

# IRP Technical Working Group

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Meeting #6

# Enhanced Targeted Energy Efficiency (ETEE)

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# ETEE Measures of Focus for Peak Hour

Residential	Commercial	Multi-Residential	Industrial
Heating System Advancement	Heating System Advancement	Heating System Advancement	Heating System Advancement
Air Sealing	Ventilation	Ventilation	Ventilation
Whole Home Building Envelope (Wall / Attic / Basement Insulation)	Building Envelope	Building Envelope	Building Envelope

# ETEE Pilot Input Assumptions

- Focus on general service customers
- Contract customers will be considered on a case-by-case basis
- Gross impact measured for IRP
- In-situ baselines
- Derating factors or IRPA oversubscription
- Testing customer rebate and participant measure uptake

# IRP Pilot Discussion

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# Sarnia/Camlachie/Wyoming 420 kPa system

## NEEDS

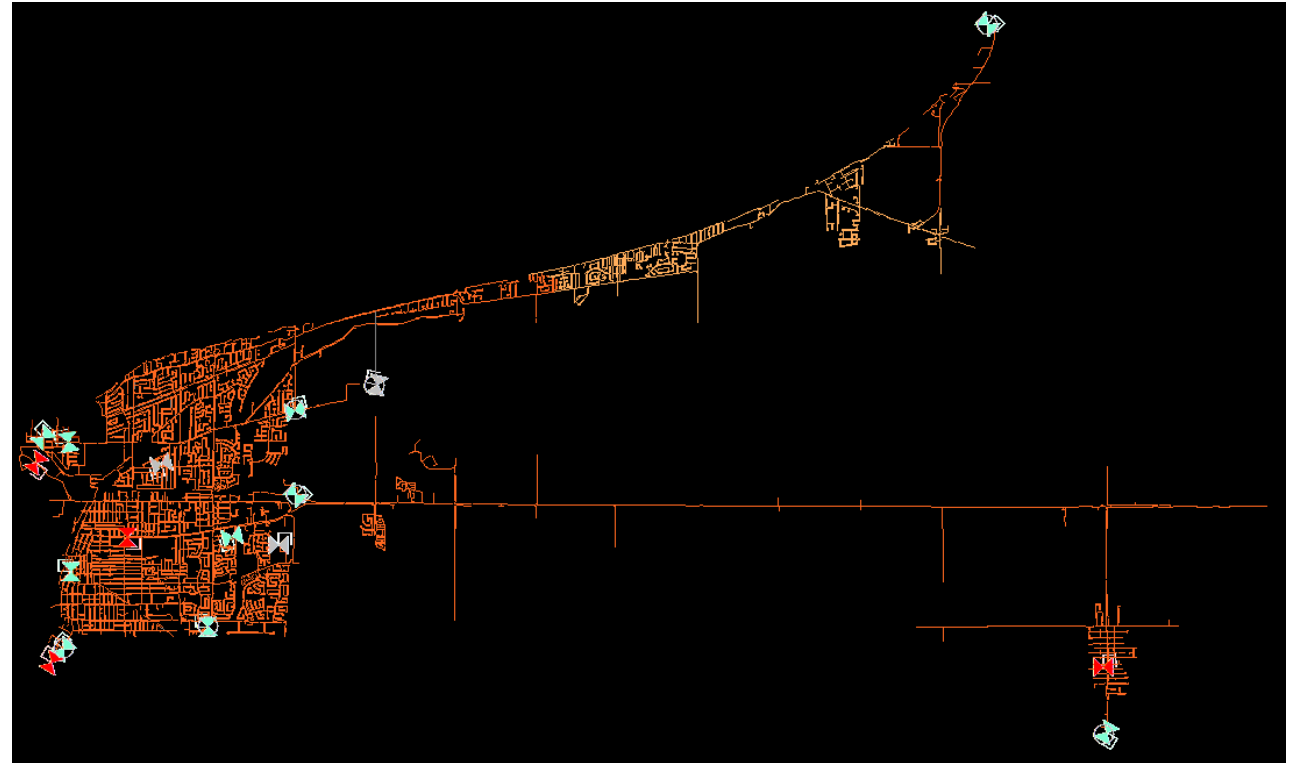
- Significant growth along lakeshore
- Single pipe reinforcement project planned in 2032
- Several pipe replacement projects (vintage steel, low pressure, bare unprotected, etc)
- Two station rebuilds

## CUSTOMERS

- ~30,150 customers (2,200 COM, 27,950 RES)
- One contract customer (IT)

## MEASUREMENT

- Most customers (~29,000) have meters equipped with interval measurement devices (ERTs). Confirming ability to enable them to begin measurement.
- Require pressure recorders (ERXs) to be installed at low points
- Six primary stations – require flow measurement installed. Some have SCADA pressure.



