



Conservation & Demand Management Plan 2014

1.0 Executive Summary

Dedicated to transforming the world for complex patients, Bridgepoint is the expert partner that makes an active commitment to help patients get back to their lives. Bridgepoint is leading the way to simplify complexity through our active healthcare model, our groundbreaking research into practical and policy solutions and our educational programs to train the next generation of complexity experts.

Active Healthcare is our commitment to the community and the patients we serve. As part of this commitment, we focus on *Active Sustainability*. This means that in addition to caring for our patients and their families, we also care for our community, our environment and the resources we consume. Based on this, we have developed a Conservation and Demand Management Plan. This plan will help us meet our sustainability objectives of minimizing energy use and costs, running our facilities as efficiently as possible and finally, reduce our overall impact on the environment.

Within this plan, our leadership has demonstrated a serious commitment to sustainability for purposes of maintaining a healthy community. This commitment included significant effort and investment in the planning, design and building of our new facilities. Our commitment is also ongoing; operational and behavioural measures are in place to ensure we maintain a proactive and fully integrated approach to energy management and efficient use of our resources.

Goals and Objectives

We recognize the critical relationship between environmental health and public health, and we aim to limit any impact upon the environment resulting from the operation of our health care facilities. Implementing a strategic energy management plan will address the interconnected issues of indoor environmental quality, energy use, and facility operations. Our goal is to continuously monitor our current practices, so that optimal operating efficiency can be reached and resources can be allocated more appropriately to serve our community.

- Goal 1: Maintain the energy and water efficient targets set during our initial hospital design as outlined in the LEED Silver checklist.
- Goal 2: Seek other energy and water saving technologies and operating practices that may further contribute the hospitals current sustainability efforts.

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3.0 Introduction

The purpose of the Bridgepoint energy management plan is to promote sustainable stewardship of our environment and community resources.

In keeping with our core values of social and financial responsibility, Bridgepoint's energy management plan aims to reduce operating costs while enabling us to meet the requirements outlined in sections 6 and 7 of the Green Energy Act, 2009, O. Reg. 397/11.

Our organization has strived to fully integrate energy management into our practices by considering indoor environmental quality, operational efficiency, and sustainably sourced resources into major financial decision-making. This included the efforts and investment made in our new facility, which was built with a variety of sustainable design features. As a result, we are on track to achieve LEED Silver Certification. LEED stands for Leadership in Energy and Environmental Design. When we achieve this certification, our building will be officially recognized as one that is built and operated to optimally minimize non-renewable energy use, reduce water consumption, and offer a healthy workplace and patient environment. More details on how we achieved this will be provided in the report. We will also provide additional information on our plan including:

- ✓ A review of how we manage and use energy including overall impact on greenhouse gas emissions
- ✓ Successes achieved to date
- ✓ Ongoing and proposed conservation strategies



4.0 Our Facility - Environmentally Friendly & Resource Efficient



4.1 Facility Overview

Bridgepoint serves the City of Toronto and beyond, providing care for patients and their families living with complex health conditions. It offers a broad range of inpatient and outpatient services across the Complex Continuing Care and Rehabilitation continuum. It has an affiliated Family Health Team that provides primary care services, a Research Collaboratory that engages in leading edge research and the hospital enjoys a teaching affiliation with the University of Toronto and other area post-secondary teaching institutions.



Our facility has applied for and is on target to achieve LEED Silver Certification this fall under the Canadian Green Building Council. Our new facility which opened its doors to patients in April 2013, has been designed to some of the highest standards in sustainability.

The chart below provides a brief site description of our facility.

Facility Information	
Facility Name:	Bridgepoint Hospital
Type of Facility:	Healthcare Services
Address:	14 St Matthews Rd. Toronto, ON M4M 2B5
Gross Floor Area (ft ²)	<ul style="list-style-type: none"> • New Hospital – 650,000 Sq. Ft. • Admin. Building – 60,000 Sq. Ft.
Facility Use	The facility provides Complex Continuing Care and Rehabilitation inpatient and outpatient services.

