



Bayonne Medical Center
Environmental Assessment:
Initial Green MOU SemiAnnual Report
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Environmental Protection Agency
Region 2

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Accomplishments

Reductions of 247 MTCO₂e



Memorandum of Understanding

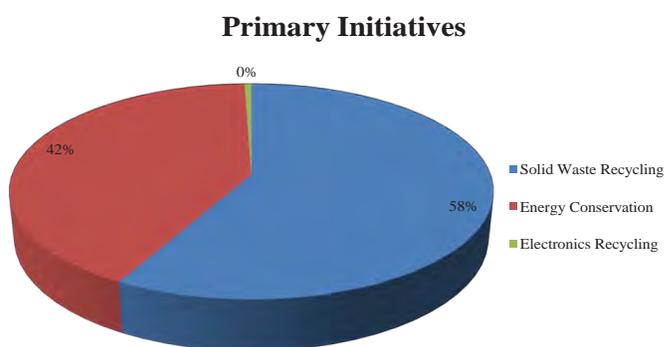
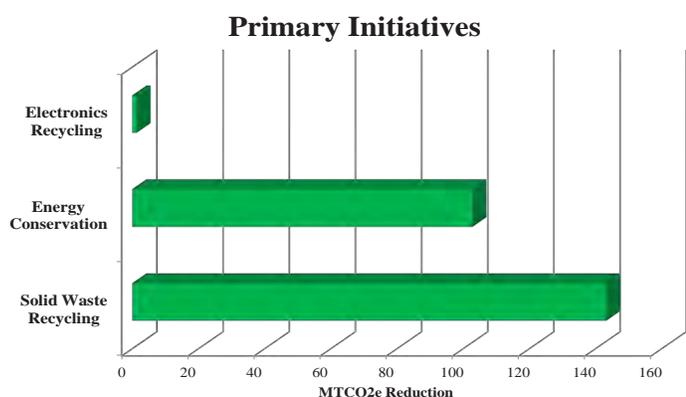
On September 16, 2011, Bayonne Medical Center signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Bayonne Medical Center has resulted in reducing energy, water and solid waste production across their entire operations.

Reduction in Environmental Footprint

This is the first update Bayonne Medical Center has provided documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint. First year results indicate that Bayonne Medical Center has managed to reduce its carbon footprint by 247 MTCO₂e* and saved an estimated \$15,900 in operating expenses. During the year since the Green MOU signing, Bayonne Medical Center has implemented a number of significant sustainable and green projects. These green practices are discussed in the narrative of this report and will provide a significant carbon footprint reduction during the second year of the Green MOU.

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	102.8
Solid Waste Recycling	143.3
Electronics Recycling	1.3
Total (MTCO ₂ e)	247.5

*Metric Ton Carbon Dioxide Equivalent



Measurement and Continuous Improvements

EPA uses these environmental conversion models to calculate metric tons of carbon dioxide equivalents:

Greenhouse Gas Equivalencies (GHG) Calculator converts GHG reductions into scenarios that can be easily communicated to the public.

eGRID Version 1.1 (2007) which converts standard metrics for electricity, green energy, fuel use, chemical use, water use, and sustainable materials management into MTCO₂e.

The EPA WARM Model which helps calculate GHG emission reductions from several different waste management practices, including source reduction, recycling, combustion, composting and landfilling.

The EPA Pollution Prevention (P2) Cost Calculator estimates cost savings associated with GHG reductions.

Certain environmental data points cannot be converted to MTCO₂e because scientific models do not currently exist.

As methodologies improve, environmental assessments will be updated to include any new GHG reduction estimates.

Accomplishments

Reductions of 247 MTCO₂e

Greenhouse Gas Equivalencies

What does the reduction of 247 MTCO₂e represent ?

The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 48.5 vehicles



- Carbon dioxide emissions from 27,747 gallons of gasoline



- Carbon dioxide emissions from 576 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 21.4 homes for one year



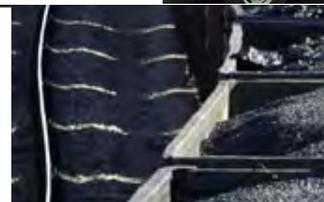
- Carbon dioxide emissions from 10,313 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 3.3 tanker trucks



- Carbon dioxide emissions from burning 1.3 railcars' worth of coal





Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star				
Total Savings (MTCO2e)		102.8	102.8	\$13,995
Miscellaneous Energy Conservation				
Web Based Energy Competition				
Motors and Transformers				
Lighting Project Fixtures (bulbs and ballast)		135,606 kwh	102.8	\$13,995
High Temp Hot Water Pipe Replacement				
HVAC, Chiller & Electrical				
Bulb Replacement (CFLs)				
Bulb Replacement (LEDs)				
Gas Savings				
Fuel Oil Savings				
Steam Savings				
Alternative Energy				
Total Savings (MTCO2e)			0.0	\$0
On-Site Solar (855 KW)				
On-Site Wind				
On-Site Geothermal				
On-Site Combined Heat and Power				
Purchase of Green Energy/Green Power				
Water Conservation/WaterSense				
Total Savings (MTCO2e)			0.0	\$0
Miscellaneous Water Conservation				
Low Flow/Hands Free Faucets				
Low Flow Toilets				
Low Flow Shower Heads				
Low Flow Urinals				
Waterless Urinals				
Solid Waste Recycling				
Total Savings (MTCO2e)		143.3	143.3	\$1,942
Mixed Recyclables (includes Wastewise)				
Pallets Waste Avoided / Wood Recycled				
Steel Recycled Offsite during Deconstruction				
Concrete / Asphalt Recycled during Deconstruction				
Recycled C&D Waste (construction waste)				
Cardboard (construction/non-construction/sharp containers)		22.4 tons	69.4	\$896
Mixed Metal (construction/non-construction)				
Paper, Mixed		19.7 tons	69.2	\$788
Plastic, Mixed (bottles,construction/non-construction,sharp containers)		2.7 tons	4.1	\$108
Can / Bottle Recycling				
Blue Wrap Waste Reduction				
Mixed Organics				
Food Donation (Waste diversion)				
Biosolids and Food Waste Recycling / Composting		3.1 tons	0.6	\$124
Fluorescent Bulbs		0.64 tons	0.1	\$26



Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Ceiling Tiles Recycled				
Carpet Recycled				
Waste Oil Recycled				
Magazines / Third Class Mail				
Newspapers				
Office Paper				
Phonebooks				
Textbooks				
Dimensional Lumber				
Fly Ash				
Aluminum Cans				
Glass				
HDPE				
LDPE				
PET				
Appliances				
Non-Ferrous Metals				
Fats, Oils, Grease				
Green Procurement				
Total Savings (MTCO2e)			0.0	\$0
Re-Use/Purchase of Materials with Recycled Content				
Purchase / Use of Compost Socks				
Purchase of EPEAT Products				
Use of Recycled Steel during Construction				
Use of Recycled Iron during Construction				
Use of Recycled Plastic during Construction				
Use of Recycled Aluminum during Construction				
Use of Recycled Concrete / Asphalt during Construction				
Use of Coal Combustion Products				
Green Landscaping				
Total Savings (MTCO2e)			0.0	\$0
Green Roofs				
Porous Pavement				
Grass				
Low / No Mow Area				
Green Space				
Re-use of Collected Stormwater				
On-Site Use of Compost / Mulch				
Moisture Sensing Sprinklers				
Number / Acres of Trees				
Reflective Roof				
Synthetic Turf				
Native Plants				
Leaves Composted				



Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Electronics/EPEAT				
<i>Total Savings (MTCO2e)</i>		1.3	1.3	\$33
Recycling of Electronics				
Re-Use/Donation of Used Computers				
Toner/Ink Recycling and Use of Recycled Ink				
Battery Recycling		0.82 tons	1.3	\$33
Mass Transit				
<i>Total Savings (MTCO2e)</i>				
Miles Avoided				
Transportation				
<i>Total Savings (MTCO2e)</i>			0.0	\$0
Hybrid Vehicles				
Electric Vehicles				
Biodiesel Vehicles				
Commuter Gas Savings				
Clean Construction Vehicles				
LNG Vehicles				
Alternate Fuel Vehicles (Zipcar)				
Smartway Transporters				
Bike Racks				
LEED Projects				
<i>Total Savings (MTCO2e)</i>			0.0	\$0
Silver - 10%				
Gold - 17%				
Platinum - 20%				
Misc. - Further Clarification				
<i>Total Savings (MTCO2e)</i>				
NOX (equipment only)				
NOX (includes vehicles)				
MTCO2e Savings				
<i>Total (MTCO2e)</i>	0.0	247.5	247.5	\$15,970
Energy Conservation	0.0	102.8	102.8	\$13,995
Alternative Energy	0.0	0.0	0.0	\$0
Water Conservation	0.0	0.0	0.0	\$0
Solid Waste	0.0	143.3	143.3	\$1,942
Green Landscaping	0.0	0.0	0.0	\$0
Electronics	0.0	1.3	1.3	\$33
Transportation	0.0	0.0	0.0	\$0
LEED Projects	0.0	0.0	0.0	\$0



2012

Bayonne Medical Center Additional Green MOU Accomplishments

Bayonne Medical Center has taken significant steps in promoting recycling, increasing energy efficiency, and reducing its carbon footprint in the year since they became the first Green Hospital in the state of New Jersey.

RECENT GREEN AND SUSTAINABLE ACCOMPLISHMENTS:

Necessary replacement of an aged HVAC roof unit with an energy efficient model enabled the hospital to benefit from advances in motor technology and control efficiency. In addition to these savings, an energy recovery wheel recaptures the energy from building exhaust to reduce consumption. When in operation, this has the potential for recovery of 375,000 BTU/hr in winter and 125,000 BTU/hr in summer.

Renovation of the Cardiac Catheterization Laboratory and Radiation Oncology clinic were completed with motion-sensitive lighting controls. These will ensure that overhead lights turn off automatically when not in use, with significant savings. Other renovations are planned for the Emergency Room and Renal Dialysis Center, both of which will incorporate similar energy-reducing fixtures.

Working with the PSE&G Carbon Abatement Hospital Energy Efficiency Program, an audit identified numerous opportunities for reducing the hospital's carbon output. The most significant of these, replacement of a 600HP Babcock & Wilcox boiler, has been completed as of October 12, 2012. This significant upgrade is estimated to save 68,841 therms per year.

UPCOMING ENVIRONMENTAL ACTIVITIES:

Other recommendations that are planned for the coming year include:

Retrofit of lighting fixtures throughout the facility, replacing fluorescent with LED lights, with potential savings of 375,227 kWh.

Installation of Instantaneous Domestic Hot Water Heaters, with potential energy savings of 15,700 therms annually.

Installation of Premium Efficiency Motors, with electricity savings of 43,783 kWh.

Installation of Premium Efficiency motors with VFD's on Municipal Water Booster Pumps, estimated energy savings of 65,167 kWh.

Insulation of Steam and Hot Water piping, with potential savings of 1,320 therms.