# Portfolio Pilot Option

# Ottawa System



## NEEDS

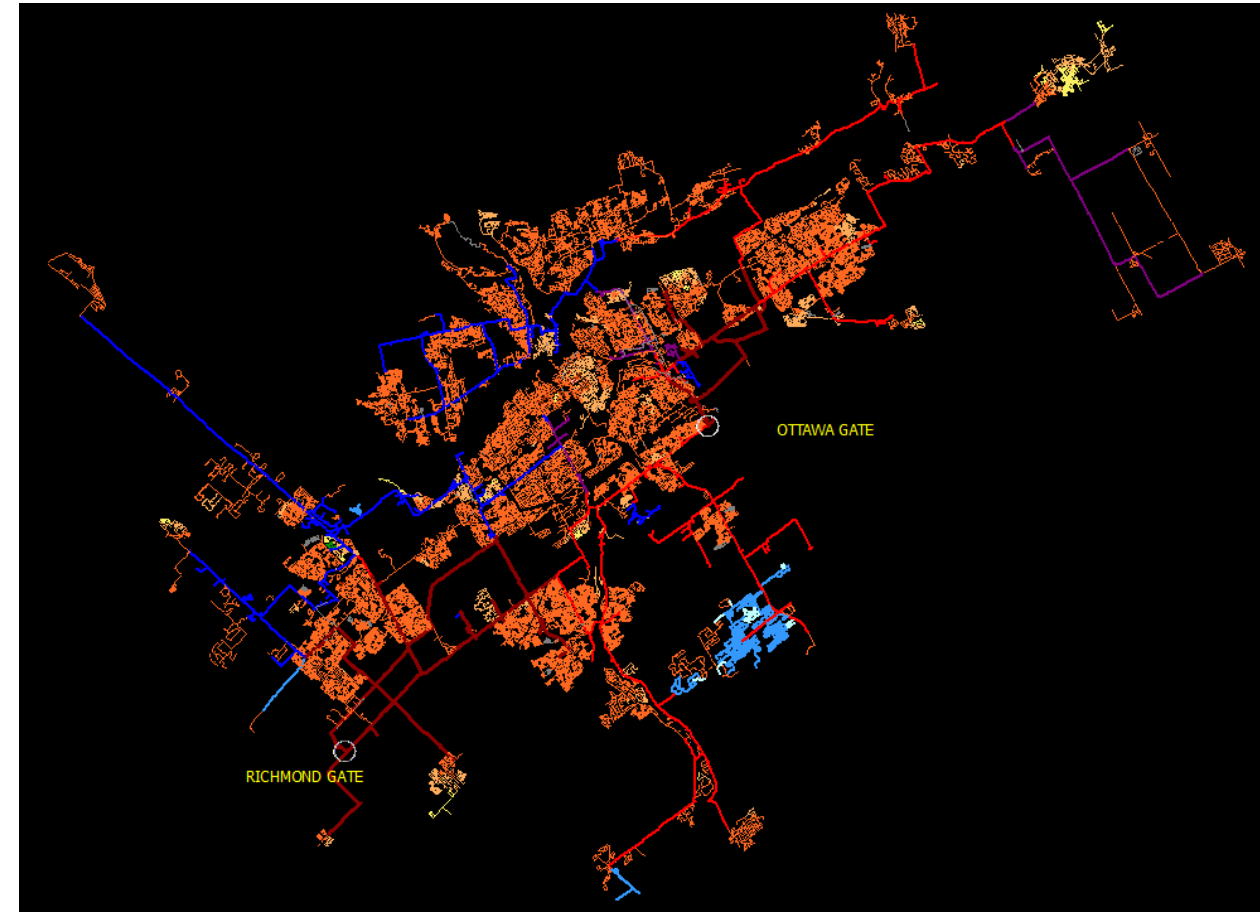
- ~14 reinforcements throughout the system
- Dozens of vintage steel replacement projects
- Various municipal replacement/relocation projects
- Various station rebuilds on this system