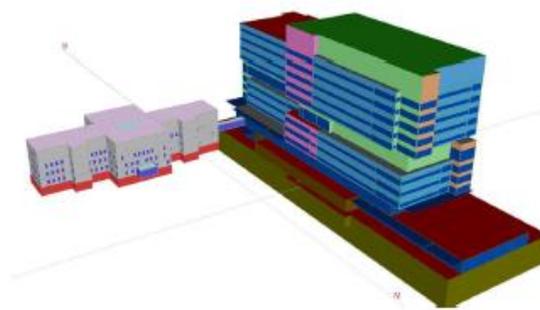
4.2 Introduction to LEED

Leadership in Energy and Environmental Design (LEED) is a rating system that is recognized as the international mark of excellence for green building in over 132 countries. Since 2002, the Canada Green Building Council (CaGBC) and LEED Canada have been redefining the buildings and communities where Canadians live, work and learn.



Obtaining LEED requires the full commitment of the engineers, architects and facility directors in order to become certified.

Bridgepoint undertook detailed energy modeling of our entire facility as seen in the image to the right.



3-D Energy Model of Bridgepoint Hospital. The different colors represent various implemented sustainability measures.

The energy modelling used to facilitate the building design estimated that once the hospital completed all building and equipment commissioning and instituted all required facility operational processes, by the end of the 2-year bedding in period the hospital should achieve energy savings in excess of 30% as compared to the Canadian national average for hospitals of the same size.

For more information about LEED and the Certification Process visit <http://www.cagbc.org/>



Bridgepoint Hospital's Green Roof

4.3 Sustainable Design Measures at Bridgepoint

We are proud of what we've accomplished at Bridgepoint and what we will continue to accomplish. The following section outlines some of the sustainable design measures that are incorporated into our campus.

These carefully planned measures have also taken into consideration our obligations under Ontario's Green Energy Act (GEA). The GEA requires hospitals to focus on conservation, be energy efficient with respect to new constructions, and promote effective and efficient use of energy within our facility and to reduce our greenhouse gas emissions as much as possible.

We have successfully exceeded the expectations of The Green Energy Act when we designed the new facility. Please see the table below for more details:

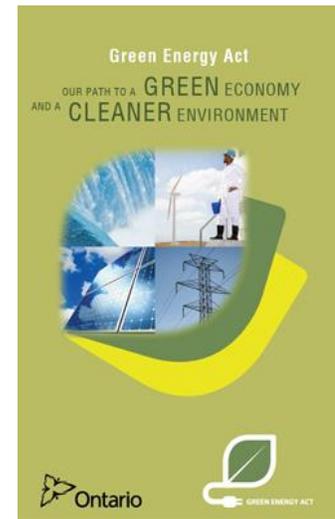


Table 4.1: Sustainable Design Measures Used in Design & Construction of Our Facility

Item	Affected Utility	Description
Green Roof	Electricity & Natural Gas	A green roof covers 50% of the building's roof surface, acting as an extra layer of insulation
High Efficiency Windows	Electricity & Natural Gas	Windows are double glazed, argon filled, low-e coated, with thermally broken frames
High Efficiency Boilers	Natural Gas	5 active boilers plus 1 for redundancy. Boilers have an 88% efficiency
High Efficiency Chillers	Electricity	4 variable-speed centrifugal chillers. Chillers have a coefficient of performance of 6
Lighting	Electricity	Lighting systems come complete with occupancy sensors in office areas, staff washrooms, and storage rooms
VFDs	Electricity	Pumps and fans are controlled with variable frequency drives
Premium Efficiency Motors	Electricity	Pump motors are high efficiency
Heat Recovery on Exhaust Air	Natural Gas	Located in patient rooms, performs at 77% efficiency
Low-Flow Water Fixtures	Water	Fixtures perform 35% better than MNECB fixtures

5.0 Energy Use in Our Facility

The following section outlines energy use at Bridgepoint. As per Ontario Reg. 397/11, we are required to report on our previous consumption data within this plan. In this section, we have provided energy use by utility source and analysis of our energy use as it relates to weather (measured in heating degree days and cooling degree days). We have also provided our overall energy utilization measured in one thousand British Thermal Units (ekBtu) per square foot of floor area.

The new facility began operation in March, 2013. As such, data provided is for a one year period.

5.1 Utility Consumption

Current utilities supplied to Bridgepoint consist of natural gas, electricity, and water. Electricity and natural gas consumption have been summarized in the table below as per O. Reg. 397/11 requirements. Each respective utility has been adjusted to fit a regular calendar year (365 days).

