



North Shore - LIJ Health System
Environmental Assessment:
MOU SemiAnnual Report
November 29, 2011



Environmental Protection Agency
Region 2

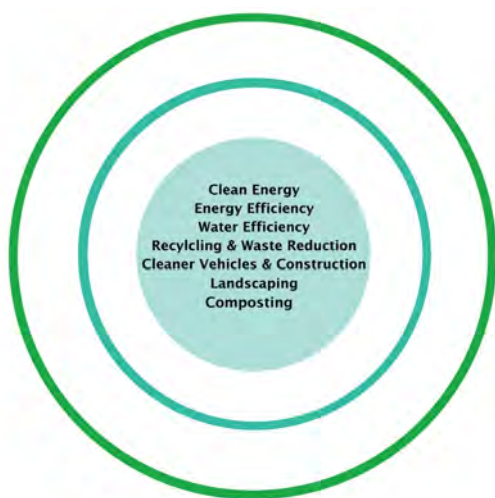
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Accomplishments

Reductions of 50,322 MTCO₂e



Memorandum of Understanding

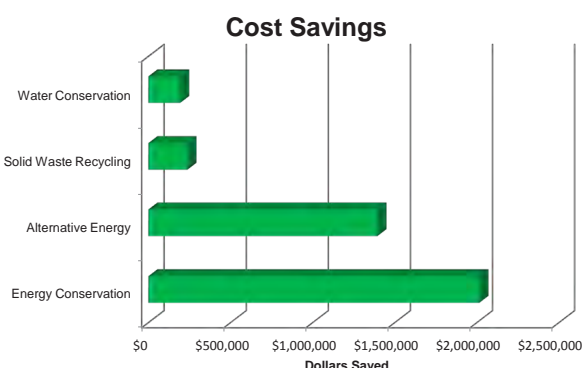
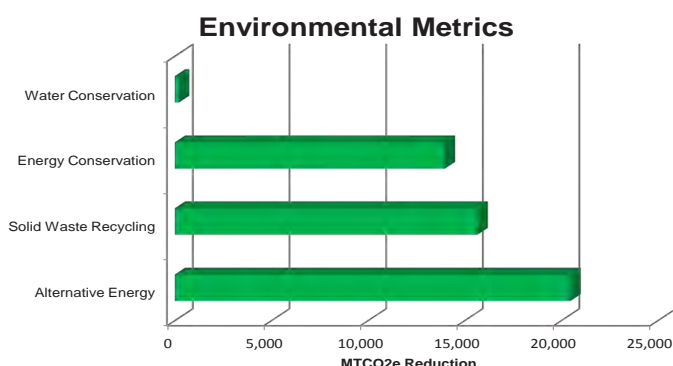
On April 21, 2010, North Shore - LIJ Health System signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United 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 third 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 50,322 MTCO₂e* and saved an estimated \$3,800,000 in operating expenses.

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	13,969.4
Alternative Energy	20,475.0
Water Conservation	213.4
Solid Waste	15,664.6
Total (MTCO ₂ e)	50,322.4

*Metric Ton Carbon Dioxide Equivalent



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) which converts 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 50,322 MTCO₂e

Greenhouse Gas Equivalencies

What does the reduction of 50,322 MTCO₂e represent ?

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

- Annual greenhouse gas emissions from 9,867 vehicles



- Carbon dioxide emissions from 5,641,525 gallons of gasoline



- Carbon dioxide emissions from 117,029 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 4,357 homes for one year



- Carbon dioxide emissions from 2,096,767 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 664 tanker trucks



- Carbon dioxide emissions from burning 274 railcars' worth of coal (over 4 miles long)





Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star						
Total Savings (MTCO2e)		4,676.6	4,488.8	4,804.0	13,969.4	\$2,015,820
Miscellaneous Energy Conservation		3,100,000 kwh	1,900,000 kwh	3,100,000 kwh	5,135.6	\$835,920
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	1,034.3	\$77,400
Gas Savings		446,000 therms	554,000 therms	470,000 therms	7,799.4	\$1,102,500
Fuel Oil / Steam Savings						
Alternative Energy						
Total Savings (MTCO2e)		6825.0	6825.0	6825.0	20,475.0	\$1,395,000
On-Site Solar / Wind / Geothermal						
On-Site Combined Heat and Power (5.46 MW)		2.73MW	2.73MW	2.73MW	20,475.0	\$1,395,000
Purchase of Green Energy/Green Power						
Water Conservation/WaterSense						
Total Savings (MTCO2e)		71.1	71.1	71.1	213.4	\$193,619
Miscellaneous Water Conservation		34,000,000 gal	34,000,000 gal	34,000,000 gal	213.4	\$193,619
Low Flow/Hands Free Faucets						
Low Flow Toilets / Shower Heads / Urinals						
Waterless Urinals						
Solid Waste/Industrial Materials Reuse/Green Products						
Total Savings (MTCO2e)		2,472.5	4,160.9	9,031.3	15,664.6	\$237,970
Mixed Recyclables (includes Wastewise)				259 tons	743.3	\$10,360
Re-Use/Purchase of Materials with Recycled Content						
Pallets Waste Avoided/Wood Recycled						
Use of Recycled Steel / Iron during Construction						
Use of Recycled Plastic / Aluminum during Construction						
Use of Recycled Concrete / Asphalt during Construction						
Use of Coal Combustion Products - Katz Women's Hospital						
Concrete / Asphalt Recycled						
Carpet / Ceiling Tiles Recycled						
Recycled C&D Waste (construction waste)		400 tons	600 tons	948 tons	483.1	\$77,920
Cardboard (construction/non-construction/sharp containers)		400 tons	800 tons	1,869 tons	9,513.9	\$122,760
Mixed Metal (construction/non-construction)						
Paper, Mixed						
Plastic, Mixed (bottles,construction/non-construction,sharp containers)						
Blue Wrap						
Can / Bottle Recycling		150 tons	200 tons	299 tons	4,903.2	\$25,960
Mixed Organics						
Food Donation (Waste diversion)						
Biosolids & Food Waste Recycling / Composting						
Fluorescent Bulbs						
Waste Oil Recycled						
Newspapers / Magazines / Third Class Mail						
Office Paper						
Textbooks / Phonebooks						
Dimensional Lumber						
Fly Ash			48,510 lbs		21.1	\$970
Aluminum Cans						
Glass						



Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
HDPE / LDPE / PET						
Appliances						
Non-Ferrous Metals						
Fats, Oils, Grease						
Copper Wire						
Tires						
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						
Synthetic Turf						
Native Plants						
Leaves Composted						
Electronics/EPEAT						
Total Savings (MTCO2e)					0.0	\$0
Recycling of Electronics						
Re-Use/Donation of Used Computers						
Toner/Ink Recycling and Use of Recycled Ink						
Battery Recycling						
Purchase of EPEAT Products						
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						
LNG Vehicles						
Alternate Fuel Vehicles (Zipcar)						
Smartway Transporters						
Bike Racks						
MTCO2e Savings						
Total (MTCO2e)	0.0	14,045.2	15,545.8	20,731.4	50,322.4	\$3,842,409
Energy	0.0	4,676.6	4,488.8	4,804.0	13,969.4	\$2,015,820
Alternative Energy	0.0	6,825.0	6,825.0	6,825.0	20,475.0	\$1,395,000
Water	0.0	71.1	71.1	71.1	213.4	\$193,619
Solid Waste	0.0	2,472.5	4,160.9	9,031.3	15,664.6	\$237,970
Green Landscaping	0.0	0.0	0.0	0.0	0.0	\$0
Electronics	0.0	0.0	0.0	0.0	0.0	\$0
Mass Transit	0.0	0.0	0.0	0.0	0.0	\$0
Transportation	0.0	0.0	0.0	0.0	0.0	\$0

2011

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

NSLIJHS Results Demonstrate a 33% Improvement Since the Last Update

Through increased green and sustainable activities during the last 6 months, NSLIJHS has dramatically increased its carbon footprint reduction this period by 33%, from approximately 15,000 to over 20,000 MTCO₂e, with a total reduction now over 50,000 MTCO₂e.

