



North Shore - LIJ Health System
Environmental Assessment:
MOU SemiAnnual Report
May 27, 2014



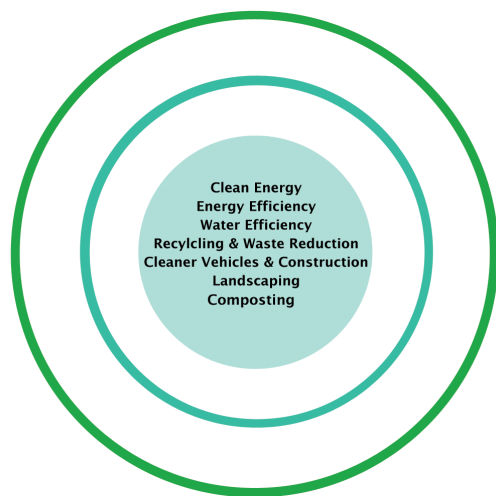
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Accomplishments

Reductions of 139,569 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.

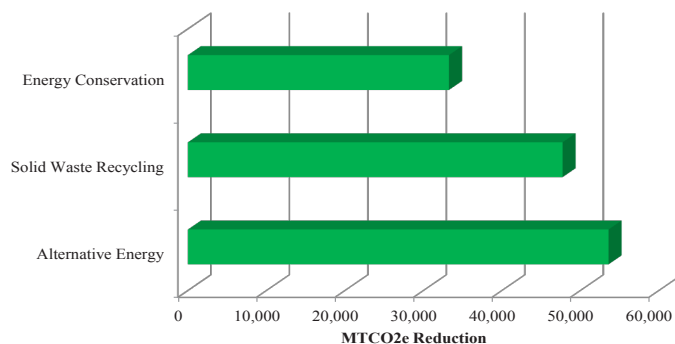
Reduction in Environmental Footprint

This is the eighth 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 139,569 MTCO₂e* and saved an estimated \$10.2 million in operating expenses.

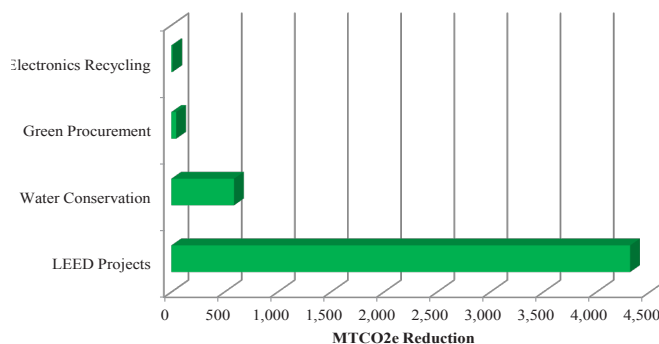
*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	33,266.1
Alternative Energy	53,597.7
Water Conservation	589.5
Solid Waste Recycling	47,743.1
Green Procurement	45.9
Electronics Recycling	10.8
LEED Projects	4,316.7
Total (MTCO ₂ e)	139,569.6

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 139,569 MTCO₂e



Greenhouse Gas Equivalencies

What does the reduction of 139,569 MTCO₂e represent ?

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

- Annual greenhouse gas emissions from 29,383 vehicles



- Carbon dioxide emissions from 15,704,917 gallons of gasoline



- Carbon dioxide emissions from 324,580 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 12,734 homes for one year



- Carbon dioxide emissions from 5,815,400 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 1,848 tanker trucks



- Carbon dioxide emissions from burning 748 railcars' worth of coal (over 11.3 miles long)



Environmental Metrics	Nov 2010 Update	Apr/Oct 2011 Updates	May/Nov 2012 Updates	May 2013 Update	Nov 2013 Update	May 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star								
Total Savings (MTCO2e)	5,099.6	10,004.8	7,148.3	2,987.3	4,013.0	4,013.0	33,266.1	\$5,893,818
Miscellaneous Energy Conservation	3,100,000 kwh	5,000,000 kwh	3,600,000 kwh	1,800,000 kwh	2,150,000 kwh	2,150,000 kwh	11,690.0	\$2,572,100
Motors and transformers								
Lighting Project Fixtures (Bulbs and Ballast)								
High Temp Hot Water Pipe Replacement								
HVAC, Chiller & Electrical								
Bulb Replacement (10,000 bulbs)	379,167 kwh	595,833 kwh	704,167 kwh	325,000 kwh	325,000 kwh	325,000 kwh	1,743.1	\$383,527
Gas Savings	446,000 therms	1,024,000 therms	730,000 therms	300,000 therms	450,000 therms	450,000 therms	18,039.4	\$2,221,050
Fuel Oil Savings	43,600 gal	87,201 gal	43,601 gal				1,793.5	\$717,141
Steam Savings								
Alternative Energy								
Total Savings (MTCO2e)	7,644.0	12,012.0	14,231.9	6,570.0	6,570.0	6,570.0	53,597.7	\$1,903,670
On-Site Solar			54,650 kwh	27,325 kwh	27,325 kwh	27,325 kwh	89.7	\$19,742
On-Site Wind								
On-Site Geothermal								
On-Site Combined Heat and Power (5.46 MW)	3.185MW	5.005MW	5.915MW	2.73MW	2.73MW	2.73MW	53,508.0	\$1,883,928
Purchase of Green Energy/Green Power								
Water Conservation/WaterSense								
Total Savings (MTCO2e)	73.7	147.4	147.4	73.7	73.7	73.7	589.5	\$683,690
Miscellaneous Water Conservation	34,000,000 gal	68,000,000 gal	68,000,000 gal	34,000,000 gal	34,000,000 gal	34,000,000 gal	589.5	\$683,690
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	11,740.7	13,781.0	8,026.5	4,461.2	4,332.7	47,743.1	\$783,358
Mixed Recyclables (includes Wastewise)		259 tons	1 ton (unused drugs)	0.45 tons (unused drugs)	0.25 tons (unused drugs)	384 tons	1,805.2	\$25,788
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	1,548 tons	2,504 tons	1,090 tons		575 tons	1,517.0	\$244,680
Cardboard (construction/non-construction/sharp containers)	699 tons	1,399 tons	1,327 tons	600 tons	291 tons	370 tons	14,573.5	\$187,440
Mixed Metal (construction/non-construction)								
Paper, Mixed	719 tons	1,439 tons	2,271 tons	1,551 tons	675 tons	558 tons	25,389.8	\$288,520
Plastic, Mixed (bottles,construction/non-construction,sharp containers)								
Blue Wrap								
Can / Bottle Recycling	121 tons	242 tons	210 tons	87 tons	239 tons		4,436.6	\$35,960
Mixed Organics								



