Energy Conservation and Demand Management Plan

June, 2014

Approved by:

Dean Martin
Senior Vice President Corporate Services and Chief Financial Officer
INTRODUCTION

The purpose of Trillium Health Partners (THP) energy conservation and demand management plan (CDM) and energy policy is to promote good stewardship of our environment and community resources. In keeping with our Strategic Plan for Sustainability, the CDM will reduce operating costs to be Better Today, Better Tomorrow, and Better in the Future. The CDM is also put in place to meet the requirements of Ontario Regulation 397/11.

Environmental concerns and the need for the efficient use of resources are providing a driving force to change the way energy use and energy costs are viewed. Rather than being an inevitable cost of doing business, energy is now considered to be a manageable input to the process.

The first step in managing energy costs is creating an Energy Conservation and Demand Management Plan (CDM). This document contains a plan that lays out a logical format for capturing information critical to energy management planning. It formalizes the thought process involved in understanding the relative magnitude of energy costs, the possible ways to reduce energy use, energy targets that are likely to be achievable, and other associated activities that need to occur. While stand-alone energy management projects are satisfying to complete, the CDM provides the "big picture" view as an ongoing framework for optimizing overall energy use and achieving success.

The scope of the CDM includes all energy sources existing (electricity, natural gas and diesel) and may include other potential sources in future (such as renewable energy such as solar, wind power) in order to have a complete understanding of opportunities for energy cost reduction and self-generation optimization. The reduction of water use also offers an effective way to reduce electrical energy consumption and greenhouse gas emissions; as such the CDM also includes water conservation strategies.
Energy management planning is intended to be a process of “continuous improvement”. A closed-loop feedback approach is most effective in demonstrating results that will justify further investment in efficiency. At Trillium Health Partners, this continuous improvement process already exists through our organizations environmental management system. The following diagram shows the circular steps that are recommended for adoption into the planning process:

- **Plan**: Create the energy management plan ensuring budgets, resources, are timelines are established to meet the targets and objectives of the plan. Include tracking and monitoring processes within the plan to ensure effective reporting to management.
- **Do**: Execute the plan by deploying the resources and budgets, prepare status reports, and implement the communication strategy.
- **Check**: Measure and monitor performance of projects and programs against the desired outcomes as planned and report to management. With recommendations for improvements and course corrections.
- **Act**: Analyze the variances to the plan and their causes. Recommend improvements, course corrections, and modifications to the plan.
GUIDING PRINCIPLES

Trillium Health Partners (THP) energy management will be guided by these principles:

**Taking A Strategic Approach:** THP actively manages energy costs by implementing opportunities as they are identified, by acting strategically, THP can significantly improve its energy-related performance. Internalizing energy management into our organization’s every-day decision-making, policies, and operating procedures will help assure substantial and long-lasting reductions in energy use throughout THP.

**Supporting Mission-Critical Goals:** Strategic energy management will directly support THP’s Strategic Plan Mission is to provide a new kind of health care for a healthier community with Goals of quality, access and sustainability. This will Improve the hospital’s financial bottom line by reducing unnecessary energy costs and optimize the capacity of existing energy systems to meet current and expanding operational needs. The impacts of THP’s energy management efforts on those goals will be tracked and reported wherever possible.

**Pursuing Long-Term Change to Core Business Practices:** The core of a strategic approach is the consistent incorporation of energy management into our organization’s core practices and decision making such as the strategic planning and budgeting processes. Change in energy-related business practice will cover all applications of energy management – new construction and major renovations, existing facility operations and upgrades, equipment changes for clinical and support functions, and the economic analysis and procurement practices underlying these practices.

**Fostering Organizational Commitment and Involvement:** Executive and organizational commitment and involvement is critical to successful strategic energy management. Top management at THP will work with key staff to ensure that adequate organizational support and resources are provided to maximize the benefits of energy management to THP. Energy management will be integrated into the strategic planning and capital budgeting processes.

