

Wastewater Energy Transfer Project (District Energy)

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Anthony Parente, P.Eng., General Manager, Water and Wastewater

Frank Pugliese, P.Eng., Manager - Contract Administration and Oversight, Water and Wastewater

Agenda

Today we will answer your questions and tell you why District Energy (DE) is an exciting opportunity for the Region of Peel, Lakeview Village and for the **Wastewater** industry as a whole

In what ways does this benefit us?

What does the future hold?

What does this do for Climate Change?

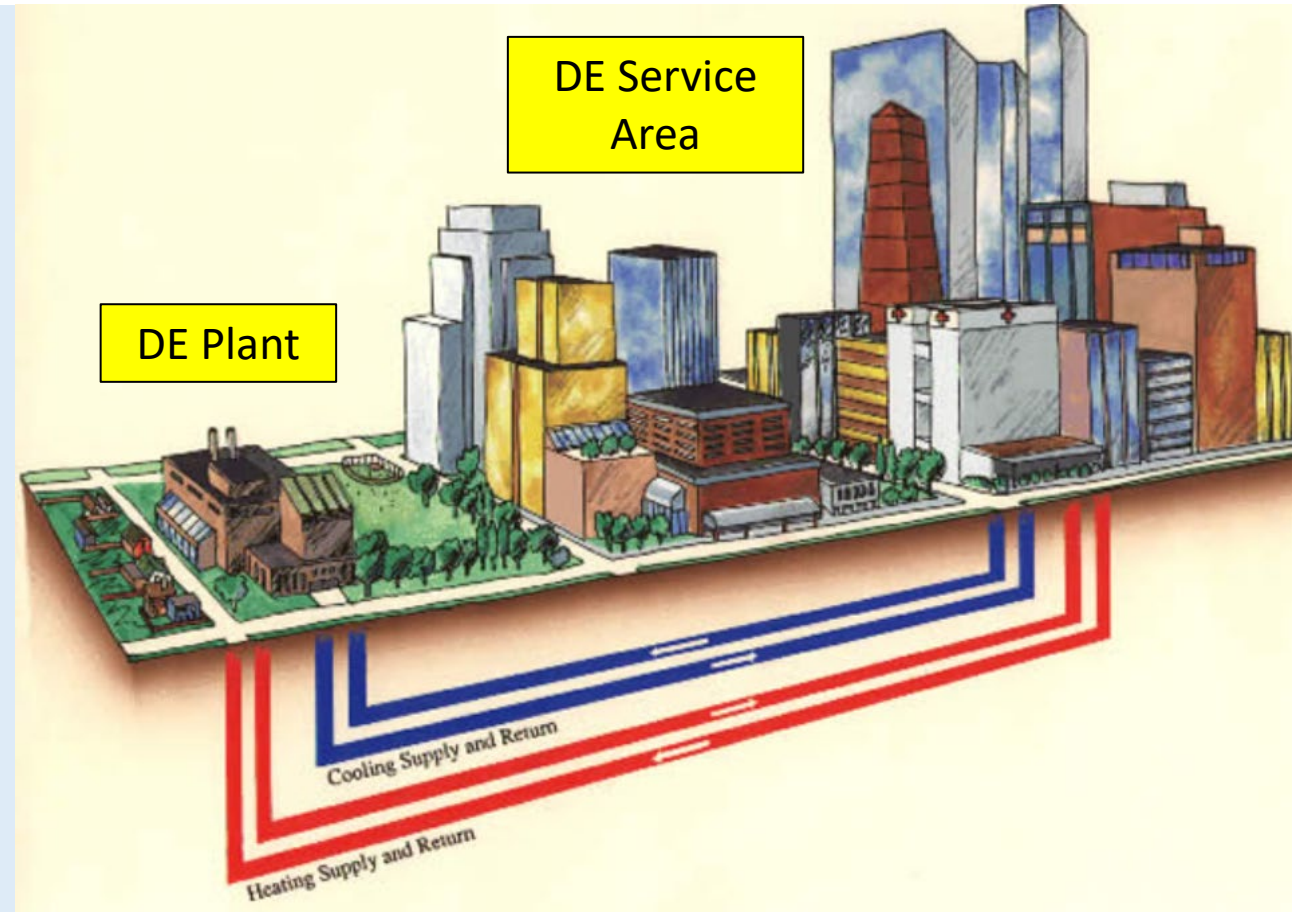
What is our Role?