Table 5.1: Energy Consumption by Utility

Energy/Utility Source	Annual Consumption in Units
Electricity (kWh)	15,693,267
Natural Gas (m3)	3,346,560

While data is limited at this time due to the recent completion of our facility, we will be conducting a 2 year “bedding in” process that will provide the final benchmark of our facility for purposes of energy management analysis and future energy efficiency planning. This exercise is extremely important in our overall energy management plan. Strict guidelines are in place if actual energy consumption exceeds the energy targets established prior to building construction. Should this happen, a full analysis of cost effective measures for improving energy efficiency and/or minimizing carbon emissions will be conducted.

5.2 Introduction to Heating and Cooling Degree Days – Measuring the Impact of Weather on Our Consumption

For the purpose of the analysis found in this plan we have provided an introduction to Heating and Cooling Degree days for better understanding of weather impacts on our energy efficient hospital campus. The reason we measure degree days is to allow us to compare energy consumption relative to weather. By doing this, we can isolate if any fluctuations in energy consumption is a direct result of weather. If not, then we can quickly recognize this and isolate any efficiency issues to eliminate energy waste.

"Heating Degree Days", or "HDD", are a measure of how much (in degrees), and for how long (in days), outside air temperature was lower than a specific "base temperature" (16°C minimum). They are used for calculations relating to the energy consumption required to heat buildings.

"Cooling Degree Days", or "CDD", are a measure of how much (in degrees), and for how long (in days), outside air temperature was higher than a specific base temperature (18°C maximum). They are used for calculations relating to the energy consumption required to cool buildings.

HDD and CDD for the reporting period for our facility are summarized in the table below.

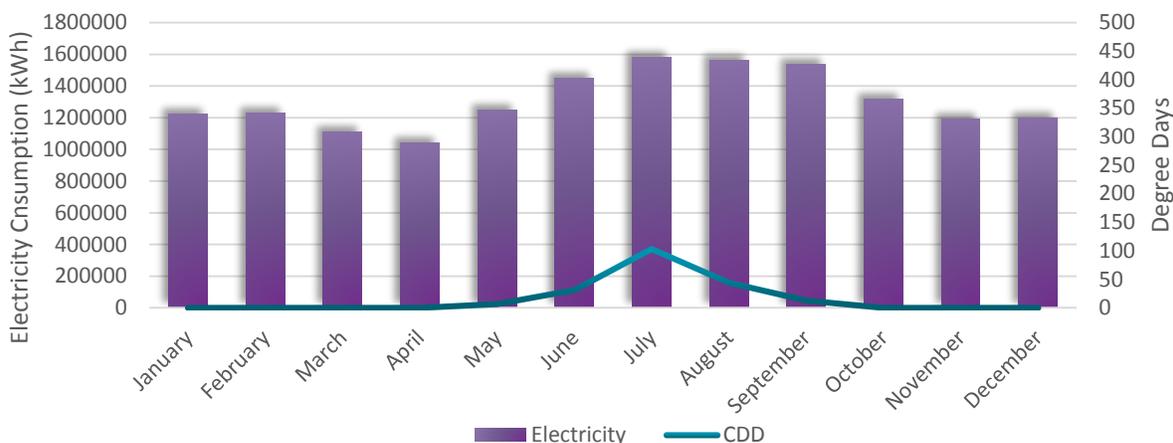
Table 5.2: Degree Days Summary for Toronto, ON.

Month	Heating Degree Days	Cooling Degree Days
January	876.21	0
February	760.22	0
March	753.66	0
April	336.77	0
May	82.34	6.9
June	27.48	31.29
July	0.8	103.01
August	1.39	43.88
September	86.18	12.9
October	202.77	0
November	487.87	0
December	795.77	0
Total HDD or CDD	4,411.46	197.98