**Obtaining Solid Economic Returns:** Energy management investments will yield solid economic returns that meet THP’s standard [Internal Rate of Return][Return on Investment] requirements applied through the hospital's capital budgeting process.

**Using Available Resources and Assistance:** Use national, regional, and local sources of strategic, technical, and financial assistance to help achieve our energy management goals. These include utilities, government, and other resources available through organizations such as Greening Health Care, the Canadian Green Health Care Coalition, and Canadian Healthcare Engineering Society.
POLICY

Trillium Health Partners Environmental Protection Policy was approved October 2013 by the Board of Directors as an integrated policy for all sites. Elements within the policy that relate to this CDM plan include:

1. conserving energy through efficient use and operation;
2. tracking progress toward achieving objectives and targets;
3. maintaining open communication with staff, community, and other interested parties;
4. continually improving environmental performance through environmental audits, participation in hospital industry associations, consultation with interested parties and management reviews.

This plan meets the requirements of Ontario Regulation 397/11 made under the Green Energy Act, 2009 which has Public Agencies reporting annual to the Ministry of Energy and publically displaying Annual Energy Consumption and Greenhouse Gas Emissions and developing Energy Conservation and Demand Management Plans and supports THP’s Strategic Plan and sustainability goals as defined in the Environmental Protection Policy, and through the use of the environmental management system.

Trillium Health Partner’s operations that apply under this regulation include:

<table>
<thead>
<tr>
<th>Public Hospital</th>
<th>1. Facilities used for hospital purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Administrative offices and related facilities</td>
</tr>
</tbody>
</table>

Energy reporting and conservation planning will help hospitals and other public agencies:

- manage the use and cost of electricity, natural gas, and water
- identify best practices and energy-saving opportunities
- evaluate results by comparing to similar facilities across the province
- measure improvement over time

Energy reporting will also inform the Ontario government about energy use in the broader public sector. The information will help Ontario to develop and enhance policies and programs in the future.

This plan must be made public by July 1, 2014. The plan can start before 2014 and extend beyond 2018, and may be longer than 5 years. Irrespective of the dates and duration of the first plan all public agencies are required to submit another 5 year plan on or before July 1, 2019 and every 5 years thereafter.

The plan must be approved by Trillium Health Partners senior management.
Annual data is made available as required via:

- Intranet – via About Us -> Environmental Responsibility
- Internet – via Accountability -> About Us -> Accountability -> Reportable Energy Usage and Intensity ([http://trilliumhealthpartners.ca/aboutus/Pages/Accountability.aspx](http://trilliumhealthpartners.ca/aboutus/Pages/Accountability.aspx))
- Paper copy – at the Clinical Administration Office, reception desk 4th floor. 15 Bronte College Court, L5B 0E7, Mississauga, Ontario.

These reports must be compliant with Accessibility for Ontarians with Disabilities Act, 2005
BACKGROUND

Trillium Health Partners is one of the largest community-based academically affiliated acute care facilities in Canada, serving the growing and diverse populations of Mississauga, West Toronto and surrounding communities.

<table>
<thead>
<tr>
<th>THP Site</th>
<th>Area (Square feet)</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Valley Hospital * <em>(2200 Eglington Avenue West)</em></td>
<td>1,062,251</td>
<td>1985</td>
</tr>
<tr>
<td>Mississauga Hospital * (100 Queensway West)</td>
<td>869,068</td>
<td>1958</td>
</tr>
<tr>
<td>Clinical Administration Building (LEED Gold) (15 Bronte College Court)</td>
<td>124,654</td>
<td>2008</td>
</tr>
<tr>
<td>Queensway Health Centre (140, 150, 160, 170 Sherway Drive)</td>
<td>382,564</td>
<td>1956</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,438,537</strong></td>
<td></td>
</tr>
</tbody>
</table>

*excludes parking garages

Quick Facts:

Trillium Health Partners:
- Formed December 1, 2011 with the voluntary merger of The Credit Valley Hospital (CVH) and Trillium Health Centre (THC)
  - Comprised of the Credit Valley Hospital, Mississauga Hospital and Queensway Health Centre
- Serves a community of 1.15 million
- Receive 1.5 million patient visits per year
- Receives more than 180,000 Emergency visits per year
- Receives over 57,000 Urgent Care Centre visits per year
- Employs over 8,000 nurses, doctors and support staff
- Has over 2,000 volunteers
- The facility has a total area of approximately 2.4 million square feet.