## CUSTOMERS

- ~343,800 customers
  - (540 APT, 19,500 COM, 323,000 RES, 200 IND)
  - 51 Contract customers

## MEASUREMENT

- Difficult to track small changes and effects system wide on a system this large
- Two primary station feeds (Ottawa Gate and Richmond Gate) with flow and pressure measurement. Dozens of stations downstream throughout
- Gazifere downstream will be a unique consideration
- ERX coverage throughout, but many specific projects may need ERXs installed



# Parry Sound System

## NEEDS

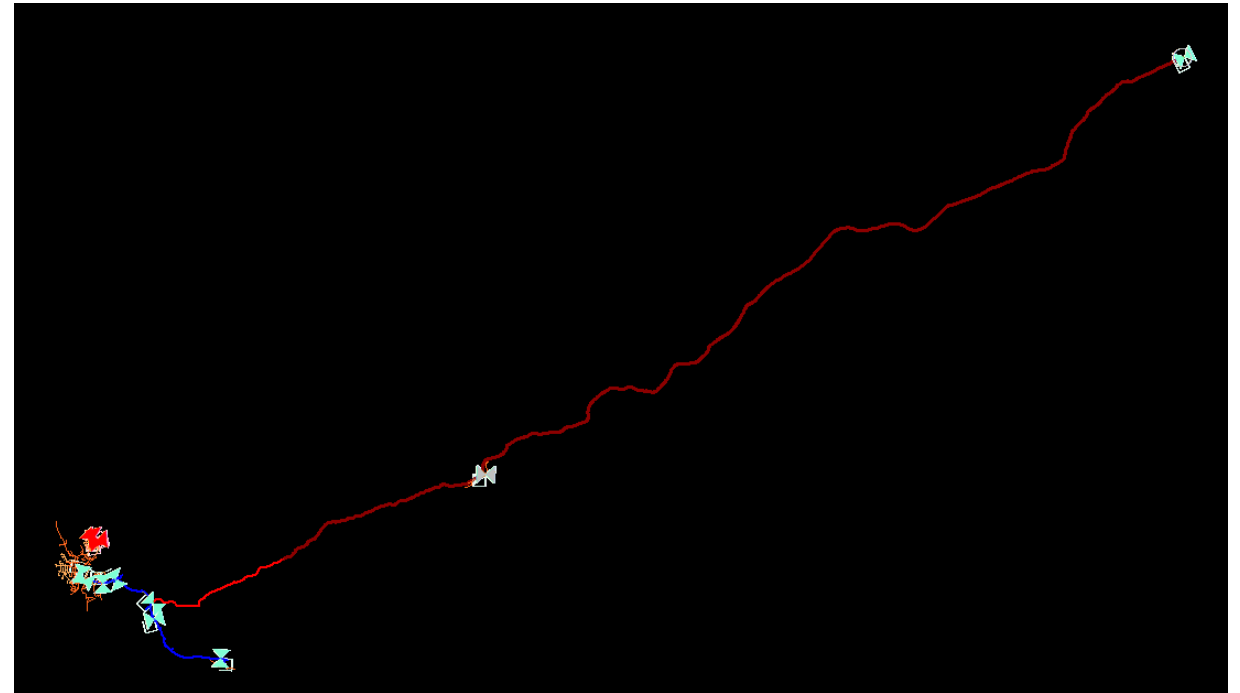
- Single pipe reinforcement planned in 2032
  - Hydrogen blending, CNG and TCE pressure increase alternatives to be considered
- No pipe replacement or station projects planned

## CUSTOMERS

- ~2070 customers (267 COM, 1803 RES)
- No contract customers

## MEASUREMENT

- Existing flow & pressure measurement at Emsdale CMS
- Existing pressure measurement at Parry Sound TBS
- Minimal customers with ERTs installed, need to install interval measurement devices at customers
- Will need to install pressure recorders (ERX's) at low points