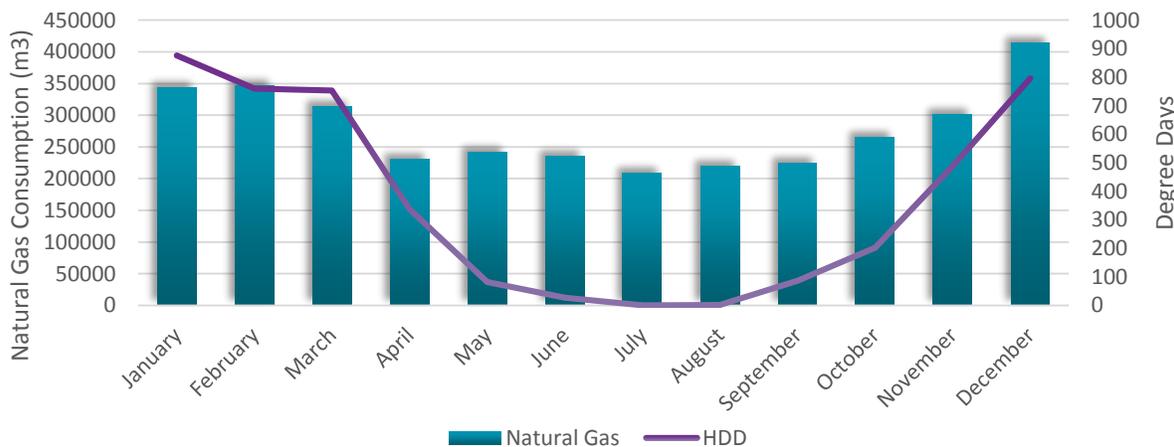
Conservation & Demand Management Plan

The charts below show electricity and natural gas use in relation to Heating Degree Days (HDD) and Cooling Degree Days (CDD). The charts show a direct linear energy efficient relationship between heating and heating degree days, and cooling and cooling degree days. This data confirms that our building has been running quite efficiently for the past year and that any fluctuations have been attributed to weather anomalies.

Electricity Consumption vs Cooling Degree Days



Natural Gas vs. Heating Degree Days



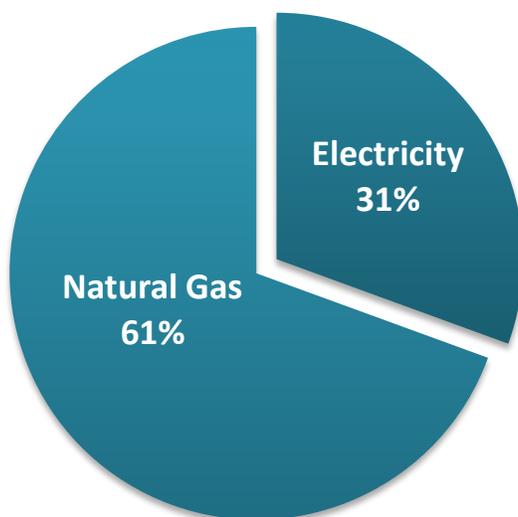
5.3 Energy Utilization - ekBtu

An "ekBtu" is a means of converting each respective energy source into a single measure of energy equivalent to one thousand British Thermal Units (ekBtu).

The following data is derived from our facility's natural gas and electricity consumption between the periods of April 2013 to March 2014.

Bridgepoint Active Healthcare	Annual Consumption
Energy (ekBtu)	175,156,070.84

Total ekBtu



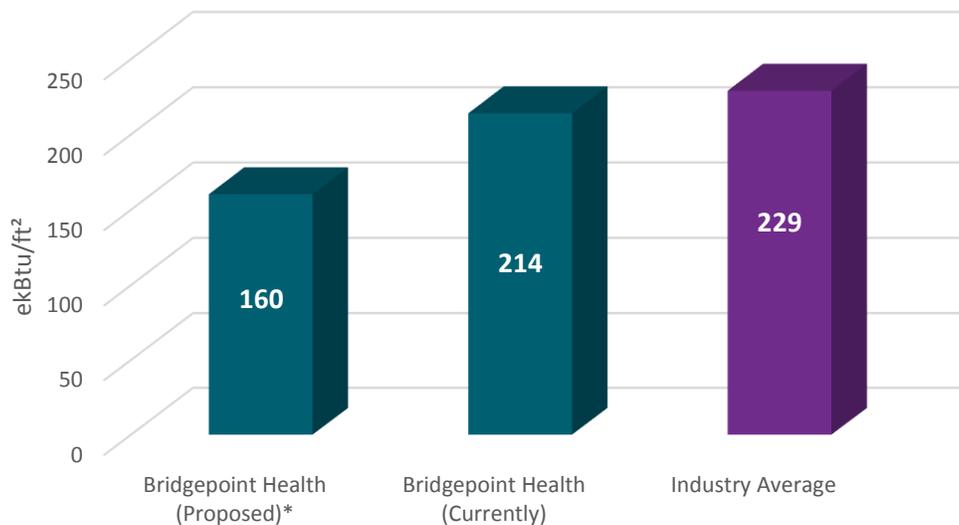
5.4 Industry Comparative

Based on NRCan's 2007 summary report of commercial and institutional consumption of energy survey hospitals ranked the highest energy intensity by sector. Such an amount of energy consumed on site per square foot is the result of specialized and sophisticated equipment, as well long hours of operation.

