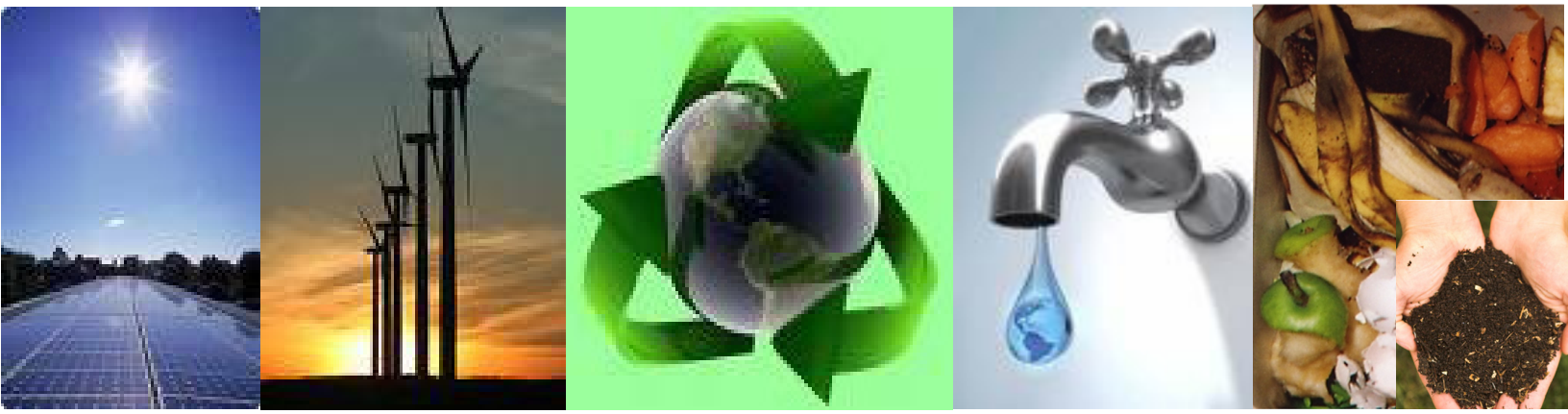
Stony Brook University Hospital
Environmental Assessment:
MOU SemiAnnual Report (revised)
March 28, 2014



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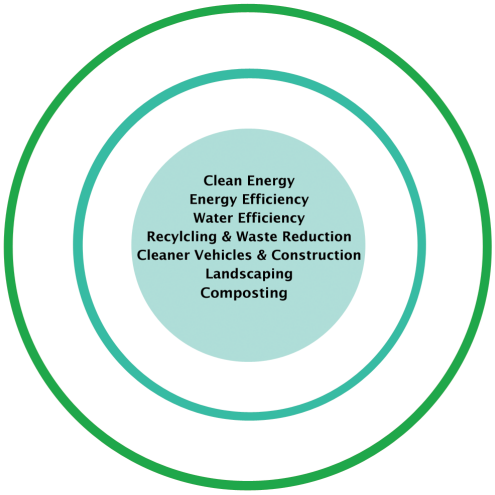
Accomplishments

Reductions of 14,916 MTCO2e



Memorandum of Understanding

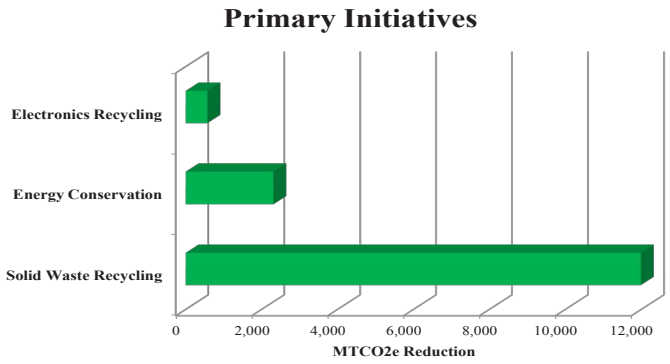
On August 26, 2009, Stony Brook University Hospital signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Stony Brook University Hospital has resulted in reducing energy, water and solid waste production across campus operations.