Trillium Health Partners delivers a range of highly specialized regional programs including Cardiovascular, Maternal-Child, Oncology, Renal Dialysis, Clinical Genetics, Seniors’ Health, Sexual Assault & Domestic Violence, and Stroke & Neurosciences. As regional leaders in the delivery of these programs, Trillium Health Partners is able to provide the highest level of specialized care to its patients right in their own community.

Trillium Health Partners is focused on partnership across the health care system in order to deliver on our priorities and realize our long-term vision – a complete system of care that is organized around patients. As partners in creating a new kind of health care, we are Better Together.
TEAM

An interdisciplinary team supports the Energy Conservation and Demand Management Plan including:

Senior Vice President, Corporate Services & Chief Financial Officer
Director, Corporate Services
Manager, Facilities (MH/QHC) and Team Leaders and Staff
Manager Maintenance & Engineering (CVH) and Team Leaders and Staff
Director, Construction, Capital Planning & Redevelopment and Project Managers
Manager, Preventative Maintenance and Quality and Consultant
SSW – Strategic Sourcing Specialists (procurement)

ENERGY CONSERVATION AND DEMAND MANAGEMENT PLAN (CDM)

Trillium Health Partners is committed to protecting the environment. Since 2004, the Mississauga Hospital and Queensway Health Centre maintain an Environmental Management System (EMS) to ISO 14001 which we will expand to Credit Valley Hospital site overtime.

In accordance with Trillium Health Partners Strategic Plan, environmental sustainability is supported through the implementation of an environmental management system for continuous improvement through a Plan – Do – Check – Act approach. Environmental improvement programs focus on waste, energy, water, air, hazardous material and emergency preparedness. By incorporating green conservation into our day-to-day roles we can contribute to the efficient use of resources, which in turn can be reallocated to patient care.

We continue to build momentum towards a “green” organization through various activities at the operations, management and executive levels. Our strategy includes upfront design in redevelopment projects, operational control in our daily operations and employee awareness and engagement for a sustainable environmental program. Knowledge management is key to ensure the system will go on regardless of organizational changes.

In an effort to capture energy efficiencies and benchmarking with other hospitals, THP has been a member of Greening Health Care since 2009 along with 56 Canadian hospitals (42 Ontario Hospitals and 14 Alberta Hospitals). Greening Health Care is the largest program of its kind, helping hospitals work together to lower their energy costs, improve their environmental performance and contribute to the health and well-being of their communities. Members manage data, assess their performance and track savings using a powerful online system. They share knowledge and best practices through workshops, site tours, webinars and networking to help plan, implement and verify improvements.
Utility and energy related costs are a significant cost of overall operating costs
- Utility costs exceed $10M annually in combined energy costs to local utilities (gas, hydro, water); representing about 1% of the overall Hospital Budget
- The facility O&M costs are $20M annually

A CDM is composed of two parts as follows:

1. A description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency’s operations and for managing the public agency’s demand for energy, including a forecast of the expected results of current and proposed measures.

   Appendix A - Goals and Objectives

   Appendix B - Past Conservation Initiatives

   Appendix C - Conservation Plan
   - Base line energy and target
   - Measure costs, savings, incentives and paybacks
   - Site specific energy conservation projects planned in 2014, 2015 and 2016 and targeted savings.
   - Implementation plan and timelines

2. A summary of the public agency’s annual energy consumption and greenhouse gas emissions for its operations.

   Reporting to the Ministry of Energy on Trillium Health Partners annual energy consumption and greenhouse gas emissions and through our website, intranet and in paper copy began July 1, 2013 with 2011 data.