NRCan surveyed the energy intensity of 703 hospitals in Canada and concluded with an average annual EUI of 2.83 GJ/m²—or 249.3 ekBtu/ft². NRCan segregated this by province and in Ontario the average annual EUI for hospitals is 2.60 GJ/m²—or 229.0 ekBtu/ft².

Facility	EUI (ekBtu/ft ²)	Comparison to Industry Average
Bridgepoint Active Healthcare	214	Bridgepoint Active Healthcare has an EUI that is lower than the Ontario hospital industry average.

Industry Comparative (ekBtu/ft²)



*Derived from proposed energy model

Bridgepoint is proud of our standing within our industry. Although our hospital is newly built and final energy benchmarking is not completed, we are already making progress. Our Energy Use Intensity is 7% below the industry average. We expect that once the weather correction attributed to the extreme weather conditions experienced this past winter is applied, this indicator will drop even further.

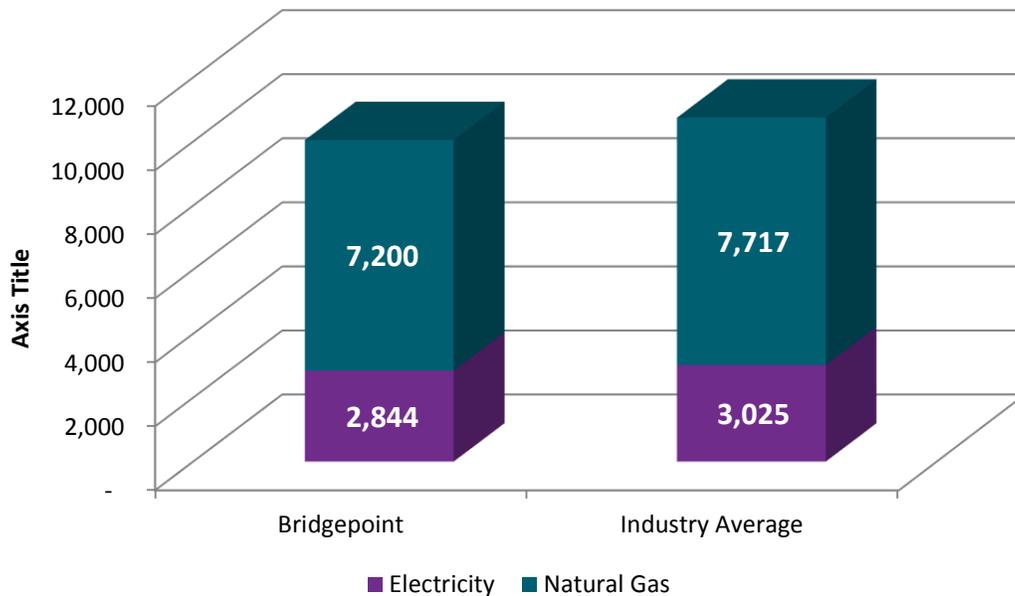
6.0 Greenhouse Gas Emissions

Our greenhouse gas emissions are calculated based on the energy consumption 2013/2014 data.

Table 6.1: Greenhouse Gas Consumption Summary

Utility Type	Units/Year	Tons of CO ₂
Electricity (kWh)	15,693,267	2,843.62
Natural Gas (m ³)	3,346,560	7,200.41
Total CO ₂ Emissions		10,044.03

Greenhouse Gas Industry Comparison



Bridgepoint’s annual Greenhouse Gas Emissions are 6.5% lower than the industry average for hospitals of the same size even while other energy intensive construction activities continue. This data is a testament to a successful initial build and ongoing operations of the facility.

Our initial energy modeling showed an energy savings of 30% as compared to the industry average for hospitals in Canada.

In this respect we are currently on target to meet our goal of a 30% energy savings. While this is a positive outcome, we will continue to focus on improving on this metric as part of our sustainability initiatives.

7.0 Additional Conservation & Demand Management Plan Strategies

Our current conservation activities have already achieved great savings and sustainable practices. The following section outlines some additional strategies that Bridgepoint Active Healthcare is undertaking to ensure that we meet our energy savings targets and remain active in achieving energy management and resource efficiency objectives.