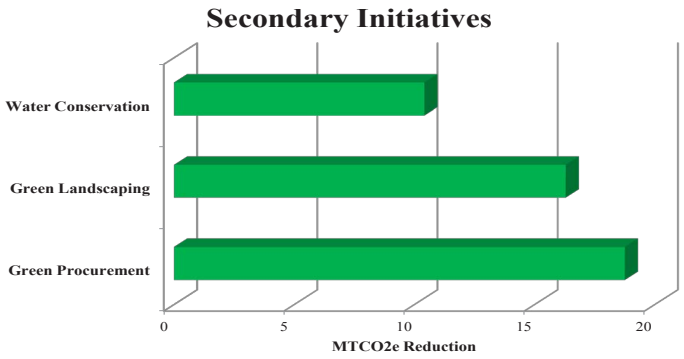
Reduction in Environmental Footprint

In the last several years, Stony Brook University Hospital has provided nine updates documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to the progressive green efforts of the organization, the hospital has managed to reduce its carbon footprint by 14,916 MTCO2e* and saved an estimated $704,000 in operating expenses.

*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO2e)	Cost Saving (est.)
Energy Conservation	2,310.2	$508,303
Water Conservation	10.4	$3,842
Solid Waste Recycling	11,989.3	$183,028
Green Procurement	18.8	$1,432
Green Landscaping	16.3	$3,260
Electronics Recycling	571.8	$4,245
Total (MTCO2e)	14,916.8	$704,110





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 that 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.

Reductions of 14,916 MTCO2e

Greenhouse Gas Equivalencies

What does the reduction of 14,916 MTCO2e represent ?
The organization's effort is equivalent to any one of the following:

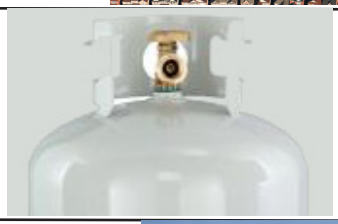
- Annual greenhouse gas emissions from 3,140 vehicles

- Carbon dioxide emissions from 1,678,497 gallons of gasoline

- Carbon dioxide emissions from 34,690 barrels of oil consumed

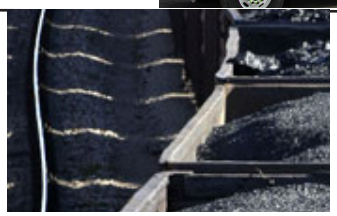
- Carbon dioxide emissions from the energy use of 1,361 homes for one year

- Carbon dioxide emissions from 621,533 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 197 tanker trucks

- Carbon dioxide emissions from burning 80 railcars' worth of coal (over 1.2 miles long)