   Appendix D - Annual energy consumption and greenhouse gas emissions for its operations.
Appendix A – Goals and Objectives

1. CDM plan approval and resources to implement – Before July 1, 2014
   a. Executive approval and resources (Senior Vice President, Corporate Services and Chief Financial Officer).
   b. Support from key staff (financial management, purchasing/procurement, construction, capital planning & redevelopment, building operations etc)

2. Implement Financial Practices and Decision Making Processes – already in place
   a. Money spent to achieve energy efficiency is viewed as an investment, not a cost.
   b. Financial decision makers consistently consider financial and operational impact on all new construction, major renovations, and equipment replacements.

3. Actively Manage Energy Commodity – already in place
   a. Minimize utility costs and exposure to market risks. Utility costs include natural gas, electricity, water, and sewer.
   b. Participate in the energy/utility regulatory process.

4. Improve Building Operating Performance – Annual continuous improvement
   a. Equipment tune-up through ongoing operations and maintenance (O&M) while supporting patient care, facility comfort and safety. Use of Greening Health Care system checklists will help to uncover measures that will help to achieve reductions. 1st version due August 2014.
   b. Develop a plan and implement periodic recommissioning to optimize systems.

5. Establish funding resources for targeted energy savings – Before July 1, 2014
   a. Funding plan is in place for 2014, 2015 and 2016 with approval of
      i. $9 million ESCO Project (approved January 2014)
      ii. Ministry of Health Infrastructure Renewal Projects (approved April 2014). 3 Projects approved for $9.1 Million each. Project #201431: Mechanical and Electrical Infrastructure (Mississauga and Queensway sites). Project #201432: Plant Infrastructure (Mississauga and Queensway sites). Project #201433: Plan and Roof Infrastructure (Queensway site).

6. Reduce Trillium Health Partners consumption – By December 2016. Refer to Appendix D for specific reduction goals by site.
   a. Electricity: 400 kW demand savings and 5,000,000 kWh energy savings
   b. Natural Gas: 1,200,000 m3/year
   c. Water: 150,000 m3/year

7. Undertake a pilot project on the Infrastructure Renewal Project to develop a framework for efficiency specifications of energy and water within future capital
projects (renovations and new builds) – As outcome of Project #201431 (December 2016).

8. Monitor, Track, and Reward Progress (quarterly and annual review)
   a. Track progress on CDM
   b. Track energy consumption changes and document associated factors of savings or increased consumption.
   c. Engage with staff for awareness and their support in these programs
   d. Engage with external organizations to identify further improvement opportunities on energy and water
   e. Reward staff for successes
Appendix B - Past Conservation Initiatives

Over the past years we’ve taken action towards conserving energy and water and continue to look for new opportunities. Some examples include:

Clinical & Admin Building

- Our Clinical & Administration building is one of our biggest “green” innovations. This building’s inception was in a similar timeframe to the implementation of our ISO14001 registration process (2004). The building is located at our Mississauga campus. The building was designed as an innovative, environmentally-friendly workspace that introduced new and efficient ways of working, while fostering teamwork and collaboration. The energy performance of the building is exceptional and its design included many other benefits for this new work environment. The biggest win was upfront design and collaboration with multiple stakeholders to deliver improved patient care, work environment and affect utility cost savings. Trillium took occupancy in mid-2008. Following the building commissioning process and completion of the LEED certification process, this building was awarded LEED Gold in July 2012.
- In 2011: Floor 6 & 7 AHU changed BAS to unoccupied (March 2011). Since that time, floor 7 took occupancy in January 2013. Floor 6 took occupancy in mid-May 2014.

