



**Queensway Carleton Hospital**  
**Energy Conservation and Demand Management Plan**  
**July 2014-June 2019**

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## **Executive Summary**

The Energy Conservation and Demand Management Plan (ECDM Plan) for Queensway Carleton Hospital is a 5 year plan beginning in Fiscal year 2014/15.

The plan was prepared using a planning framework that includes the following:

**Organization Commitment** – a demonstrated commitment by Queensway Carleton Hospital leadership in supporting energy efficiency opportunities in day to day and long term operational planning.

**Opportunity Identification** – ongoing processes to identify initiatives that improve energy efficiency coupled with planning and implementation strategies appropriately supported to achieve intended results.

**Awareness and Engagement** – an awareness campaign for staff and clients promoting organizational commitment and environmental accountability.

**Monitoring and Tracking** – systems and activities to track and monitor facility performance through utility consumption and cost measures.

## **Background**

Queensway Carleton Hospital opened in 1976 as a 240 bed acute care facility on a 51 acre campus in the west end of the City of Ottawa (Formerly Nepean). The original facility was 240,000 sq. ft. constructed in a period with somewhat limited environmental planning foresight. Since 1976 the facility has had a number of growth initiatives 1986, 1998, 2005, 2008, 2009 and 2012 expanding the facility footprint to 680,000 sq. ft. Throughout these redevelopment projects opportunities to improve facility energy performance have been introduced with a limited and restricted coordinated effort. In 2004 extensive work in on the facility heating and cooling infrastructure was completed adding new chillers, a new domestic hot water system and a 1 megawatt cogeneration unit. The natural gas fired Cogen unit, when operating at peak performance, contributes 7,000,000 kWh of power to the facility, significantly reducing GHG's emissions. In recent years peak performance has be a challenge as the normal operation of the Cogen unit has been interrupted with the significant redevelopment projects.

QCH submitted utility data to the Ministry of Energy for calendar years 2011 and 2012 as required under Ontario Regulation 397/11 and is compliant with the regulation requirements for reporting and planning.

## **Energy Conservation and Demand Management Plan**

The ECDM plan is made up of a number of five key elements:

- Determining Baseline Energy Performance
- Setting Goals
- Identifying Conservation Opportunities
- Implementing Improvement Measures
- Evaluating and Measuring Results

### **Determining Baseline Energy Performance:**

Over the past 10 years QCH has been diligently tracking and monitoring utility consumption and energy costs with an aim to understanding the operational performance of the facility, the impacts of the redevelopment projects and the implications of the introduction of new building systems. In recent years QCH has experienced decline in energy efficiency largely as a result of the introduction of new equipment, new systems and limited coordination between the old and the new. Additionally, building operators have been experiencing a significant challenge with the commissioning and operating learning curve on the new technologies. For the purpose of this plan 2012/13 data will be the established baseline.

### **Setting Goals:**

Queensway Carleton Hospital has established the following Goals:

- Reducing the facility energy profile to 60 ehWh/ft
- Improving the Cogen runtime performance to 85%
- Becoming one of the leading performers in energy efficiency in the Healthcare sector in the province

### **Identifying Conservation Opportunities:**

Identifying conservation opportunities will be a continuous performance improvement objective. Each year the ECDM Plan will be updated with the prioritized projects planned and approved through the Hospital's capital planning process. Benchmarking performance efficiency with health sector performance leaders and partnering with building automation systems providers to determine realistic objectives will be elements of the process.

**Implementing Measures:**

Projects planned and approved for 2014/15 include:

- James Beach Building Heating Loop Redesign- resulting in a reduction in the volume of natural gas (m3) to operate 5 redundant boilers.
- Parking Lighting Project – Replacing T8’s with LED’s and adding occupancy sensors. Reducing from 42.41kW/hr to 12.50 kW/hr
- AHU sequence/operating schedule - TDB
- Replacement of the Cogen engine – Increasing runtime capabilities, increasing kwh’s
- Replacement of 3 aging AHU’s with 2 new units and the appropriate controls

**Evaluating and Measuring Results:**

Queensway Carleton Hospital will provide the Energy and Greenhouse gas Emissions Template required to be submitted by July 1<sup>st</sup>. For the first ECDM Plan this will be the template submitted July 2019 with the 2017 results.

Additionally QCH will report on:

- Current and proposed measures conserving, reducing, and managing demand for energy
- Annually update current and proposed measures and targeted results
- Report on implementation project results