

### Description

The recent Fire Station 2 HVAC retrofit project addressed the facility's aging mechanical equipment and dated controls, transforming the station through:

- **The integration of advanced HVAC technology**
  - boilers, humidifiers, pumps, domestic water systems, ventilation, cooling systems, and apparatus bay heating were replaced with higher-efficiency and decarbonized options.
- **Pioneering energy metering pilot** – sub-meters were installed to track energy use on key equipment, supporting future automation and management plans for all city buildings. The facility now utilizes a hybrid fuel system with variable refrigerant flow heat pumps, a modern building automation system (BAS), on-demand hot water, and an energy recovery ventilator.

These improvements aim to increase energy efficiency and reduce the building's carbon footprint.

### Measurable Impacts and Strategic Approach

The equipment was installed in summer 2025 and is now integrated with the building automation system, currently undergoing commissioning. This pilot project enables optimized operations that ensure comfort and performance, while sub-meter data supports smarter, sustainable infrastructure decisions.

The project aims for scalable, cost-effective upgrades in buildings with smaller carbon footprints. Oshawa prioritises greenhouse gas reduction while keeping investment proportional to expected impact.

- Hybrid approach avoids costly full electrification
- Demonstrates practical sustainability leadership

The upgrades are expected to deliver significant reductions in energy use and emissions. Sub-metering will increase operator awareness and promote energy-conscious operations.

- Electricity use cut by 14%
- Natural gas consumption cut by 55%
- CO2e emissions reduced by 7.1 tonnes (46%)

### Long-term Vision and Sustainability Commitment

The City of Oshawa aims to achieve Net Zero Emissions by 2050 through its Corporate Energy Management Plan and Net Zero Emissions Retrofit Strategy, with decarbonization efforts focused on high-emitting facilities.

The Fire Station 2 HVAC retrofit project aligns with Oshawa's Strategic Plan priority area of "Care," promoting a safe and sustainable community and positive environmental impact.