Mississauga Hospital

- Linkageless Controls (2008)
- Steam Trap Audit (2010)
- Boiler study (2011)
- New OR ventilation units with VFD (one installed in December 2010 and the other installed in December 2011)
- Insulation (2011)
- Roofing replacement project (Winter 2011)
- New medical air compressor (May 2011)
- IT server upgrade (2011) resulting in an annual electricity savings of 133,590 kWh based on the virtualization of 68 servers
- Boiler optimization (Fall 2011)
- Region of Peel Water Audit (2011)
- Repairs were completed on major equipment such as the steam system, boilers and the replacement of a hot water heater in an effort to support our energy and water conservation efforts (2012)
- Replaced 36 Fan Coil Units in Patient Rooms resulting in electricity savings of 160,800 kWh and 10 kW (2013)
- Roofing at MH (5,567 square feet replaced = 2.6% of total roof area) (2013)
- The MH Storage Area Network (SAN) was consolidated to the CVH Datacenter, reducing electricity consumption at the MH site by 309,838 kWh and 42.4 kW (June 28, 2013)
- Insulation (2013)
- Boiler economizers (2013)
- Steam Trap (2013)
- Parking garage lighting retrofit to LED lighting results in estimated electricity savings of 626,261 kWh and 71.5 kW (March 31, 2014)
- A new CVH Storage Area Network (SAN) consolidates 3 IBM SAN’s and 1 EMC SAN. Servers at MH and CVH datacentre are being consolidated onto new Dell server blades. Resulting electricity savings are listed under CVH site to avoid duplicate savings (99% complete at April 7, 2014; 100% complete at May 1, 2014)
- Enbridge Run it Right Quarter 1, 2014, completed by May 30, 2014
- Ongoing boiler optimization & maintenance program to conserve natural gas

Queensway Health Centre

- Building Envelope (2005)
- Controls (2005)
- Steam Trap Audit (2010)
- Roofing replacement project (Early 2011)
- Insulation (< March 2011)
- Dishwasher - Energy Star (2012)
- Repairs were completed on major equipment such as the steam system, boilers (2012)
- Window replacements at one QHC building doubling the R value of the windows from R2 to R4 (2013)
- Enbridge Run it Right Quarter 1, 2014, completed by May 30, 2014
- Ongoing boiler optimization & maintenance program to conserve natural gas
Credit Valley Hospital

- Combustion Tune-up (2001)
- Air Handling Controls (2009)
- Water Heater - Instantaneous (2009)
- Zone Control Reset (2010)
- Steam Trap repairs (2011)
- Control – Heat Recovery (2011)
- Energy Audit (2011)
- VFD Campaign (2011)
- Occupancy / motion sensors installed in janitorial closets, electrical rooms, employee kitchenette, meeting rooms and key common areas such as hallways in 1A,1B,2A, 2B,3A,3B  (Sept 2013) and Main kitchen corridor - motion sensors installed for lighting (Aug 2013) Penthouse lights placed on timers (G block, B block and FA block) (Oct 2013) Resulting in estimated electricity savings of 617,580 kWh
- Perimeter lighting outside of G block converted to LED wallpaks with photocells for improved efficiency (Resolvetech) (Oct 2013)
- CVH revolving doors programmed to shut down in the absence of pedestrian traffic (Nov 2013)
- Water initiatives, installed 100 toilets of a planned 287 saving 3.5 gal flush with the new 1.6 gal flush toilets. (Aug/Sept/Oct 2013 (100 toilets); May (67 toilets), June 2014 (120 toilets))
- Install 4” swing check valves on boiler#2  (Dec 2013)
- Replace burner on boiler #4 (Dec 2013)
- Install wireless steam straps (Nov 2013)
- OR Lighting switch to LED (2013)
- OR Lighting switch to LED (2014)
- Parking garage lighting retrofit to LED lighting results in estimated electricity savings of 1,157,030 kWh and 129.3 kW (March 31, 2014)
- A new CVH Storage Area Network (SAN) consolidates 3 IBM SAN’s and 1 EMC SAN. Servers at MH and CVH datacentre are being consolidated onto new Dell server blades. Resulting electricity savings are estimated at 145,051 kWh and 16.5 kW (99% complete at April 7, 2014; 100% complete at May 1, 2014)
- Ongoing boiler optimization & maintenance program to conserve natural gas
- Enbridge Run it Right Quarter 1, 2014, completed by May 30, 2014
- Weekend conservation to shutoff fans and lights in unoccupied areas initiated on Earth Hour (March 29, 2014), and continuing weekly thereafter.
- The CVH Phase 3 Redevelopment Project is a recent example of upfront planning. Sustainable measures are considered for lighting, lighting controls and mechanical systems.
Shared Services West (SSW) provides Supply Chain Services, driving value with cost savings through economies of scale and efficient processes. Improvement programs focus on waste, energy, water, air, hazardous material and emergency preparedness when procuring equipment, supplies, services and redevelopment projects. These aspects are considered by the hospital leads as part of our green procurement program. Procurement processes have requirements for products and or project methodologies that are in alignment with energy conservation goals to help achieve our energy targets and reduce the Hospital's carbon footprint.