Who else is doing this?

What is District Energy?

What is District Energy (DE)?

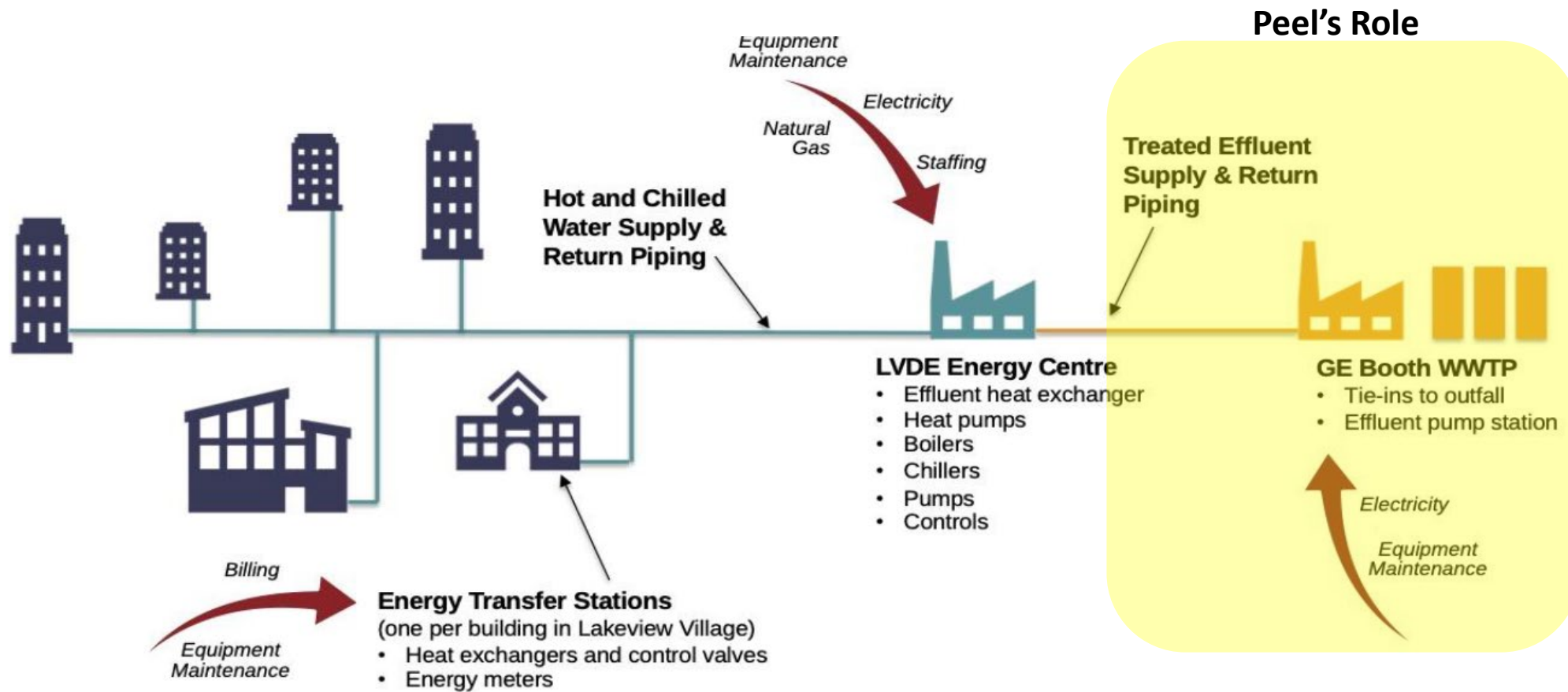
- ✓ Centralized heating/cooling for a specific area from a single facility
- ✓ A **highly efficient** method to widely distribute cooling/heating
- ✓ Eliminates the need for individual systems within buildings
- ✓ Supplied via a network of underground pipes for steam, hot water, and/or chilled water.
- ✓ Requires **less** overall energy input
- ✓ Ability to leverage **alternative sources** of fuel for heating and/or cooling



