



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



**Environmental Protection Agency**  
**Region 2**

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## Accomplishments

**Reductions of 89,277 MTCO<sub>2</sub>e**



## 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.

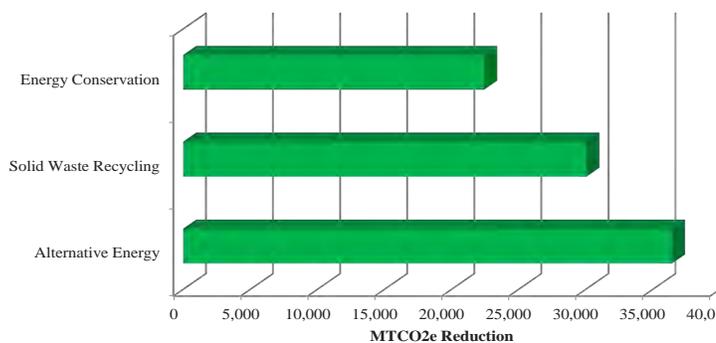
## Reduction in Environmental Footprint

This is the fifth 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 89,277 MTCO<sub>2</sub>e\* and saved an estimated \$6,200,000 in operating expenses.

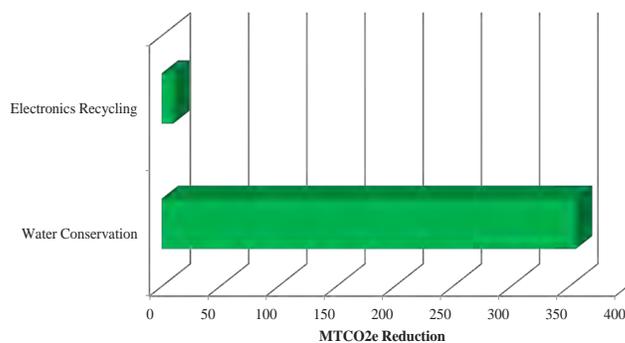
\*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO <sub>2</sub> e)
Energy Conservation	22,428.2
Alternative Energy	36,434.7
Water Conservation	355.7
Solid Waste Recycling	30,048.6
Electronics Recycling	9.9
Total (MTCO <sub>2</sub> e)	89,277.0

### 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) which converts standard metrics for electricity, green energy, fuel use, chemical use, water use, and sustainable materials management into MTCO<sub>2</sub>e.

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 MTCO<sub>2</sub>e 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 89,277 MTCO<sub>2</sub>e

## Greenhouse Gas Equivalencies

What does the reduction of 89,277 MTCO<sub>2</sub>e represent ?  
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 18,599 vehicles



- Carbon dioxide emissions from 10,008,632 gallons of gasoline



- Carbon dioxide emissions from 207,621 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 4,595 homes for one year



- Carbon dioxide emissions from 3,719,875 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 1,177 tanker trucks



- Carbon dioxide emissions from burning 384 railcars' worth of coal (over 5 3/4 miles long)





Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Dec 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
<b>Energy Conservation/Energy Star</b>								
<b>Total Savings (MTCO2e)</b>		<b>4,979.0</b>	<b>4,733.7</b>	<b>5,077.6</b>	<b>4,069.8</b>	<b>3,568.1</b>	<b>22,428.2</b>	<b>\$3,089,640</b>
Miscellaneous Energy Conservation		3,100,000 kwh	1,900,000 kwh	3,100,000 kwh	1,800,000 kwh	2,800,000 kwh	8,052.3	\$1,310,640
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	919.4	\$129,000				
Gas Savings		446,000 therms	554,000 therms	470,000 therms	430,000 therms	300,000 therms	11,672.5	\$1,650,000
Fuel Oil Savings		43,600 gal	43,600 gal	43,601 gal	43,601 gal		1,783.9	
Steam Savings								
<b>Alternative Energy</b>								
<b>Total Savings (MTCO2e)</b>		<b>7962.5</b>	<b>5687.5</b>	<b>6825.0</b>	<b>7979.8</b>	<b>7979.8</b>	<b>36,434.7</b>	<b>\$2,330,640</b>
On-Site Solar					27,325 kwh	27,325 kwh	34.7	\$5,640
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	36,400.0	\$2,325,000
Purchase of Green Energy/Green Power								
<b>Water Conservation/WaterSense</b>								
<b>Total Savings (MTCO2e)</b>		<b>71.1</b>	<b>71.1</b>	<b>71.1</b>	<b>71.1</b>	<b>71.1</b>	<b>355.7</b>	<b>\$322,698</b>
Miscellaneous Water Conservation		34,000,000 gal	355.7	\$322,698				
Low Flow/Hands Free Faucets								
Low Flow Toilets								
Low Flow Shower Heads								
Low Flow Urinals								
Waterless Urinals								
<b>Solid Waste Recycling</b>								
<b>Total Savings (MTCO2e)</b>		<b>5,704.0</b>	<b>5,774.7</b>	<b>6,589.8</b>	<b>5,969.6</b>	<b>6,010.6</b>	<b>30,048.6</b>	<b>\$516,690</b>
Mixed Recyclables (includes Wastewise)				259 tons		1 ton (unused drugs)	746.2	\$10,400
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	1,568 tons	1,222.6	\$197,200
Cardboard (construction/non-construction/sharp containers)		699 tons	699 tons	700 tons	700 tons	700 tons	10,843.8	\$139,920
Mixed Metal (construction/non-construction)								
Paper, Mixed		719 tons	719 tons	720 tons	720 tons	720 tons	12,629.0	\$143,920
Plastic, Mixed (bottles,construction/non-construction,sharp containers)								
Blue Wrap								
Can / Bottle Recycling		121 tons	121 tons	121 tons	122 tons	122 tons	4,585.9	\$24,280