Environmental Metrics	Aug 2009 MOU	Feb/Aug 2010 Updates	Feb/Aug 2011 Updates	Feb/Aug 2012 Updates	Feb 2013 Update	Aug 2013 Update	Feb 2014 Update	Total Conversion (MTCO2e)	Cost Saving (Est.)
Energy Conservation/Energy Star									
Total Savings (MTCO2e)	***69.5***	***138.9***	***142.2***	***148.4***	***74.7***	***868.3***	***868.3***	***2,310.2***	***$508,303***
Miscellaneous Energy Conservation									
Virtual Servers	105,777 kwh	211,554 kwh	211,554 kwh	211,554 kwh	105,777 kwh	105,777 kwh	105,777 kwh	694.7	$152,848
Energy Savings Pilot Unit 14S				7,368 kwh	3,684 kwh	3,684 kwh	3,684 kwh	12.1	$2,662
Motors and Transformers									
Lighting Fixture Projects (723 bulbs)						1,208,290 kwh	1,208,290 kwh	1,587.1	$349,196
High Temp Hot Water Pipe Replacement									
HVAC, Chiller & Electrical									
Bulb Replacement (CFLs) other than Lighting Projects									
Bulb Repl. (LEDs) other than Lighting Projects (133)			4972.5 kwh	6,955 kwh	4322.5 kwh	4322.5 kwh	4322.5 kwh	16.4	$3,597
Gas Savings									
Fuel Oil Savings									
Steam Savings									
Alternative Energy									
Total Savings (MTCO2e)									
On-Site Solar									
On-Site Wind									
On-Site Geothermal									
On-Site Combined Heat and Power									
Purchase of Green Energy/Green Power									
Water Conservation/WaterSense									
Total Savings (MTCO2e)		***1.1***	***2.3***	***2.4***	***1.5***	***1.5***	***1.5***	***10.4***	***$3,842***
Miscellaneous Water Conservation									
Low Flow/Hands Free Faucets (81 total)		5,000 gal	27,000 gal	32,000 gal	20,250 gal	20,250 gal	20,250 gal	0.3	$314
Low Flow Toilets (43 total)		12,000 gal	112,000 gal	152,000 gal	86,000 gal	86,000 gal	86,000 gal	1.2	$1,342
Low Flow Shower Heads (13 total)		11,500 gal + 1500 kwh	23,000 gal + 3000 kwh	23,000 gal + 3000 kwh	14,950 gal + 1950 kwh	14,950 gal + 1950 kwh	14,950 gal + 1950 kwh	9.0	$2,186
Low Flow Urinals									
Waterless Urinals									
Solid Waste Recycling									
Total Savings (MTCO2e)	***800.8***	***2,780.1***	***1,776.0***	***2,490.9***	***1,110.5***	***1,580.6***	***1,450.6***	***11,989.3***	***$183,028***
Mixed Recyclables (includes Wastewise)									
Pallets Waste Avoided/Wood Recycled	97 tons	216 tons	164 tons	164.17 tons	129.66 tons	136.5 tons	136.5 tons	2,567.8	$41,753
Steel Recycled during Deconstruction									
Concrete / Asphalt Recycled									
Ceiling Tile Recycled									
Carpet Recycled		1 ton						2.4	$40
Recycled C&D Waste (masonry/wood/sheetrock/fines)		104 tons	59 tons	270.2 tons	6.11 tons		130.89 tons	141.4	$22,808
Cardboard		111 tons	163.8 tons	191.22 tons	80.5 tons	99.72 tons	83.67 tons	2,270.0	$29,196
Mixed Metal (construction/non-construction)	39 tons	206 tons	86 tons	57.8 tons	4.39 tons	59 tons	47 tons	1,981.8	$19,968
Paper, Mixed	103 tons	248 tons	83 tons	287.21 tons	108.21 tons	185 tons	163 tons	4,144.5	$47,097
Plastic, Mixed	39 tons	113 tons	53 tons	28 tons	35.05 tons	20.44 tons	42.86 tons	324.7	$13,254
Blue Wrap		18 tons		4 tons		5.6 tons	0.8 tons	27.8	$1,136

Environmental Metrics	Aug 2009 MOU	Feb/Aug 2010 Updates	Feb/Aug 2011 Updates	Feb/Aug 2012 Updates	Feb 2013 Update	Aug 2013 Update	Feb 2014 Update	Total Conversion (MTCO2e)	Cost Saving (Est.)
Can/Bottle Recycling		6 tons	21 tons	13.78 tons	13.78 tons			269.3	$2,182
Mixed Organics									
Food Donation		3 tons	1.25 tons	2 tons	1 ton	.75 tons	0.5 tons	1.7	$340
Biosolids & Food Waste Recycling / Composting									
Fluorescent Bulbs	1 ton	3 tons	2.44 tons	1.5 tons	0.9 tons	1.6 tons	0.9 tons	1.4	$454
Waste Oil Recycled									
Magazines/ThirdClass Mail									
Newspaper									
Office Paper									
Textbooks			3 tons					9.3	$120
Phonebooks									
Dimensional Lumber									
Fly Ash									
Aluminum Cans									
Glass			1 ton		0.81 tons			0.5	$72
HDPE / LDPE / PET									
Appliances									
Non-Ferrous Metals									
Fats, Oils, Grease			10 tons	15.5 tons	8 tons	6.5 tons	4.5 tons	133.5	$1,780
Recycled Mixed Waste (medical equipment)	4 tons	16 tons	12 tons	24 tons	9 tons	2.4 tons	3.3 tons	113.1	$2,828
Green Procurement									
Total Savings (MTCO2e)			***17.3***		***1.5***			***18.8***	***$1,432***
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			33 tons		2.81 tons			18.8	$1,432
Construction Recycling - Glass									
Use of Coal Combustion Products									
Green Landscaping									
Total Savings (MTCO2e)		***3.9***		***0.4***	***4.0***	***4.0***	***4.0***	***16.3***	***$3,260***
Green Roofs									
Porous Pavement									
Grass									
Low/no mow area									
Re-use of Collected Stormwater									
On-Site Re-use of Compost / Mulch		2 tons						0.4	$80
Moisture Sensing Sprinklers									
Number / Acres of Trees									
Reflective Roof									
Synthetic Turf									
Native Plants									