What is District Energy (DE) for Lakeview Village Development?

✓ Lakeview is a Proposed *Low Carbon* DE System

The innovative system will use treated wastewater effluent from GEB to heat and cool buildings instead of utilizing conventional boilers and chillers

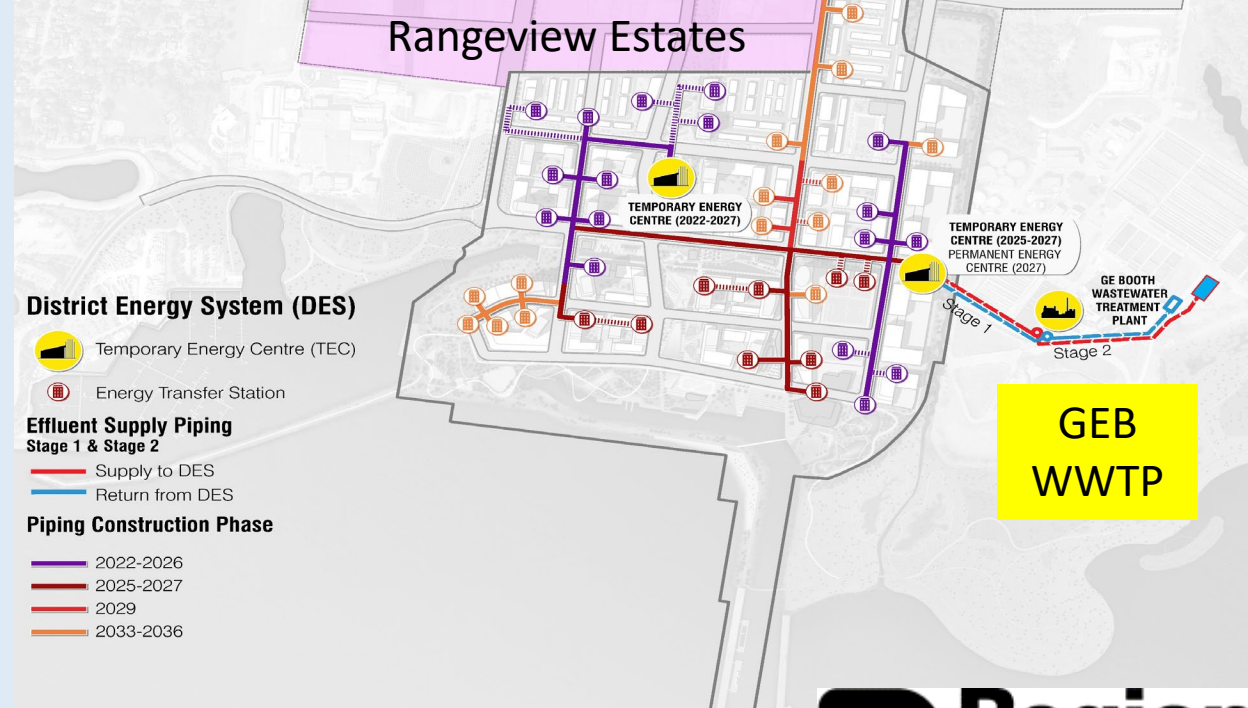


Why are we part of this?