# Single Project Pilot Option

## Brooklin System



### NEEDS

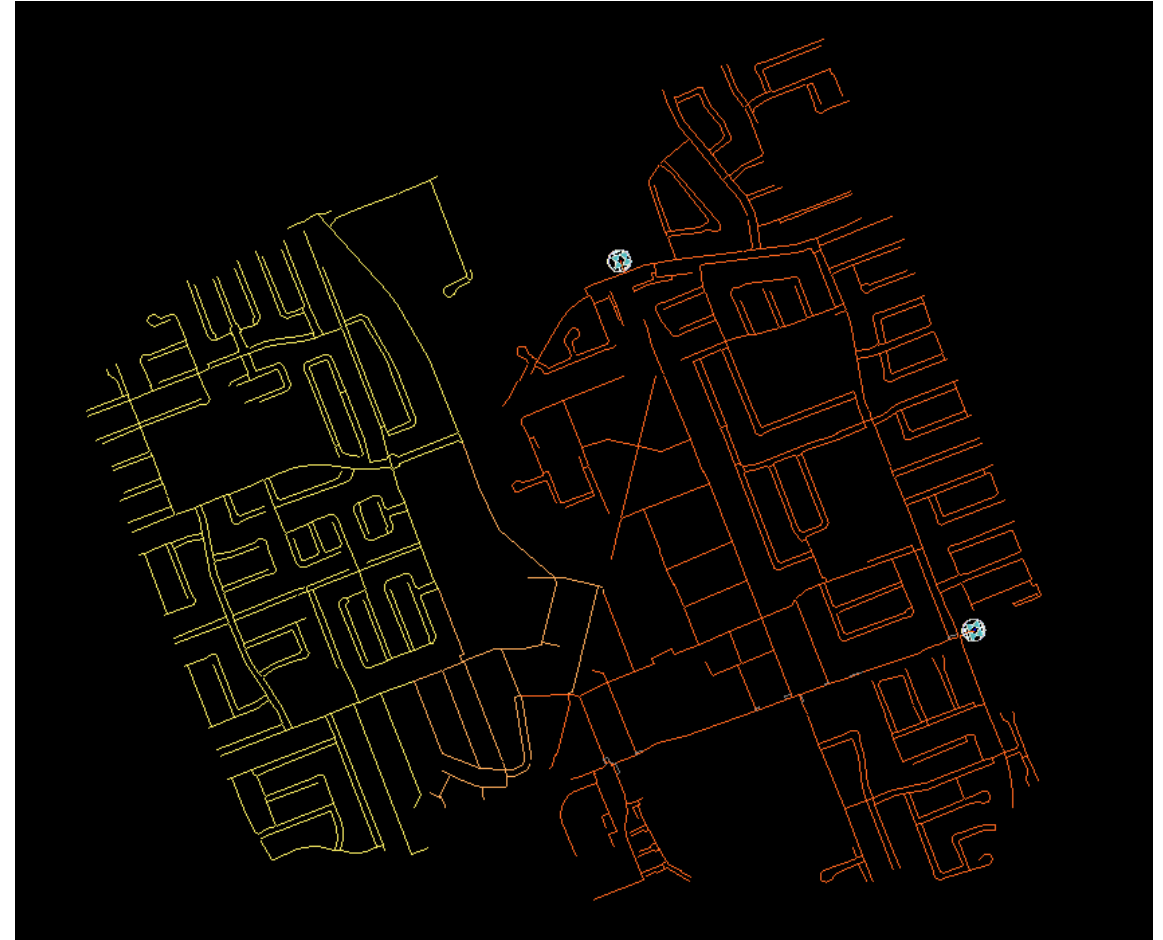
- Single pipe reinforcement project planned in 2024
- No replacement projects currently in plan
- Significant growth potential around the west end

### CUSTOMERS

- ~6700 customers (140 COM/IND, 6580 RES)
- No contract customers

### MEASUREMENT

- 2 distribution stations – no measurement currently and would require flow and pressure measurement
- Need to install ERX's at low points, currently 2 ERX's installed
- No ERTs currently installed, need to install interval measurement devices at customers