Security and Parking Services offers a number of programs including:
• Solar powered parking meters at some parking locations
• THP shuttle bus between sites that minimizes fuel consumption and air pollution of a single commuter by travelling in a group.
• Bike racks at each site; Security uses bikes to patrol property

Employee engagement, outreach and education efforts are ever changing in our efforts towards sustainability.
• Earth Day events are held annually
• Earth Hour helps us to show that reductions are possible with concerted daily efforts to turn off non-essential lights and equipment across the organization.
  o March 23, 2013 resulted in 10% kWh reduction and 12 % kW demand reduction.
  o March 29, 2014 resulted in 6.7% kWh reduction.
• Greening Health Care provides Quarterly and Annual meetings which provide a networking forum for facility and redevelopment personnel from participating forums to meet and share best practices, and learn from industry experts.
• The Partners in Project Green, People Power Challenge has been a great vehicle to engage with staff to raise the awareness and get their help and ideas towards achieving our goals for waste, energy, and water conservation. We also participated in their green transportation challenge. Most valuable player (MVP) recognition was also a valuable outcome.
  o 2011-2012 (Mississauga Hospital and Queensway Health Centre)
  o 2013 for Trillium Health Partners (Credit Valley Hospital, Mississauga Hospital and Queensway Health Centre)

In 2014 we launched our Environmental Awareness Training Program which includes details of our objectives and how all employees can help towards our environmental programs relating to waste, energy, water, air, hazardous material and emergency preparedness.
Energy Conservation and Demand Management Plan

Appendix C Conservation Plan

Energy and water conservation is an important objective for the hospital. Upfront design in capital and redevelopment projects, control in our daily operations and employee awareness and engagement is key for a sustainable environmental program.

Trillium Health Partners has plans for work to occur in 2014 through 2016. These proposed measures will be reviewed and updated in 2016, or sooner to continue to develop our energy conservation plans.

At this time, there are no renewable energy generation facilities operated by THP, and no current plans for installation.

In 2012, to fulfill LEED requirements on our Clinical Administration Building, a purchase of 746,600 kW renewable energy credits was made as a one-time event.

Base line energy and targets

Going forward, there will be a need to define the energy baseline and determine a method of monitoring and verification to confirm energy savings achieved from activities planned in 2014, 2015 and 2016, and to also account for other building changes such as major renovations and occupancy of a new floor (such as Clinical Admin Building 6th Floor occupancy in mid-2014).

Measure costs, savings, incentives and paybacks

Trillium Health Partners has Partnered with Honeywell in an energy service contract (ESCo) with a scope of $9M cost and a 6.7 year project payback. This will realize a targeted guaranteed energy savings in excess of $1.2M savings annually.

The following energy conservation opportunities are being investigated by the ESCo during the Phase 1 Audit on an individual basis or in combination with other techniques from February through July 2014. Phase 2 will begin sometime in Fall 2014 to design and implement the Energy Conservation Measures (ECMs) deemed cost effective by the Customer and the ESCo.