Environmental Metrics	Apr 2010 MOU	Nov 2010 Update	Apr 2011 Update	Oct 2011 Update	May 2012 Update	Dec 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Synthetic Turf								
Reflective Roof								
Native Plants								
Leaves Composted								
<b>Electronics Recycling</b>								
<b>Total Savings (MTCO2e)</b>					9.9		9.9	\$247
Recycling of Electronics					12,344 lbs		9.9	\$247
Re-Use/Donation of Used Computers								
Toner/Ink Recycling and Use of Recycled Ink								
Battery Recycling								
<b>Mass Transit</b>								
<b>Total Savings (MTCO2e)</b>							0.0	\$0
Miles Avoided								
<b>Transportation</b>								
<b>Total Savings (MTCO2e)</b>							0.0	\$0
Hybrid Vehicles								
Electric Vehicles								
Biodiesel Vehicles								
Clean Construction Vehicles								
LNG Vehicles								
Alternate Fuel Vehicles (Zipcar)								
Smartway Transporters								
Bike Racks								
<b>LEED Projects</b>								
<b>Total Savings (MTCO2e)</b>							0.0	\$0
Silver - 10%						4 bldgs		
Gold - 17%						2 bldgs		
Platinum - 20%						1 bldg		
<b>Misc. - Further Clarification</b>								
<b>Total Savings (MTCO2e)</b>							0.0	\$0
NOX (equipment only)								
NOX (includes vehicles)								
<b>MTCO2e Savings</b>								
<b>Total (MTCO2e)</b>	0.0	18,716.6	16,267.0	18,563.5	18,100.3	17,629.8	89,277.0	\$6,259,915
Energy Conservation	0.0	4,979.0	4,733.7	5,077.6	4,069.8	3,568.1	22,428.2	\$3,089,640
Alternative Energy	0.0	7,962.5	5,687.5	6,825.0	7,979.8	7,979.8	36,434.7	\$2,330,640
Water Conservation	0.0	71.1	71.1	71.1	71.1	71.1	355.7	\$322,698
Solid Waste Recycling	0.0	5,704.0	5,774.7	6,589.8	5,969.6	6,010.6	30,048.6	\$516,690
Electronics Recycling	0.0	0.0	0.0	0.0	9.9	0.0	9.9	\$247

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

### Medical functions

North Shore LIJ has engaged a vendor to take its open-unused supplies in the Operating Rooms and reprocess it for distribution and use to underserved nations. This vendor is also taking equipment that is being replaced throughout the System (large scale purchase replacements) such as beds and IV poles. This program has been in deployment and North Shore LIJ is continuing to look for additional process improvement opportunities and for additional equipment that can be donated.

North Shore LIJ has converted away from traditional radiology photo-processing to digital methods with the exception of research based equipment that requires traditional processes.

The Pharmacy team is also beginning to review waste metrics for process improvement opportunities to reduce waste. North Shore LIJ has an existing vendor relationship to pick up expired medications for return and proper disposal.

### Food Services

North Shore LIJ has begun pilot implementation and testing of BioDigester systems in the Food and Nutrition Operations of its hospitals to reduce food-related waste that goes into the general waste stream.

Elimination of Styrofoam - The Health System Office of Procurement has conducted a procurement process to analyze the opportunity to convert away from Styrofoam. The largest obstacle has been the incremental cost to convert to a material of sufficient quality, while addressing additional budget cuts to the affected departments. The Food and Nutrition Value Analysis Team and the procurement staff continue to work together to find a cost-effective solution for the elimination of Styrofoam.

Some facilities are also participating in City Harvest, the food rescue and distribution organization. North Shore LIJ is working to gather metrics on its participation in the program and plan to roll out the program and involve other facilities.

The Food and Nutrition Departments have very little unused food that goes to waste in their facilities. They are exploring room service models to implement over the next few years that will enhance patient choice (as opposed to a spoken menu model) and should reduce food waste from unconsumed patient meals. This is a long term strategy that will require additional technology and staff, but it is being piloted in a few areas of the organization. The Food and Nutrition departments are also participating in a community benefit program to help collect diabetic-friendly foods in a community food drive.

### Office practices

North Shore LIJ is utilizing a vendor to dispose of confidential documents through shredding and disposal of the shredded paper at a pulp facility that recycles the material into new paper products.

A number of IT-related vendors have agreements with us that require e-waste handling to maximize recycling. North Shore LIJ has gathered the documentation from multiple sub-vendors ensuring the appropriate disposal of green waste. The current large-scale replacement of patient televisions includes a responsible e-waste disposal process.

Printing and Printer Cartridges - North Shore LIJ is exploring the potential to collect and recycle used printer cartridges across the system. North Shore LIJ is also exploring the potentiality to use recycled and reprocessed cartridges in its printers.

North Shore LIJ has converted capable networked printer devices throughout the Health System facilities to default to double-sided. This initiative has received significant positive feedback from employees. During the transition, defaults to include banner pages were reset.