City Solicitor and the Executive Director, Corporate Real Estate Management.

The City Council Decision document can be viewed at:
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.EX11.3>

At its meeting on October 2 and 3, 2019, City Council adopted Item MM10.3 entitled "Declaring a Climate Emergency and Accelerating Toronto's Climate Action Plan". City Council endorsed a net zero greenhouse gas emissions target that is in line with keeping global average temperature rise below 1.5 degrees Celsius, immediately

strengthening Toronto's goal of becoming net zero before 2050 and City Council requested the Director, Environment and Energy to report back by the fourth quarter of 2020 on the feasibility of actions that could achieve net zero by 2040.

The City Council Decision document can be viewed at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.MM10.3>

COMMENTS

Background

The City's Green Lane Landfill (GLL), closed landfill sites and organics processing facilities are some of the largest producers of landfill gas and biogas in Ontario. Biogas and landfill gas are made up primarily of methane and can be upgraded into renewable natural gas (RNG) that can be injected into the natural gas grid and used to fuel vehicles and heat buildings. RNG production has been a strategic priority for Solid Waste Management Services (SWMS) as an opportunity to advance the City's TransformTO climate action goals and the goal of moving towards a circular economy.

The City, working with Enbridge Gas Ontario (Enbridge), has installed infrastructure at the Dufferin and Disco Road Solid Waste Management Facilities that allows it to create RNG from Green Bin organics and inject it into the natural gas pipeline. As per the strategy adopted by City Council in 2020, the RNG produced at both of the Dufferin and Disco Organics Processing Facilities is being blended with the natural gas the City buys to create a lower-carbon fuel blend that is being used to power City vehicles and heat City-owned facilities, allowing for a reduction in greenhouse gas emissions across the organization. Since 2020, the City has also been working on a project to upgrade the landfill gas at GLL into RNG.

Green Lane Landfill Renewable Natural Gas Project

Toronto collects more than 800,000 tonnes of waste per year, approximately half of which is garbage that goes to Green Lane Landfill (GLL). Currently, in accordance with Ontario regulations for large landfills, the landfill gas at GLL is flared, which does not realize its renewable energy potential. In 2020, Solid Waste Management Services (SWMS) retained a consultant, GHD, to develop an approach for beneficial utilization of the GLL gas through exploration of available technologies and solutions.

In 2021, the City formed a steering committee related to the project including representation from each of the three local First Nations in close proximity to the landfill – the Oneida Nation of the Thames, Chippewas of the Thames First Nation and Munsee-Delaware Nation – and made \$100,000 dollars of grant funding available to each Nation to support its participation in the project. The steering committee developed evaluation criteria centred around environmental, social and economic impacts to help inform the study and its final recommendation, which was to produce Renewable Natural Gas (RNG).

The City entered into an agreement with Enbridge Gas Ontario (Enbridge) in 2023 to realize the project. As part of this agreement, Enbridge was to be responsible for the design and construction of the RNG facility as well as its operation and maintenance for the first 15 years. Enbridge was to finance the project with the City paying for the costs of the facility and its operation and maintenance over 15 years through a service fee to Enbridge. Additionally, the City had required that Enbridge provide the three First Nations in close proximity to GLL with an opportunity to invest in the project infrastructure in order to generate benefits for their communities.

The project, which was estimated to produce more than 24 million cubic metres of RNG and reduce greenhouse gas emissions by almost 35,000 tonnes of CO₂e per year, recently completed its pre-design phase. This phase included a feasibility study which looked at what type of technology and infrastructure would be required to upgrade the landfill gas to RNG and the associated overall construction and operating costs of the project. The study indicated that the costs for the project would be approximately double those originally estimated by Enbridge. The increase in costs can be attributed to changing market conditions and the composition of the landfill gas and technology required to upgrade it.

On July 3, 2025, the City received a letter from Enbridge stating that based on the feasibility study, Enbridge no longer wished to proceed with the project and was terminating its agreement with the City, which was allowable at this stage of the project. As a result of this, the project cannot go forward as originally intended.

This does not impact the Dufferin and Disco Road Organics Processing Facility RNG projects, which are already constructed and will continue as per the existing agreements with Enbridge. As per City Council direction, the City will continue to self-consume the RNG from these projects to help heat buildings and fuel fleet, reducing greenhouse gas emissions across the corporation.

Exploration of Alternative Options for Beneficial Use of Landfill Gas

While capturing and flaring landfill gas does reduce greenhouse gas emissions, it does not eliminate them or take advantage of the gas' green energy potential. As a result, the City will continue to explore avenues to beneficially use the landfill gas at Green Lane Landfill. In support of the City's TransformTO climate action goals, Solid Waste Management Services (SWMS) will begin to explore other avenues to beneficially use the landfill gas including but not limited to other RNG options/models, electricity generation, and other renewable energies.

Partnering with the Indigenous Affairs Office to Enhance Engagement with First Nations

Solid Waste Management Services (SWMS) has been engaging with the Oneida Nation of the Thames, Chippewas of the Thames First Nation and Munsee-Delaware Nation on matters related to Green Lane Landfill through various avenues.

The City remains committed to meaningful engagement with these communities and continuing to foster and strengthen its relationships with them. In support of this commitment, SWMS is partnering with the City's Indigenous Affairs Office (IAO) to enhance the division's Indigenous engagement. A new manager position will be established within the IAO to lead and coordinate all SWMS Indigenous-related work. This individual will be instrumental in renewing relationships between SWMS and the Oneida Nation of the Thames, Chippewas of the Thames First Nation and Munsee-Delaware Nation.

Next Steps

Solid Waste Management Services (SWMS) will begin exploring current options for beneficial use of the landfill gas at Green Lane Landfill and will report back to City Council with the results of this exploration. Additionally, SWMS will partner with the IAO to enhance the division's Indigenous engagement, working with the First Nations on a renewed relationship.

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SIGNATURE

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