



North Shore - LIJ Health System
Environmental Assessment:
MOU SemiAnnual Report
December 16, 2013



Environmental Protection Agency
Region 2

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

Jose Pillich
Michael Wanser
Research Analysts

Accomplishments

Reductions of 123,299 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.

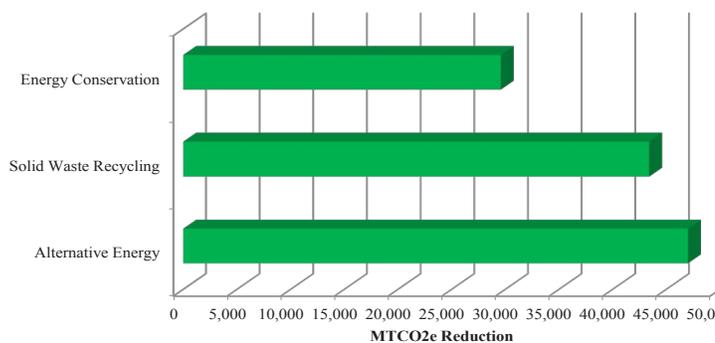
Reduction in Environmental Footprint

This is the seventh 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 123,299 MTCO₂e* and saved an estimated \$9 million in operating expenses.

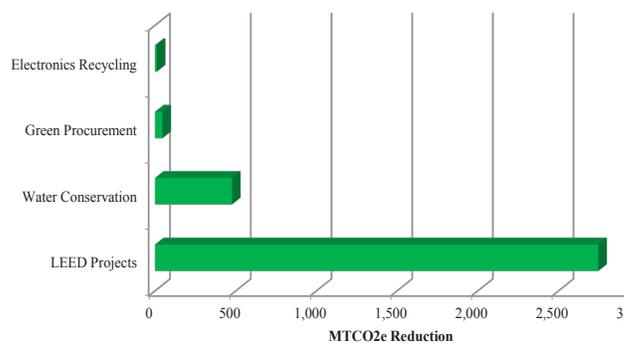
*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	29,587.2
Alternative Energy	47,022.4
Water Conservation	476.8
Solid Waste Recycling	43,410.4
Electronics Recycling	10.8
LEED Projects	2,746.3
Total (MTCO ₂ e)	123,299.7

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 123,299 MTCO₂e

Greenhouse Gas Equivalencies

What does the reduction of 123,299 MTCO₂e represent ?
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 25,687 vehicles



- Carbon dioxide emissions from 18,822,836 gallons of gasoline



- Carbon dioxide emissions from 286,743 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 6,159 homes for one year



- Carbon dioxide emissions from 5,137,488 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 1,626 tanker trucks



- Carbon dioxide emissions from burning 530 railcars' worth of coal (over 8 miles long)





Environmental Metrics	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Nov 2012 Update	May 2013 Update	Nov 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	5,089.5	29,587.2	\$5,434,131
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	2,800,000 kwh	9,894.9	\$2,355,350
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	270,833 kwh	325,000 kwh	379,167 kwh	325,000 kwh	325,000 kwh	325,000 kwh	1,413.9	\$336,565
Gas Savings	446,000 therms	554,000 therms	470,000 therms	430,000 therms	300,000 therms	300,000 therms	600,000 therms	16,494.4	\$2,025,075
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)	7,644.0	5,460.0	6,552.0	7,660.6	6,568.6	6,568.6	6,568.6	47,022.4	\$1,669,037
On-Site Solar				27,325 kwh	27,325 kwh	27,325 kwh	27,325 kwh	66.4	\$15,794
On-Site Wind									
On-Site Geothermal									
On-Site Combined Heat and Power (5.46 MW)	3.185MW	2.275MW	2.73MW	3.185MW	2.73MW	2.73MW	2.73MW	46,956.0	\$1,653,243
Purchase of Green Energy/Green Power									
Water Conservation/WaterSense									
Total Savings (MTCO2e)	68.1	68.1	68.1	68.1	68.1	68.1	68.1	476.8	\$598,229
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	34,000,000 gal	476.8	\$598,229
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	4,461.2	43,410.4	\$707,918
Mixed Recyclables (includes Wastewise)			259 tons	0.5 tons (unused drugs)	0.5 tons (unused drugs)	0.45 tons (unused drugs)	0.25 tons (unused drugs)	730.0	\$10,428
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	291 tons	13,422.8	\$172,640
Mixed Metal (construction/non-construction)									
Paper, Mixed	719 tons	719 tons	720 tons	720 tons	1,551 tons	1,551 tons	675 tons	23,425.6	\$266,200
Plastic, Mixed (bottles,construction/non-construction,sharp containers)									
Blue Wrap									



