



**The Corporation of the City of Cornwall**  
**Regular Meeting of Council**  
**Report**

Department: Infrastructure and Municipal Works  
Division: Environment  
Report Number: 2020-326-Infrastructure and Municipal Works  
Prepared By: Carl Goodwin, Division Manager  
Meeting Date: September 14, 2020  
Subject: Co-Digestion Feasibility Study Presentation by Ontario Clean Water Agency

**Purpose**

To provide Council with an overview presentation of the co-digestion feasibility study now underway within the Environmental Services Division. The presentation will also describe how the study will progress with a final report in December of this year.

The presentation will be moderated by Indra Maharjan, Director of Innovation and Technology (Energy, Climate Change and Resource Recovery) with the Ontario Clean Water Agency.

**Recommendation**

That Council receive Report 2020-236-Infrastructure and Municipal Works.

**Financial Implications**

No financial implications at this time.

**Strategic Priority Implications**

The feasibility study is aligned with "Being Leaders in Sustainability and Climate Change Impact". The results of the study have the potential to significantly



reduce Greenhouse Gas (GHG) emissions, create renewable natural gas (RNG), reduce energy requirements, recycle biosolids to fertilizer and create revenue.

## **Background / Discussion**

### **Cornwall WWTP Co-Digestion and Energy Generation Feasibility Study**

The City of Cornwall is embarking on an exciting feasibility study. Wastewater treatment plants around the world have started to look for ways to recover energy and resources in their treatment processes. Plants have begun to transform, from treatment mentality and cost centre model to resource recovery and revenue centre model including change in naming from Wastewater Treatment Plant (WWTP) to Water Resource Recovery Facility (WRRF). The cost of this feasibility study has been funded by both the City of Cornwall and the Federation of Canadian Municipalities (FCM) under its “Green Municipal Fund” (GMF) which provides grants to support environmentally sustainable municipal feasibility studies and pilot projects.

At the City’s WWTP, one of the treatment processes called anaerobic digestion, produces biogas which at present is being burned or flared into the atmosphere. The biogas has the same chemical make up as natural gas which is utilized as energy to heat homes and businesses. Currently, the generated biogas is used for heating in the WWTP although during the summer months some of this gas is flared.

The biogas produced in WWTP is considered clean compared to fossil fuel based natural gas. The ongoing feasibility study will assess opportunities to increase the rate and volume of current biogas production leveraging the existing WWTP digestion facility by adding pre-processed organic food waste to digestion process and subsequently upgrading the generated biogas to a clean and premium product called Renewable Natural Gas (RNG).

The anaerobic digestion process also produces a residual material as a by-product called biosolids which is currently disposed of at the City’s landfill site. The WWTP disposes approximately 3,000 tonnes of biosolids annually into the City Landfill. Impending Ontario regulations will require both that municipal organics and biosolids be diverted from landfill, tentatively, by 2025. The co-digestion feasibility study will also consider the potential to convert the biosolids to a fertilizer that can be applied to agricultural land and generate additional revenue.

The City of Cornwall and the Ontario Clean Water Agency, who are Project Managers for this feasibility study, will explore and assess various opportunities for the receipt of organic waste to co-digest with existing WWTP sludge. The feasibility study will consider past studies, GHG emissions, operational and maintenance impacts, capital costs, potential funding opportunities, and regulatory framework in the biosolids industry. The study's findings will guide the City in establishing most economical and environmentally sound and socially responsible solution for the WWTP's future transformation.

The presentation will provide an overview of the path of the project. The outline for the presentation is provided below.

1. Regulatory Landscape
2. Why Net Zero
3. Cornwall Net Zero Project (Scope)
4. Co-digestion study (what are we doing and where are we headed)
5. Benefits
6. Other projects (few examples of other projects in Ontario)

The benefits for Climate Change mitigation and sustainability have been well documented and wastewater resource recovery of organics into energy and land application are zero waste and carbon neutral supported by the United Nations (UN). The UN's declaration on health and sustainable development is presented below. The solutions that will result from this study support:

1. No Poverty – zero waste means jobs and sharing
2. Zero Hunger – means producing food sustainability and renewing the soil
3. Good Health and Well-Being – Wastewater Treatment Plants have improved learning outcomes when plant have been installed and a Wastewater Resource Recovery Facility pays for itself.
4. Quality Education – This project will provide public education about the benefits of Wastewater Resource Recovery to the community.
7. Affordable and Clean Energy – biogas
8. Decent Work and Economic Growth – a dollar spent on municipal infrastructure in Ontario produces \$1.30 in economic activity
9. Industry, Innovation and Infrastructure – the study will recommend innovation and infrastructure
11. Sustainable Cities and Communities – zero waste contribution

- 12. Responsible Consumption and Production – the study will bring awareness to where your waste ends up
- 13. Climate Action – There will be a significant GHG reduction and land application of biosolids fertilizer helps retain water and reduce run off
- 15. Life on Land – see above
- 17. Partnerships for the Goals – Our Stakeholder list is long

## SUSTAINABLE DEVELOPMENT GOALS



Source: United Nation

### Accessibility Impact

The public consultation plans will have AODA components built in.

Document Title:	Co-Digestion Feasibility Study by OCWA - 2020-326-IMW.docx
Attachments:	- CityofCornwall_Codigestion_NetZero_presentation Aug 10 2020.pdf
Final Approval Date:	Sep 9, 2020

This report and all of its attachments were approved and signed as outlined below:

**Bill de Wit - Sep 9, 2020 - 11:36 AM**

**Tracey Bailey - Sep 9, 2020 - 7:15 PM**

**Maureen Adams - Sep 9, 2020 - 8:00 PM**