Lakeview Village Development

- 177-acre site – *directly adjacent* to G.E. Booth Wastewater Treatment (GEB)
- DE System can leverage consistent effluent temperature as a *low carbon heating and cooling source*
- Aligns to City's OP for Lakeview
- Represents significant opportunity to for *long term GHG reductions* compared to a "Business as usual" development

DISTRICT ENERGY SYSTEM LAYOUT



Who is doing DE?

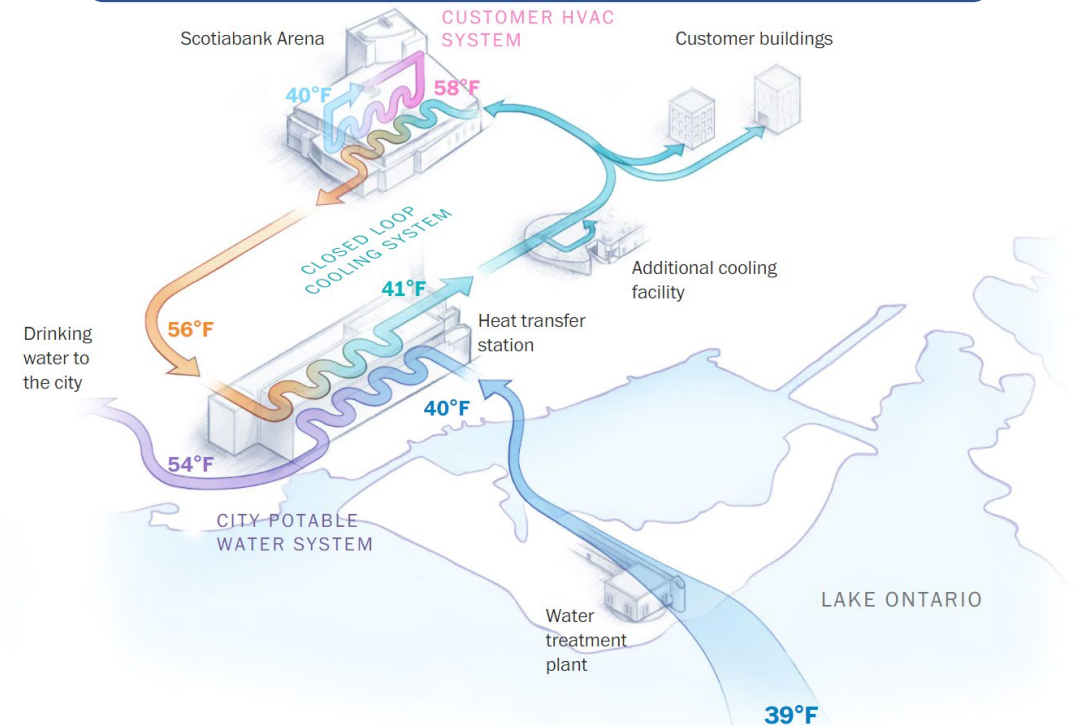
- Less common in Canada than worldwide
- DE systems and their benefits are becoming increasingly more mainstream in Canada.
- **Peel has a significant opportunity to take a leadership role**

Who is doing it

- ✓ Province of British Columbia – Richmond*, Metro-Vancouver*
- ✓ Province of Ontario
 - ✓ Town of Markham (Markham District Energy)
 - ✓ City of Toronto*
- ✓ United States of America
 - ✓ Washington State - King County*
- ✓ Europe – very common in Europe/ Nordic countries

* *Systems that use **Water or Wastewater** – raw or treated effluent as a partial/full fuel source*

Enwave's Deep Lake Water Cooling System



What can DE do for our community?