Systems included in the audit Phase 1:

- Operating and Maintenance Programs, documented operational and maintenance controls (Standard Operating Procedures) and Preventative Maintenance Schedules to identify efficiencies, including rebates that relate to maintenance which conserves energy (e.g. Equipment maintenance, Filter media, etc). This also includes operation and commissioning documentation, and documented standard operating and maintenance procedures to ensure the sustainability of the change.
- Integrated Energy Management Control Systems
• Lighting Retrofits, Redesign and Controls
• Steam, Hot Water and Chilled Water System Optimization
• Cooling Plant Optimization
• Economizer and Free Cooling Optimization
• Air Distribution Optimization
• Variable Speed Drives and/or Two-speed Motors
• Heat Recovery
• Water Conservation strategies
• Power Factor Correction
• Building Envelope Efficiency
• Energy Management business process improvements
• Support Customer(s) Employee Awareness Programs
• Engagement with Real time Energy Monitoring and Reporting at building level and published to intranet with agreed metrics
• Upfront planning standards and specifications for redevelopment to select the right equipment for the purpose. The equipment installed dictates the energy costs. Equipment selection should include a look at energy conservation alternatives to develop the business case around (including available rebates).
• Other measures

Any other ECMs proposed by the ESCo (e.g. alternative energy – solar, wind, etc.) will also be considered. All ECMs considered must utilize proven, readily and locally available technologies and result in verifiable energy savings. Equipment proposed must be serviced locally.

The following table provides site specific estimated potential savings from the Prior to beginning the audit, Honeywell estimated the following:

<table>
<thead>
<tr>
<th></th>
<th>Estimated Energy Savings kWh</th>
<th>Estimated Demand Savings kW</th>
<th>Natural Gas (m³/y)</th>
<th>Water (m³/y)</th>
<th>Estimated Cost ($)</th>
<th>Estimated Project Payback (years)</th>
<th>Estimated Project Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Valley Hospital</td>
<td>3,491.388</td>
<td>265</td>
<td>699.153</td>
<td>5786</td>
<td>$4,780.589</td>
<td>6.7</td>
<td>$234,438</td>
</tr>
<tr>
<td>Mississauga Hospital (and Clinical Admin Building)</td>
<td>1,369.100</td>
<td>42</td>
<td>432.077</td>
<td>69583.7057</td>
<td>$2,890.816</td>
<td>6.8</td>
<td>$122,027</td>
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<tr>
<td>Queensway Health Centre</td>
<td>675.629</td>
<td>114</td>
<td>110.215</td>
<td>30450</td>
<td>$1,241.424</td>
<td>6.8</td>
<td>$63,072</td>
</tr>
<tr>
<td>Total</td>
<td>5,536.018</td>
<td>411</td>
<td>1,241.446</td>
<td>157,889</td>
<td>$8,912.829</td>
<td>6.8</td>
<td>$420,137</td>
</tr>
</tbody>
</table>

Additionally, as mentioned there have been 3 Capital Project Infrastructure Projects have been approved by the Ministry of Health in March 2014 each with a value of $9.1 Million. Implementation is planned to extend over 2014, 2015 and 2016. Estimated related energy savings from these projects based on existing equipment and proposed changes have yet to be calculated as it is early in the project.
## Implementation plan and timelines

<table>
<thead>
<tr>
<th>Project</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honeywell Energy Service Contract</td>
<td></td>
</tr>
<tr>
<td>- Phase 1 (Audit)</td>
<td>- January to July, 2014</td>
</tr>
<tr>
<td>- Phase 2 (Design and Implementation)</td>
<td>- For Phase 2 Fall 2014 through</td>
</tr>
<tr>
<td></td>
<td>December 2016</td>
</tr>
<tr>
<td>Ministry of Health Capital Infrastructure</td>
<td></td>
</tr>
<tr>
<td>Projects</td>
<td>- April 2014 to December 2016 for</td>
</tr>
<tr>
<td>- Design and implementation</td>
<td>Project #201432 and Project # 201433,</td>
</tr>
<tr>
<td></td>
<td>and December 2017 for Project #201432.</td>
</tr>
</tbody>
</table>


Appendix D - Annual energy consumption and greenhouse gas emissions for its operations.
Reportable Energy Usage and Intensity

By incorporating green conservation into our day-to-day roles, we can contribute to saving money, which in turn can be reallocated to patient care. We recognize the potential environmental impact of our operations and subsequent effect on patients, staff and the community.

