



Bayonne Medical Center
Environmental Assessment:
Green MOU Annual Report
October 8, 2014



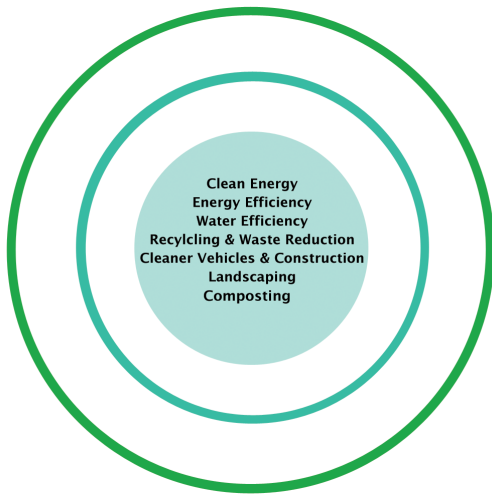
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Accomplishments

Reductions of 3,526 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.

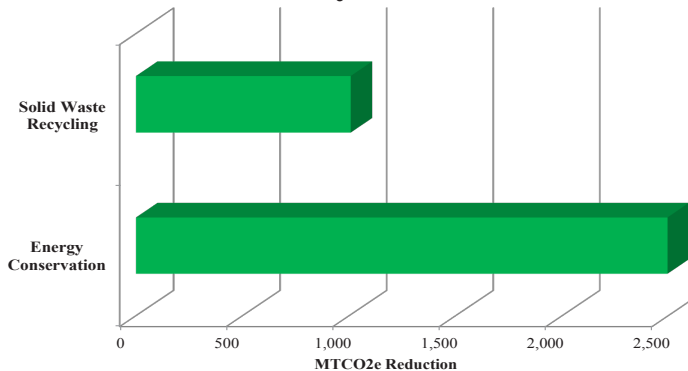
Reduction in Environmental Footprint

This is the third update Bayonne Medical Center has provided documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint. Thus far, Bayonne Medical Center has managed to reduce its carbon footprint by 3,526 MTCO₂e* and saved an estimated \$458,000 in operating expenses. 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 subsequent years of the Green MOU.

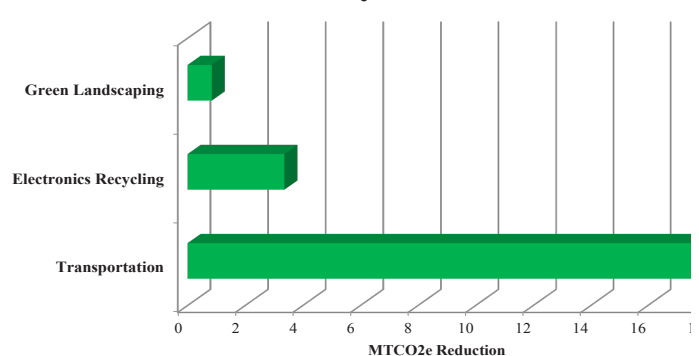
*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	2,496.7
Solid Waste Recycling	1,007.6
Green Landscaping	0.8
Electronics Recycling	3.4
Transportation	18.0
Total (MTCO ₂ e)	3,526.5

Primary Initiatives



Secondary Initiatives



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) and the EPA Pollution Prevention (P2) GHG Conversion Tool which convert 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 3,526 MTCO₂e



Greenhouse Gas Equivalencies

What does the reduction of 3,526 MTCO₂e represent ?

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

- Annual greenhouse gas emissions from 742 vehicles



- Carbon dioxide emissions from 396,816 gallons of gasoline



- Carbon dioxide emissions from 8,201 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 322 homes for one year



- Carbon dioxide emissions from 146,938 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 46.7 tanker trucks



- Carbon dioxide emissions from burning 18.9 railcars' worth of coal (over 1/4 mile long)



Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Sep 2013 Update	Sep 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star						
Total Savings (MTCO2e)		96.6	929.8	1470.3	2,496.7	\$439,005
Miscellaneous Energy Conservation				1,320 therms	7.0	\$862
Web Based Energy Competition						
Motors and Transformers				154,221 kwh	109.8	\$19,324
Lighting Project Fixtures (bulbs and ballast)		135,606 kwh	135,606 kwh	730,760 kwh	713.4	\$125,547
High Temp Hot Water Pipe Replacement						
HVAC, Chiller & Electrical						
Bulb Replacement (CFLs)						
Bulb Replacement (LEDs)						
Boiler Replacement			1,170,281.36 kwh	1,170,281.36 kwh	1,666.5	\$293,272
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)		143.9	160.3	703.4	1,007.6	\$14,430
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)				43.42 tons	10.8	\$1,737
Cardboard (construction/non-construction/sharp containers)		22.4 tons	23.2 tons	10.9 tons	176.3	\$2,260
Mixed Metal (construction/non-construction)						
Paper, Mixed		19.7 tons	21.4 tons	131.2 tons	618.6	\$6,892
Plastic, Mixed (bottles,construction/non-construction,sharp containers)		2.7 tons	2.6 tons		5.5	\$212
Can / Bottle Recycling				16.8 tons	85.2	\$672
Blue Wrap Waste Reduction						
Mixed Organics						
Food Donation (Waste diversion)						



Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Sep 2013 Update	Sep 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Biosolids and Food Waste Recycling / Composting		3.1 tons	2.5 tons	23.64 tons	4.4	\$1,169
Fluorescent Bulbs		0.64 tons	0.73 tons	1.6 tons	0.4	\$119
Ceiling Tiles Recycled						
Carpet Recycled						
Waste Oil Recycled						
Magazines / Third Class Mail						
Newspapers						
Office Paper						
Phonebooks						
Textbooks						
Dimensional Lumber						
Fly Ash						
Aluminum Cans				2.6 tons	23.7	\$104
Glass						
HDPE				3.3 tons	2.9	\$132
LDPE						
PET						
Appliances						
Non-Ferrous Metals						
Fats, Oils, Grease			660 gal	6,006 gal	80.0	\$1,133
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)			0.8		0.8	\$0
Green Roofs						
Porous Pavement						
Grass / Green Space						
Low / No Mow Area						
Re-use of Collected Stormwater						
On-Site Use of Compost / Mulch						
Moisture Sensing Sprinklers						
Number / Acres of Trees			10 trees		0.8	
Reflective Roof						
Synthetic Turf						
Native Plants						
Leaves Composted						

Environmental Metrics	Sep 2011 MOU	Sep 2012 Update	Sep 2013 Update	Sep 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Electronics/EPEAT						
Total Savings (MTCO2e)		1.3	1.4	0.6	3.4	\$84
Recycling of Electronics						
Re-Use/Donation of Used Computers						
Toner/Ink Recycling and Use of Recycled Ink						
Battery Recycling		0.82 tons	0.88 tons	0.4 tons	3.4	\$84
Mass Transit						
Total Savings (MTCO2e)						
Miles Avoided						
Transportation						
Total Savings (MTCO2e)				18.0	18.0	\$4,500
Hybrid Vehicles						
Gasoline/Ethanol Vehicles				3	18.0	\$4,500
Electric Vehicles						
Biodiesel Vehicles						
Commuter Gas Savings						
Clean Construction Vehicles						
LNG Vehicles						
Alternate Fuel Vehicles (Zipcar)						
Smartway Transporters						
Bike Racks				1		
LEED Projects						
Total Savings (MTCO2e)					0.0	\$0
Silver - 30%						
Gold - 40%						
Platinum - 45%						
Misc. - Further Clarification						
Total Savings (MTCO2e)						
NOX (equipment only)						
NOX (includes vehicles)						
MTCO2e Savings						
Total (MTCO2e)	0.0	241.8	1,092.3	2,192.4	3,526.5	\$458,019
Energy Conservation	0.0	96.6	929.8	1,470.3	2,496.7	\$439,005
Alternative Energy	0.0	0.0	0.0	0.0	0.0	\$0
Water Conservation	0.0	0.0	0.0	0.0	0.0	\$0
Solid Waste	0.0	143.9	160.3	703.4	1,007.6	\$14,430
Green Landscaping	0.0	0.0	0.8	0.0	0.8	\$0
Electronics	0.0	1.3	1.4	0.6	3.4	\$84
Transportation	0.0	0.0	0.0	18.0	18.0	\$4,500
LEED Projects	0.0	0.0	0.0	0.0	0.0	\$0



2014

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 past year.

ENERGY AUDIT

Working with the PSE&G Carbon Abatement Hospital Energy Efficiency Program, an audit was conducted by PSE&G which identified numerous opportunities for reducing Bayonne's carbon output.

The most significant of these, replacement of a 600HP Babcock & Wilcox boiler, has been completed as of October 12, 2012.

Under an agreement with PSE&G, these energy reduction projects are currently in process or completed:

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

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.