Sustainability Program

Continuing progress has been made in organizing the Health System's Sustainability Program. The Sustainability Working Group is functioning. Senior management has given full support to the program and implementation is occurring throughout the Health System.

Recycling and Waste Stream Reduction

The Health System is continuing to work on its waste handling and recycling initiatives. It is installing recycling bins in all of the System hospitals and encouraging their use; working with the Procurement Department; and continuing to give attention to the disposable products and equipment used in the housekeeping and environmental functions of their facilities.

Alternative Energy

The Health System's first solar energy facility was completed when a 50 kw photovoltaic rooftop array began generating electricity at Southside Hospital in October 2011.

Additional Green and Sustainable Activities:

- Increasing communications through a variety of tactics within the Health System to educate employees about the Sustainability Initiative
- Integrating the Sustainability Program into the Health/Community Benefit functions of the Health System
- Developing a Five-Year Plan for the Sustainability Program, with strategy and goals for each component of the program
- Opening a medical / surgical supplies Distribution Center in December, 2011. All deliveries will be made to this facility, with reusable totes of supplies being distributed to each nursing unit. This process allows for a substantial reduction in packaging materials and therefore reduced waste.
- Working with those responsible for the transportation programs to identify and plan for the implementation of sustainable practices, including car-pooling, park-and-ride strategies and to identify portions of the vehicle fleet that can convert to more fuel efficient engines
- Working to create an infrastructure that will support the implementation of more operational improvements, and receive employee ideas to be responsive and set the tone for a culture change across the system.
- NSLIJ is working with its landscaping contractors to encourage the recycling of organic material. Green, vegetative roof systems are being studied by the Health System - they recently applied for a grant to convert the roof into a garden at the Steven and Alexandra Cohen Children's Medical Center of New York, part of the LIJ Medical Center in Queens.
- Every physical construction project that is seeking certification under the LEED rating system is tasked with achieving the LEED category "Materials and Resources" Credit 2 Construction Waste Management. This credit mandates that at least 75 percent of the construction and demolition debris is diverted from landfills to achieve LEED credits.
- The Health System has partnered with the US Drug Enforcement Administration on three Drug Take-Back Days, the most recent of which was on October 29, 2011. Over 800 lbs of unused or expired medications were collected.
- NSLIJ is using synthetic gypsum drywall (which uses stack cleaning by-products to create gypsum) on its new construction projects.

Medical Functions

- NSLIJ has engaged a vendor to take its open-unused supplies, and some equipment, from the Operating Rooms and reprocess it for distribution and use to underserved nations. The program is still being deployed – with some facilities complete and some in the middle of education of their staff.
- NSLIJ is studying the use of the Regen system for medical waste – which produces a fluff substance that has been sterilized and can be used as an alternative source of energy.
- Fluid management systems for the Operating Rooms are also under review. This program would result in a substantial reduction in medical waste.
- NSLIJ is almost completely converted away from traditional radiology photoprocessing to digital methods.
- The Pharmacy team is beginning to review waste metrics to evaluate process improvement opportunities to reduce waste.

Food Services

- NSLIJ has begun pilot implementations and testing of BioDigester systems in the Food and Nutrition Operations of our hospitals to reduce food-related waste that goes into the general waste stream.
- Elimination of Styrofoam - The Health System Office of Procurement is putting out a bid to multiple vendors to analyze the opportunity to convert away from Styrofoam.
- Some facilities are also participating in City Harvest, the food rescue and distribution organization NSLIJ is working to gather metrics on its participation in the program and plans to roll out the program and involve other facilities.