Environmental Metrics	Nov 2010 Update	Apr/Oct 2011 Updates	May/Nov 2012 Updates	May 2013 Update	Nov 2013 Update	May 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Food Donation (Waste diversion)								
Biosolids & Food Waste Recycling / Compost								
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	45.9				45.9	\$0
Purchase of Materials with Recycled Content (paper)			139 tons 30%PC				45.9	
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								
Reflective Roof								

Environmental Metrics	Nov 2010 Update	Apr/Oct 2011 Updates	May/Nov 2012 Updates	May 2013 Update	Nov 2013 Update	May 2014 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Synthetic Turf								
Native Plants								
Leaves Composted								
Electronics Recycling								
Total Savings (MTCO2e)		0.0	9.9	0.9			10.8	\$269
Recycling of Electronics			12,344 lbs	1,110 lbs			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)		0.0	608.2	1017.4	1345.5	1345.5	4,316.7	\$949,772
Silver - 30% Total (9) 121,250 sq ft			613,343 kwh	1,073,351 kwh	1,289,382 kwh	1,289,382 kwh	2,801.3	\$616,359
Gold - 40% Total (4) 30,543 sq ft			149,486 kwh	149,486 kwh	433,062 kwh	433,062 kwh	765.2	\$168,356
Platinum - 45% Total (2) 20,460 sq ft			163,180 kwh	326,360 kwh	326,360 kwh	326,360 kwh	750.2	\$165,057
Misc. - Further Clarification								
Total Savings (MTCO2e)							0.0	\$0
NOX (equipment only)								
NOX (includes vehicles)								
MTCO2e Savings								
Total (MTCO2e)	18,218.4	33,904.9	35,972.5	18,675.7	16,463.4	16,334.8	139,569.6	\$10,214,577
Energy Conservation	5,099.6	10,004.8	7,148.3	2,987.3	4,013.0	4,013.0	33,266.1	\$5,893,818
Alternative Energy	7,644.0	12,012.0	14,231.9	6,570.0	6,570.0	6,570.0	53,597.7	\$1,903,670
Water Conservation	73.7	147.4	147.4	73.7	73.7	73.7	589.5	\$683,690
Solid Waste Recycling	5,401.1	11,740.7	13,781.0	8,026.5	4,461.2	4,332.7	47,743.1	\$783,358
Green Procurement	0.0	0.0	45.9	0.0	0.0	0.0	45.9	\$0
Electronics Recycling	0.0	0.0	9.9	0.9	0.0	0.0	10.8	\$269
LEED Projects	0.0	0.0	608.2	1,017.4	1,345.5	1,345.5	4,316.7	\$949,772

2014

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

Employee Engagement

In December 2013, Long Island Jewish Medical Center and North Shore University Hospital – two of NSLIJ's largest facilities – launched Green Teams. These Multidisciplinary teams will work toward reducing the carbon footprint of their individual facilities by launching sustainability initiatives and educating employees. Each team started its first initiative during Earth Week in April. Informational tables were set up at all hospitals. Employees were given free seed packets and information about going green at home and at work. Several facilities planted trees or gardens, or organized neighborhood clean-up projects.

Energy Conservation and the Energy Star Building and Plant Partnership Program

Comprehensive energy conservation protocols have been implemented at North Shore University Hospital and Franklin Hospital. This initiative includes the installation of new energy efficient chillers, new variable speed pumping systems, computerized boiler control systems and a lighting retrofit program. Retro-commissioning of HVAC and electrical systems at all NSLIJ hospitals commenced in December 2013. This effort is expected to further reduce energy consumption as well as help identify promising energy conservation projects.

Solid Waste Recycling and the Waste Wise Partnership Program

The Health System partnered again with the US Drug Enforcement Administration on a Drug Take-Back Day in April of this year. This program helps reduce the amount of unused prescription drugs that currently enter landfills and drinking water systems.

Combined Heat and Power (CHP) Partnership

The Health System currently 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 now being considered at other NSLIJ sites.

The Health System is also investigating the installation of fuel cell technologies at several of NSLIJ's hospitals.