# IRP Pilots - Evaluation Matrix

- Pilot options will be evaluated against a list of key criteria to help inform selection

Criteria
Potential for scalability and transferrable learnings
System configuration
Mix of facilities requirements identified in 10-year AMP *
Balanced customer mix
Peak hourly flow data collection potential
Feasibility of supply-side IRPA implementation in the short-term
Potential for DSM to impact system needs

\* For regional pilot only

# Compressed Natural Gas

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# Compressed Natural Gas as an IRPA



## Systems Needs

- Enbridge Gas continues to receive requests for natural gas distribution connections in large and small communities for residential growth and seasonal loads
- Enbridge Gas has identified system needs where reinforcement is required due to low pressures and peak hour concerns

## CNG as an IRPA

- CNG is a potential IRPA for projects where other IRPAs are not viable
- Mobile CNG trailers and injection stations can be used to provide natural gas supply security during peak periods
- CNG trailers/stations can be used for several winters, depending on the economics, to defer or perhaps eliminate a future need and can be easily relocated in subsequent years to other locations

# DCF+ Test

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**Enhancements & Guidehouse Recommendations**

# Agenda

- Treatment of GHG Emissions
- Net Equipment Costs
- 15% Non-Energy Benefit Flooring Mechanism
- 15% Non-Energy Benefit Accentuating Mechanism
- Additional Non-Energy Benefits that could be quantified or qualified

# Treatment of GHG Emissions



- Phase 1 - Avoided/Incremental Utility Carbon Costs
  - \$65 per tonne of CO<sub>2</sub>e in 2023, increasing by \$15/tonne of CO<sub>2</sub>e per year to \$170 per tonne in 2030
  - Applicable to the utility's emissions.
- Phase 2 – Avoided/Incremental Customer Carbon Costs
  - \$65 per tonne of CO<sub>2</sub>e in 2023, increasing by \$15/tonne of CO<sub>2</sub>e per year to \$170 per tonne in 2030
  - Account for (participating) customer-specific carbon costs.

# Net Equipment Costs

- Phase 2 - Net Equipment Costs

- To distinguish costs associated with the customer-bought equipment from the rest of the customer-incurred costs
- Including net equipment costs as a separate parameter would distinguish costs associated with the customer-bought equipment from the rest of the customer-incurred costs.
- Recognizes that non-pipeline solutions (as opposed to physical pipeline upgrades) could result in customer, and equipment-specific costs.



# 15% Non-Energy Benefit Flooring Mechanism



- Phase 3 - NEB Flooring mechanism
  - The Flooring Mechanism's purpose is to ensure that quantified NEBs represent at least 15% of the overall project benefits.
  - The use of the NEB Flooring Mechanism avoids under-accounting NEBs and stimulates their quantification.
  - Quantifiable Benefits Phase 3  $\geq 0.15 * (\text{Benefits Phase I} + \text{Benefits Phase II})$

# 15% Non-Energy Benefit Accentuating Mechanism



- Phase 3 - NEB Accentuating mechanism
  - The Accentuating Mechanism reflects the “typical” NEB adder found in other jurisdictions. It aims to increase previously quantified NEBs by a specific percentage – 15% in this instance – to account for known Phase 3 benefits for which there is no quantification mechanism.
  - Will stimulate the efforts to quantify Phase 3 benefits while ensuring that unquantifiable parameters remain financially considered within the DCF+ test.
  - Total Benefits Phase 3 =  $0.15 * (\text{Quantifiable Benefits Phase 3})$

# Additional Non-Energy Benefits

- Guidehouse is also recommending the quantification / qualification of the following NEB's where appropriate:

NEB	Description
Economic development	Including but not limited to: - Indigenous employment - Low-income employment - Minorities employment - Use of Canadian material/equipment/knowledge
Increased safety	For users and operators (including probability of major injury, fatality, leakages)
Other emissions	- NOx - Sox
Water and land uses	
Resiliency of the transmission and distribution system, or the user's assets	
Reliability of the system (enhanced security of supply)	

# Next Steps

- Final GH Report received by 3rd week of June
- Enbridge will confirm what GH recommendations will be accepted
- Final report sent to the IRP TWG Group
  - Discussion with DCF+ sub-group