7.1 Ongoing Conservation Strategies

Bridgepoint is committed to ensuring that the exceptional energy performance of our facility is maintained to a high standard. We will use our highly sophisticated building monitoring and control system to constantly measure and verify the integrity of our building's energy performance.

Additionally, we have incorporated a comprehensive Equipment Maintenance and Life Cycle Replacement Plan over the 30 year term so that the building components, equipment and fixtures will achieve their expected design or service life, and will provide reliable functionality within the defined performance parameters. Details are provided below:

Utilities Management Plan

The framework of the Utilities Management Plan consists of five major elements encompassing leadership, management, and employee involvement.

- Design: Problem identification, worksite analysis, and prioritization resulting in functions or processes directed toward accomplishing a specific goal.
- Teach: Training and orientation of staff on the proper functions and processes.
- Implement: Prevention and control through full and correct implementation.
- Measure and Assess: Measuring performance of plan functions and processes used to assess performance.
- Improve: Innovations resulting in redesign and plan improvement.

Conservation & Demand Management Plan

The Operations & Maintenance Manager is involved in the daily management, planning and implementation of energy management policies, procedures, processes, systems and equipment monitoring that is vital to the success of the Utilities Management Plan. The O&M Manager's roles with respect to effective energy monitoring Utilities Management includes:

- Assuring effective and efficient operation of systems and equipment;
- Reviewing the Utilities Management Plan on a regular basis;
- Developing plans for improving the Utilities Management Plan;
- Maintaining utility systems;
- Continuously monitoring utility systems and equipment for abnormal operation and failures;
- Implementing the emergency procedures for utility system disruptions or failures;
- Identifying operational issues and initiating corrective action;
- Maintaining operational schedules, temperature and pressure parameters;
- Recording and reporting abnormal operational occurrences or changes;
- Participating in all energy management-related meetings;
- Preparing strategic energy and asset planning recommendations;
- Continuously providing all necessary utilities efficiently and economically;
- Preparing periodic monitoring reports;
- Recording and acting upon customer feedback.

Life Cycle Replacement Plan

The Life Cycle Replacement Plan for the upgrade and refurbishment of base-building facility elements will maximize their life span and maintain the overall appearance and usability of the facility at the required level.

Key elements include the following:

- An annual and 5 year maintenance plan is submitted to the hospital for approval. Recommendations for extending or accelerating Life Cycle Works will be forwarded for discussion.
- Life Cycle work performed will be recorded and documented within the Computerized Maintenance Management System (CMMS) and VFA software system.
- Services related to Life Cycle replacement and renewal to minimize disruption will include work planning and scheduling, contingency planning, off-season work, etc.
- A Joint Technical Review will be conducted at the end of each five-year period throughout the term of the agreement.
- Life Cycle activity will be reported on a monthly basis including a summary of all work orders from the CMMS system, including those that are Life Cycle-related.
- Life Cycle activity is discussed at our monthly Facilities Management Committee meetings.

Energy Performance Monitoring

The following operations and reporting measures are in place to ensure our energy targets are maintained.