Environmental Metrics	Aug 2009 MOU	Feb/Aug 2010 Updates	Feb/Aug 2011 Updates	Feb/Aug 2012 Updates	Feb 2013 Update	Aug 2013 Update	Feb 2014 Update	Total Conversion (MTCO2e)	Cost Saving (Est.)
Leaves Composted									
Placing Mulch over plants' root zone at ACP		17.5 tons		2 tons	20 tons	20 tons	20 tons	15.9	$3,180
Electronics Recycling									
Total Savings (MTCO2e)	***8.0***	***83.2***	***81.6***	***215.2***	***45.7***	***76.8***	***61.3***	***571.8***	***$4,245***
Recycling of Electronics	4 tons	19 tons	9 tons	4 tons	2.2 tons	5 tons	2 tons	72.3	$1,820
Re-Use/Donation of Used Computers									
Toner/Ink Recycling and Use of Recycled Ink		2 tons	3 tons	10.5 tons	1.71 tons	3 tons	2.5 tons	436.0	$840
Battery Recycling	1 ton	9 tons	6 tons	4.5 tons	5.83 tons	7 tons	6.3 tons	63.4	$1,585
Mass Transit									
Total Savings (MTCO2e)									
Miles Avoided									
Transportation									
Total Savings (MTCO2e)									
Hybrid Vehicles									
Electric Vehicles									
Biodiesel Vehicles									
Clean Construction Vehicles									
LNG Vehicles									
Alternate Fuel Vehicles (Zipcar)									
Smartway Transporters									
Bike Racks		4	4	4	4	4	4		
LEED Projects									
Total Savings (MTCO2e)									
Silver - 10%									
Gold - 17%									
Platinum - 20%									
Misc. - Further Clarification									
Total Savings (MTCO2e)									
NOX (equipment only)									
NOX (includes vehicles)									
MTCO2e Savings									
Total Savings (MTCO2e)	***878.2***	***3,007.2***	***2,019.4***	***2,857.2***	***1,237.9***	***2,531.2***	***2,385.7***	***14,916.8***	***$704,110***
Energy	69.5	138.9	142.2	148.4	74.7	868.3	868.3	2,310.2	$508,303
Water	0.0	1.1	2.3	2.4	1.5	1.5	1.5	10.4	$3,842
Solid Waste	800.8	2,780.1	1,776.0	2,490.9	1,110.5	1,580.6	1,450.6	11,989.3	$183,028
Green Procurement	0.0	0.0	17.3	0.0	1.5	0.0	0.0	18.8	$1,432
Green Landscaping	0.0	3.9	0.0	0.4	4.0	4.0	4.0	16.3	$3,260
Electronics	8.0	83.2	81.6	215.2	45.7	76.8	61.3	571.8	$4,245

Stony Brook University Hospital Additional Green MOU Accomplishments and Cost Savings

2014

Virtual Servers Enhancements

16 physical Servers were removed as SBUH continues to migrate to Virtual Servers.

Office of Sustainability

Stony Brook University formed the Office of Sustainability in December 2011. The Stony Brook University Office of Sustainability works as a proponent for positive change by partnering with the university community to help develop a sustainable culture. The Office of Sustainability utilizes the campus as a real world setting for student interaction and develops sustainable programs and services in order to decrease the University's impact on the natural environment. The Office serves as a resource for best practices of sustainable solutions that look to increase operating efficiencies, promote environmental awareness and conserve resources. Focusing on advocacy, policy development, reporting and communication, the Office utilizes a multifaceted approach to increase the University's sustainability programs.