Environmental Metrics	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Nov 2012 Update	May 2013 Update	Nov 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Can / Bottle Recycling	121 tons	121 tons	121 tons	122 tons	88 tons	87 tons	239 tons	4,436.6	\$36,000
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)				22.9	22.9			45.9	\$0
Purchase of Materials with Recycled Content (paper)				69.5 tons 30%PC	69.5 tons 30%PC			45.9	
Purchase / Use of Compost Socks									
Purchase of EPEAT Products									
Use of Recycled Steel dur. Construction									
Use of Recycled Iron dur. 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 / Reflective Roof									
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	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Nov 2012 Update	May 2013 Update	Nov 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
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		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)					562.1	940.4	1243.7	2,746.3	\$653,575
Silver - 30% Total (9) 121,250 sq ft					613,343 kwh	1,073,351 kwh	1,289,382 kwh	1,806.6	\$430,043
Gold - 40% Total (4) 30,543 sq ft					149,486 kwh	149,486 kwh	433,062 kwh	444.4	\$105,634
Platinum - 45% Total (2) 20,460 sq ft					163,180 kwh	326,360 kwh	326,360 kwh	495.3	\$117,898
Misc. - Further Clarification									
Total Savings (MTCO2e)								0.0	\$0
NOX (equipment only)									
NOX (includes vehicles)									
MTCO2e Savings									
Total (MTCO2e)	18,044.3	15,711.4	17,914.9	17,483.8	18,223.5	18,490.7	17,431.1	123,299.7	\$9,063,159
Energy Conservation	4,931.1	4,711.5	5,025.9	4,056.8	2,886.2	2,886.2	5,089.5	29,587.2	\$5,434,131
Alternative Energy	7,644.0	5,460.0	6,552.0	7,660.6	6,568.6	6,568.6	6,568.6	47,022.4	\$1,669,037
Water Conservation	68.1	68.1	68.1	68.1	68.1	68.1	68.1	476.8	\$598,229
Solid Waste Recycling	5,401.1	5,471.8	6,268.8	5,665.5	8,115.5	8,026.5	4,461.2	43,410.4	\$707,918
Green Procurement	0.0	0.0	0.0	22.9	22.9	0.0	0.0	45.9	\$0
Electronics Recycling	0.0	0.0	0.0	9.9	0.0	0.9	0.0	10.8	\$269
LEED Projects	0.0	0.0	0.0	0.0	562.1	940.4	1,243.7	2,746.3	\$653,575

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

Employee engagement

In August 2013 North Shore LIJ Health System initiated the Green Workspace Certification program; a step-by-step process for employees in a specific department to gain recognition for working together to reduce their environmental footprint by adopting sustainable practices. Employees who sign up for the program must attend a three hour course, complete a self-assessment checklist and they undertake steps to “green” their space. Since launching the program, 30 employees have taken the course, representing 24 different departments across the health system, and, three departments have already received their certificate.

Recycling and waste stream reduction

The Health System has implemented a comprehensive recycling and waste diversion program at each of its hospitals. This program will allow NS-LIJ to become true stewards of its local environment, meeting its commitments to the EPA and the NYC Mayor’s Carbon Challenge. Leadership at every hospital received a briefing on the program and floor-by-floor, unit-by-unit education is taking place.

Carbon Footprint Analysis

The 2012 report was completed in October. These reports provide an analysis of the Scope I direct emissions categories (stationary, mobile fuel consumption and refrigerant loss), of the Scope 2 indirect emissions (purchased electricity and steam) and Scope 3 indirect emissions (including paper consumption, water consumption, waste disposal and employee travel). The analysis determined that greenhouse gas emissions due to the health system’s energy usage declined by 9.2% since the baseline year.

Compressed Natural Gas Ambulance

NS-LIJ is now the owner of two compressed natural gas ambulances. There has been a significant amount of interest from fleet managers across LI, NYC and elsewhere. Center for Emergency Management personnel have showcased the ambulances at various clean energy/transportation conferences.

Awards

NS-LIJ participated in, and helped to plan, the first Car Free Day Long Island event held on Friday September 20, 2013. Car Free Day is an international event held annually that encourages people to leave their cars at home for a day and either take public transportation or carpool. The intent is to raise awareness of the harmful effects of emissions from vehicles and reduce congestion on the roads. Over 2500 people on Long Island pledged to be car free or car-lite that day and over 25% of them were NS-LIJ employees, making NS-LIJ the organization with the most number of employee pledges. As the winner, NS-LIJ was awarded a BikeLid bicycle storage unit that will be installed at one of its facilities.