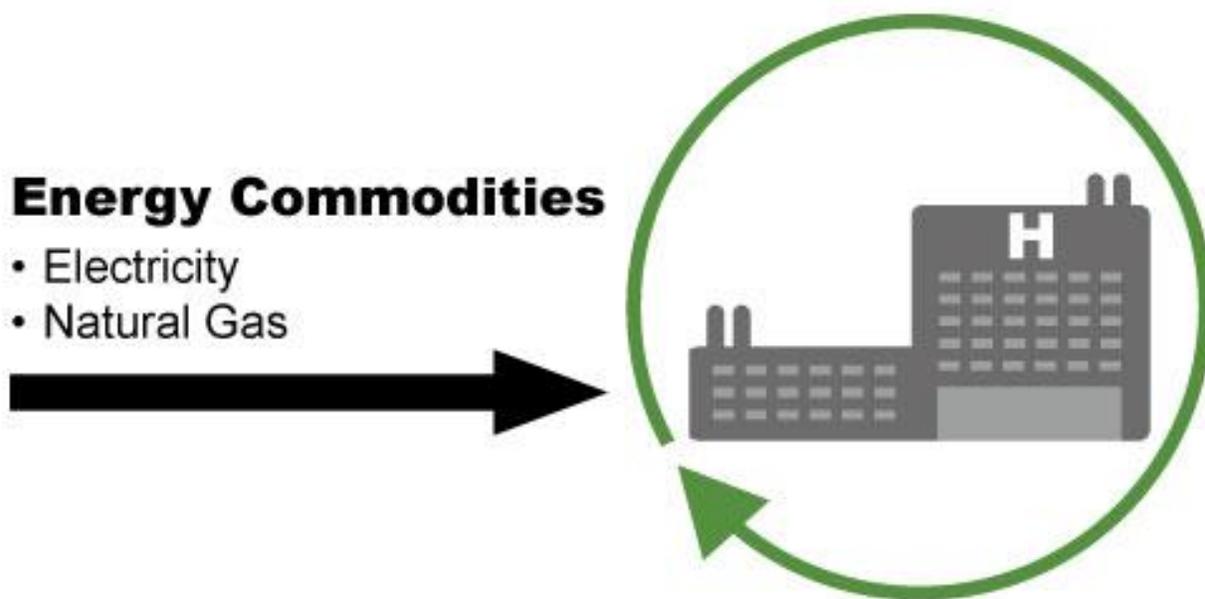
- Monthly and annual analysis and reporting of utility consumption
- Comparison of actual vs. target utility use
- Investigation of utility usage anomalies
- Recommendations for corrective action as required
- Strategic energy and asset planning involvement
- Adjustments to energy targets arising from Bridgepoint Hospital operational changes
- Weather data information and energy consumption normalization

Through ongoing awareness and communication, we emphasize the importance of saving energy to staff members through our Daily Dose bulletins. Through this media we communicate to staff all measures taken to conserve energy. We also make recommendations and suggestions when we discover energy savings opportunities that staff can directly influence. Our Daily Dose bulletins are utilized to keep energy savings and sustainability top of mind. We believe that ongoing communication will encourage and motivate staff to work together to meet our sustainability objectives.

Lastly, we are constantly reviewing new emerging technologies that would provide us with cost effective energy savings solutions. Incorporation of new technologies and systems will be vetted on a regular basis and implemented if they provide cost savings and energy reduction that are economically viable.

7.2 Energy Commodities Management

Energy management refers to both how energy is purchased and how energy is used for building operations. An important aspect of energy management is putting in place an adaptable energy commodities procurement strategy to be able to adjust to fluctuating commodity prices. We currently work with Blackstone Energy Management Services Inc. to assist us in our energy commodities procurement. Working with Blackstone allows us to be proactive and manage the costs of volatile commodities prices. This process ensures that we minimize cost and mitigate inflationary risks inherent in energy commodities. By being proactive, we have clarity and control of our budgets; in addition, any avoided costs savings generated can be applied to investing in energy savings projects.



8.0 Closing Comments

Bridgepoint has been serving the needs of our community since 1860. During these 156 years of service as a public sector agency, we have demonstrated commitment, innovation and leadership in healthcare services. These principles will also serve as the pillars to our Conservation and Demand Management Plan.

We are committed to being leaders in energy conservation and sustainability. This commitment has already been demonstrated given the completion of our new, soon to be LEED Silver Certified hospital. Ongoing commitment to energy efficiency will be achieved through the implementation of operational and efficiency measures outlined within this plan.

In the future, we will build on the innovative design features that were incorporated into our facility by exploring the latest technologies and systems available to help us improve our ability to manage energy and our carbon footprint in the most cost effective manner possible.

Finally, our leadership will continue to promote and advocate for an organization wide focus on energy efficiency and sustainable practices. This will be accomplished through implementation of best practices for facilities management, and frequent communication and monitoring of operations and energy use practices. In addition, regular reviews of our policies and procedures with respect to energy management will be conducted to ensure our team has the appropriate resources to achieve our objectives.

Thank-you to all who contributed to Bridgepoint's Conservation & Demand Management Plan. Our facility is a leading provider of healthcare, and an integral part of the local community. A key to this relationship is being able to use our facilities efficiently and effectively to maximize our ability to provide the highest quality of healthcare services while integrating environmental stewardship into all aspects of facility operations.

On behalf of the management team here at Bridgepoint, we approve this Conservation & Demand Management Plan.



This report was prepared through collaboration between the Bridgepoint facilities management, and the Blackstone Energy team.