



North Shore - LIJ Health System
Environmental Assessment:
MOU SemiAnnual Report
June 17, 2013



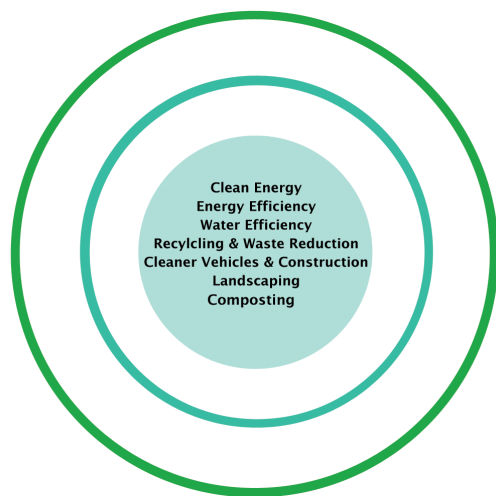
Environmental Protection Agency
Region 2

Andrew Bellina, PE
Senior Policy Advisor
212-637-4126

Jose Pillich
Michael Wanser
Research Analysts

Accomplishments

Reductions of 106,536 MTCO₂e



Memorandum of Understanding

On April 21, 2010, North Shore - LIJ Health System 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 North Shore - LIJ Health System has resulted in reducing energy, water and solid waste production across their entire operations.

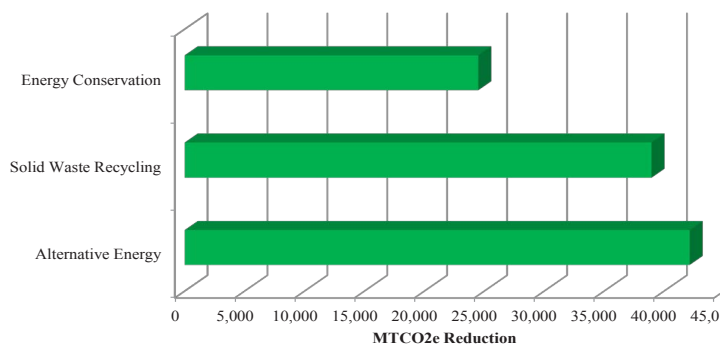
Reduction in Environmental Footprint

This is the sixth update provided by North Shore - LIJ Health System documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to their progressive green efforts, the organization has managed to reduce its carbon footprint by 106,536 MTCO₂e* and saved an estimated \$8.5 million in operating expenses.

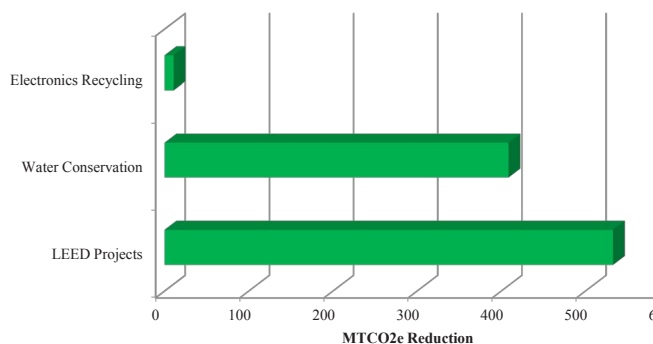
*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	24,497.7
Alternative Energy	42,137.3
Water Conservation	408.7
Solid Waste Recycling	38,949.2
Electronics Recycling	10.8
LEED Projects	532.8
Total (MTCO ₂ e)	106,536.4

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 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.

Accomplishments

Reductions of 106,536 MTCO₂e



Greenhouse Gas Equivalencies

What does the reduction of 106,536 MTCO₂e represent ?

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

- Annual greenhouse gas emissions from 22,195 vehicles



- Carbon dioxide emissions from 11,943,543 gallons of gasoline



- Carbon dioxide emissions from 247,759 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 5,483 homes for one year



- Carbon dioxide emissions from 4,439,017 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 1,405 tanker trucks



- Carbon dioxide emissions from burning 458 railcars' worth of coal (nearly 7 miles long)





Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Dec 2012 Update	May 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star									
Total Savings (MTCO2e)		4,931.1	4,711.5	5,025.9	4,056.8	2,886.2	2,886.2	24,497.7	\$4,590,618
Miscellaneous Energy Conservation		3,100,000 kwh	1,900,000 kwh	3,100,000 kwh	1,800,000 kwh	1,800,000 kwh	1,800,000 kwh	8,195.2	\$1,950,750
Motors and transformers									
Lighting Project Fixtures (Bulbs and Ballast)									
High Temp Hot Water Pipe Replacement									
HVAC, Chiller & Electrical									
Bulb Replacement (energy saving from bulb replacement)		10,000 bulbs	10,000 bulbs	10,000 bulbs	10,000 bulbs	10,000 bulbs	10,000 bulbs	1,216.6	\$289,602
Gas Savings		446,000 therms	554,000 therms	470,000 therms	430,000 therms	300,000 therms	300,000 therms	13,301.9	\$1,633,125
Fuel Oil Savings		43,600 gal	43,600 gal	43,601 gal	43,601 gal			1,783.9	\$717,141
Steam Savings									
Alternative Energy									
Total Savings (MTCO2e)		7,962.5	5,687.5	6,825.0	7,979.1	6,841.6	6,841.6	42,137.3	\$2,700,126
On-Site Solar					27,325 kwh	27,325 kwh	27,325 kwh	49.8	\$11,845
On-Site Wind									
On-Site Geothermal									
On-Site Combined Heat and Power (5.46 MW)		3.185MW	2.275MW	2.73MW	3.185MW	3.185MW	2.275MW	42,087.5	\$2,688,281
Purchase of Green Energy/Green Power									
Water Conservation/WaterSense									
Total Savings (MTCO2e)		68.1	68.1	68.1	68.1	68.1	68.1	408.7	\$512,768
Miscellaneous Water Conservation		34,000,000 gal	34,000,000 gal	34,000,000 gal	34,000,000 gal	34,000,000 gal	34,000,000 gal	408.7	\$512,768
Low Flow/Hands Free Faucets									
Low Flow Toilets									
Low Flow Shower Heads									
Low Flow Urinals									
Waterless Urinals									
Solid Waste Recycling									
Total Savings (MTCO2e)		5,401.1	5,471.8	6,268.8	5,665.5	8,115.5	8,026.5	38,949.2	\$659,668
Mixed Recyclables (includes Wastewise)				259 tons	0.5 tons (unused drugs)	0.5 tons (unused drugs)	0.45 tons (unused drugs)	729.3	\$10,418
Pallets Waste Avoided/Wood Recycled									
Concrete / Asphalt Recycled during Deconstruction									
Steel Recycled during Deconstruction									
Ceiling Tiles Recycled									
Carpet Recycled									
Recycled C&D Waste (construction waste)		400 tons	600 tons	948 tons	1,414 tons	1,090 tons	1,090 tons	1,374.4	\$221,680
Cardboard (construction/non-construction/sharp containers)		699 tons	699 tons	700 tons	700 tons	627 tons	600 tons	12,517.8	\$161,000
Mixed Metal (construction/non-construction)									
Paper, Mixed		719 tons	719 tons	720 tons	720 tons	1,551 tons	1,551 tons	21,049.6	\$239,200
Plastic, Mixed (bottles,construction/non-construction,sharp containers)									
Blue Wrap									



Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Dec 2012 Update	May 2013 Update	Total Conversion (MTCO ₂ e)	Cost Savings (est.)
Can / Bottle Recycling		121 tons	121 tons	121 tons	122 tons	88 tons	87 tons	3,257.1	\$26,400
Mixed Organics									
Food Donation (Waste diversion)									
Biosolids & Food Waste Recycling / Composting									
Fluorescent Bulbs									
Waste Oil Recycled									
Magazines / Third Class Mail									
Newspapers									
Office Paper									
Textbooks									
Phonebooks									
Dimensional Lumber									
Fly Ash			48,510 lbs					21.1	\$970
Aluminum Cans									
Glass									
HDPE / LDPE / PET									
Appliances									
Non-Ferrous Metals									
Fats, Oils, Grease									
Copper Wire									
Tires									
Green Procurement									
Total Savings (MTCO₂e)								0.0	\$0
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 - Katz Women's Hospital									
Green Landscaping									
Total Savings (MTCO₂e)								0.0	\$0
Green Roofs									
Porous Pavement									
Grass									
Low / No Mow Area									
Re-use of Collected Stormwater									
On-Site Use of Compost									
Moisture Sensing Sprinklers									
Number / Acres of Trees									

Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Dec 2012 Update	May 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Reflective Roof									
Synthetic Turf									
Native Plants									
Leaves Composted									
Electronics Recycling									
Total Savings (MTCO2e)					9.9		0.9	10.8	\$269
Recycling of Electronics					12,344 lbs		1,110 lbs (approx)	10.8	\$269
Re-Use/Donation of Used Computers									
Toner/Ink Recycling and Use of Recycled Ink									
Battery Recycling									
Mass Transit									
Total Savings (MTCO2e)								0.0	\$0
Miles Avoided									
Transportation									
Total Savings (MTCO2e)								0.0	\$0
Hybrid Vehicles									
Electric Vehicles									
Biodiesel Vehicles									
Clean Construction Vehicles									
CNG Vehicles							1 ambulance		
Alternate Fuel Vehicles (Zipcar)									
Smartway Transporters									
Bike Racks									
LEED Projects									
Total Savings (MTCO2e)						200.0	332.7	532.8	\$126,821
Silver - 10% Total (7) 100,935 sq ft						197,861.4 kwh	346,257.5 kwh	330.3	\$78,625
Gold - 17% Total (2) 10,543 sq ft						61,485.2 kwh	61,485.2 kwh	74.7	\$17,769
Platinum - 20% Total (2) 20,460 sq ft						70,188 kwh	140,376.1 kwh	127.8	\$30,427
Misc. - Further Clarification									
Total Savings (MTCO2e)								0.0	\$0
NOX (equipment only)									
NOX (includes vehicles)									
MTCO2e Savings									
Total (MTCO2e)	0.0	18,362.8	15,938.9	18,187.9	17,779.4	18,111.4	18,156.0	106,536.4	\$8,590,270
Energy Conservation	0.0	4,931.1	4,711.5	5,025.9	4,056.8	2,886.2	2,886.2	24,497.7	\$4,590,618
Alternative Energy	0.0	7,962.5	5,687.5	6,825.0	7,979.1	6,841.6	6,841.6	42,137.3	\$2,700,126
Water Conservation	0.0	68.1	68.1	68.1	68.1	68.1	68.1	408.7	\$512,768
Solid Waste Recycling	0.0	5,401.1	5,471.8	6,268.8	5,665.5	8,115.5	8,026.5	38,949.2	\$659,668
Electronics Recycling	0.0	0.0	0.0	0.0	9.9	0.0	0.9	10.8	\$269
LEED Projects	0.0	0.0	0.0	0.0	0.0	200.0	332.7	532.8	\$126,821

2013

North Shore - LIJ Health System Additional Green MOU Accomplishments and Cost Savings

In March 2013, North Shore LIJ kicked off the Carbon Footprint Challenge, in partnership with Sustainable Long Island, a local non-profit. The initiative was designed to educate employees about the impact of their everyday actions on the environment. Close to 1,000 employees have taken part in the challenge, which consisted of calculating their carbon footprint and completing an online survey. Employees were then emailed weekly tips on how to reduce their carbon footprint.

Awards

In April, North Shore University Hospital received the Practice GreenHealth Partner for Change with Distinction award at the annual Clean Med conference in Boston. This is a very competitive award that recognizes health care facilities that have achieved improvements in their mercury elimination, waste reduction, recycling and source reduction programs - above and beyond the Partner for Change award benchmarks. The Change with Distinction award criteria includes at least 20 percent recycling, generating 10 percent or less Regulated Medical Waste, a more extensive sustainability program, and more programs covering a wider range of areas (such as food, energy, water, chemical minimization, and more). Facilities must also show leadership in the local community and in the health care sector.

Combined Heat and Power

The Health System has combined heat and power installations in four of its hospitals – Plainview Hospital, the Long Island Jewish Medical Center, Staten Island North and Staten Island South. CHP is also being considered at other NSLIJ sites.

North Shore LIJ is currently investigating the installation of fuel cell technologies at several of the System's hospitals.

Clean Fuel

In April 2013, North Shore LIJ took delivery of the first Compressed Natural Gas (CNG) ambulance in the country. Over two years of research went into the development of the ambulance in conjunction with vehicle manufacturers and Clean Vehicle Solutions, a leader in the CNG vehicle industry. NSLIJ has a goal to green its fleet of ambulances and emergency vehicles to protect the environment, and reduce pollutants and noise in the neighborhoods we serve. The CNG ambulance reduces greenhouse gas emissions by about 30 percent, improves air quality and decreases fueling costs. Running on natural gas is about \$2 cheaper per gallon than diesel or gasoline prices.

LEED

To date, nine North Shore LIJ projects have achieved LEED certification, including two Platinum buildings. Currently, there are over 50 projects seeking certification through the various rating systems.