- ✓ Showcase Peel's:
 - ✓ Leadership in DE marketplace
 - ✓ Collaborative approach to partnering with private developers
 - ✓ Generate revenue and acquire significant GHG credits
 - ✓ Be recognized as a major contributor and partner in providing a “Green” solutions
 - ✓ **Additional DE projects currently in development also proposing to utilize our Wastewater System**

GEB WWTP

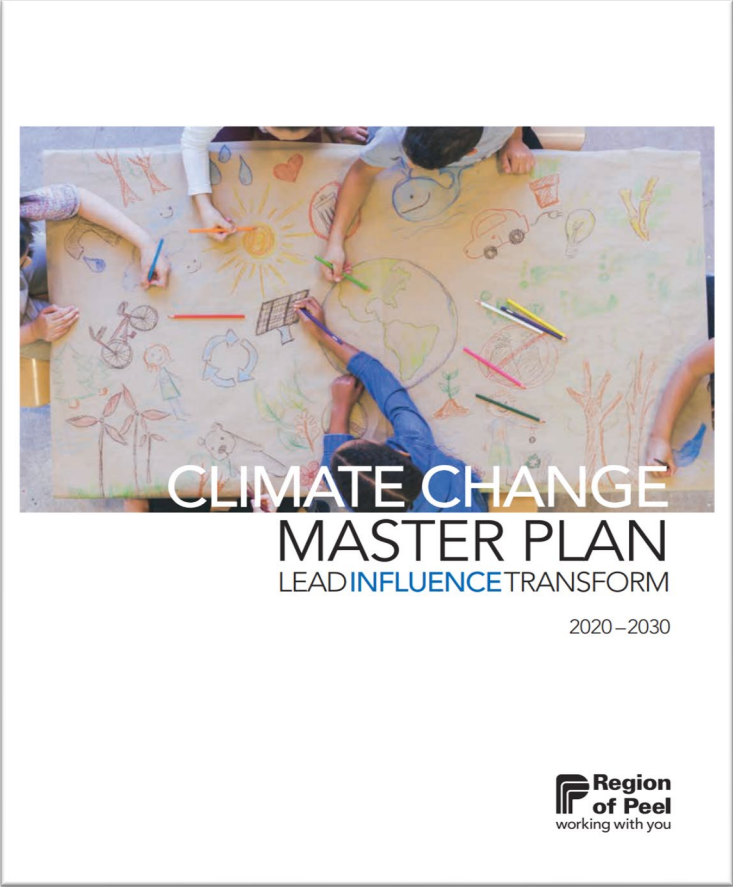


How does it align to our Climate Change Master Plan?

✓ In 2020, Peel emitted approx. 93,000 tCO2e annually*

**Current gap - approx. 17,000 tCO2e to achieve the Region's 2030 emission reduction target*

Lakeview Village GHG Credits	
Project's Total Credits (full build out)	10,000 to 15,000 tCO2e
The Region's Share (50/50)	5,000 to 7,500 tCO2e



How is this going to work and what is our role now and in future?

Lakeview DE Project - Peel will:

- Be an **Enabler** of the Lakeview project
- Ensure quality and standards are maintained
- Provide In-kind support for the project
- Charge a nominal Thermal Capacity Fee
- Ensure no impact to G.E. Booth treatment process or Peel's Collection System
- Recover operating and long-term asset management costs
- Ensure appropriate resources are in place to manage this and other DE projects

Future DE Opportunities - Peel will:

- Monitor and inspect operations of the Lakeview DE System
- Ensure no impact to G.E. Booth treatment process or Peel's Collection System
- Develop **Policy** statements for future DE project opportunities using Wastewater
- Explore opportunities for DE system applicability in the wastewater system
- Collaborate with local partners and industry to leverage wastewater energy for DE systems

Next Steps

1. Complete & Execute Agreements

- Terms & Conditions/ Memorandum of Agreement (MOA)
- Memorandum of Understanding (MOU)
- Wastewater Energy Transfer Agreement (WETA)

2. Design and Construct DE System

- Proposed to be Operational in 2030
- Timing will be subject to pace of development

3. Explore Future DE Opportunities in Peel

- Projects and studies which advance our position on DE
- Develop Policy documents and standards
- Validate the environmental impacts

Thank you

Contact info:

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