The Provincial Government has committed to help public agencies to better understand and manage their energy consumptions. As part of this commitment, Regulation 397/11 under the Green Energy Act, 2009 requires hospitals to report on their energy consumptions and greenhouse gas (GHG) annually. Reportable energy usage and intensity for Trillium Health Partners is listed below.*

<table>
<thead>
<tr>
<th>SITE NAME</th>
<th>ORGANIZATION TYPE</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>POSTAL CODE</th>
<th>TOTAL FLOOR AREA (ft²)</th>
<th>AVERAGE HOURS Per week</th>
<th>ELECTRICITY (kWh)</th>
<th>NATURAL GAS (M3)</th>
<th>GHG EMISSIONS (KG)</th>
<th>ENERGY INTENSITY (ekWh/ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVH</td>
<td>Used for hospital purposes</td>
<td>2200 Eglington Ave. West</td>
<td>Mississauga</td>
<td>L5M2N1</td>
<td>982,582</td>
<td>168</td>
<td>31,735,857</td>
<td>3,514,419</td>
<td>9,692,366</td>
<td>70.3</td>
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<tr>
<td>CVH</td>
<td>Administrative/related facilities</td>
<td>2200 Eglington Ave. West</td>
<td>Mississauga</td>
<td>L5M 2N1</td>
<td>79,669</td>
<td>65</td>
<td>1,670,308</td>
<td>184,969</td>
<td>510,124</td>
<td>45.6</td>
</tr>
<tr>
<td>MH</td>
<td>Used for hospital purposes</td>
<td>100 Queensway West</td>
<td>Mississauga</td>
<td>L5B1B8</td>
<td>803,888</td>
<td>168</td>
<td>21,797,772</td>
<td>3,194,259</td>
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<td>1,147,251</td>
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<tr>
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<td>84,432</td>
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<td>17.8</td>
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</tbody>
</table>

*As of [January 1, 2012 to December 31, 2012] dated June 24, 2014. Site name abbreviations: Credit Valley Hospital (CVH), Mississauga Hospital (MH), Queensway Health Centre (QHC), Clinical and Administration Building (CAB)
By incorporating green conservation into our day-to-day roles, we can contribute to saving money, which in turn can be reallocated to patient care. We recognize the potential environmental impact of our operations and subsequent effect on patients, staff and the community.

The Provincial Government has committed to help public agencies to better understand and manage their energy consumptions. As part of this commitment, Regulation 397/11 under the Green Energy Act, 2009 requires hospitals to report on their energy consumptions and greenhouse gas (GHG) annually. Reportable energy usage and intensity for Trillium Health Partners is listed below.*

<table>
<thead>
<tr>
<th>SITE NAME</th>
<th>ORGANIZATION TYPE</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>POSTAL CODE</th>
<th>TOTAL FLOOR AREA (ft²)</th>
<th>AVERAGE HOURS Per week</th>
<th>ELECTRICITY (kWh)</th>
<th>NATURAL GAS (M³)</th>
<th>GHG EMISSIONS (KG)</th>
<th>ENERGY INTENSITY (ekWh/ft²)</th>
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</thead>
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</tbody>
</table>

*As of [January 1, 2011 to December 31, 2011] Revised November 2013. Site name abbreviations: Credit Valley Hospital (CVH), Mississauga Hospital (MH), Queensway Health Centre (QHC), Clinical and Administration Building (CAB)