



# Carbon Footprint Challenge

## Overview

Sustainable Long Island and North Shore-LIJ Health System have partnered on the Carbon Footprint Challenge, an initiative designed to increase awareness of pollution prevention, educate health system employees about strategies for minimizing pollution and improving sustainability in order to build healthier homes, work places, and communities.

## Project Components

### *Education and Information Sharing:*

Researching best practices and developing informational materials that provide tips, techniques and successful case studies of pollution prevention strategies within the health care sector; disseminating information to North Shore-LIJ employees by distributing materials and holding in-person seminars; and sharing information with broader audiences via participating organization's networks. Of most interest to participants was the exciting information shared about smart phone apps that help to monitor and/or enhance energy efficiency, recycling, or other sustainability practices.

### *Raising Awareness, Measuring, and Training:*

Utilizing existing online tools to determine carbon footprints within the health system and establishing baseline measurements for pollution levels and resource use; facilitating seminars to educate employees about impacts on pollution levels, how to track measurements over time, and steps they can take to reduce pollution; and training volunteer employees to conduct seminars and lead pollution prevention efforts.

### *Encouraging Replication:*

Developing guidelines and a toolkit for other health systems to follow in establishing their own similar campaigns in order to reduce and prevent pollution throughout New York State.

**What follows is a review of our methodology, data analysis, and lessons learned through the process, in effort to serve as a resource for other health systems who are interested in implementing pollution prevention and sustainability techniques within their facilities.**

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## Methodology

**Best Practices Research:** to better understand how diverse aspects of sustainability can be implemented at an individual and system-wide scale, while providing a range of techniques that can be tailored to match one's needs. Research was also conducted so that existing experience with community outreach and engagement could be enhanced with knowledge of how other health systems have worked to raise employees' awareness and involvement. This helped us to be better able to implement an initiative that would be more meaningful and encourage greater participation amongst the staff.

**Train-the-Trainer Sessions:** these sessions were designed to enlist select staff as champions of the Carbon Footprint Challenge who would communicate the goals of the initiative to their colleagues and encourage widespread participation across the health system in reducing pollution and improving sustainability. The presentation included guidelines for how best to be a champion for the campaign by empowering colleagues to:

- a) Participate in the Carbon Footprint Challenge Survey to establish a baseline for the North Shore-LIJ Health System
- b) Complete Eco Hatchery's Carbon Footprint Calculator to raise awareness of and measure one's environmental impact
- c) Attend a Lunch and Learn (an information sharing forum during lunch)
- d) Motivate and engage colleagues to participate in the campaign
- e) Increase awareness about how to reduce pollution
- f) Implement pollution prevention tips at home and in the workplace
- g) Participate in the follow-up survey to be administered at the close of the campaign to determine where improvements have been made

**Carbon Footprint Calculator & Survey:** these tools were utilized to establish a baseline measure of carbon footprint across the North Shore-LIJ Health System to which future improvements could be compared.

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## Methodology

**Survey (Continued):** Sustainable Long Island and North Shore-LIJ reviewed several online carbon footprint calculators and determined that Eco Hatchery’s calculator best suited the needs of the initiative because it was one of the few surveys that included nutrition and transportation factors in determining an individual’s carbon footprint. The health system has existing programs that encourage ridesharing and “Meatless Mondays.” We also developed a brief online survey to understand how employees use resources and where changes can be made to improve upon their individual and collective environmental impact. Each tool was administered twice, once at the start of the Carbon Footprint Challenge and once at the close, to track progress overtime.

**Lunch & Learns:** designed as educational workshops, the Lunch and Learns included a presentation, informational material, and the opportunity to complete the Carbon Footprint Calculator and Survey on-site. Small, eco-friendly incentives were raffled off to generate excitement and drive participation. Sustainable Long Island and North Shore-LIJ conducted these sessions at facilities in Long Island, Manhattan, Staten Island, and Queens.

**Data Analysis:** to collect information related to the pollution prevention and sustainability practices of North Shore-LIJ employees, the Carbon Footprint Challenge Survey was administered twice using an online tool called Survey Monkey. The initial survey was used to establish a baseline measurement of environmental impact, and the follow up survey helped us to track progress made toward sustainability over the course of the initiative. Data was cleaned and organized—duplicate entries were removed, incorrect values were taken out, and all items were sorted for analysis. To enable comparison, the survey questions remained the same, with a few additional feedback questions added to the follow up survey to identify what worked well and how the initiative or similar ones could be improved upon in the future.



## Best Practices Research

Sustainability in health care uses a forward-thinking, holistic approach to operations, maintenance, and future growth, while redefining patient care, engaging staff, and being a good neighbor. Not only do sustainable practices and policies have a positive impact on the environment, they can also improve the bottom line – enhancing productivity, recruiting and retaining employees, and building partnerships that can further advance these efforts within the community.

Many health systems share common goals with the decision to move toward sustainability. These include preventing and minimizing waste, reducing energy and water usage, and being more conscious of how resources are used. Often the reasons for such a transition could be to more clearly demonstrate the mission through respectful work environments or to assume a leadership role in responsible buildings and operations. Implementing sustainability practices and policies also offers health systems the opportunity to engage the surrounding community in environmental design and construction, while demonstrating an alternative way to operate its facilities.

Making a commitment to sustainability requires leadership from within who can implement procedures and policies and engage employees in the effort to ensure their success. It also demands clearly defined, yet flexible process that is open to continuous improvement. It is recommended that businesses seeking to become more sustainable “assess and set goals, plan and prioritize actions, implement change and measure results, and monitor and improve performance (NYSP2I).”

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## Pollution Prevention Tips: Energy

**Conserve energy!** Turn off lights and power down electronics when not in use.

**Switch part or all of your electricity to green power** – sign up for LIPA’s Green Choice Program. This voluntary program enables customers to designate 50 or 100% of their electric consumption as green power, helping to reduce dependence on fossil fuels.

Keep an eye out for the **ENERGY STAR** label on equipment and products – making this switch can help you to reduce your energy bill by 30%, cut electric lighting charges by 40%, and minimize pollution.

Want to cut water-heating costs? **Turn the temperature down** on your water heater to 120 degrees Fahrenheit and reduce associated costs by 6-10%.

Using **cold water in the wash** can save the average household over \$40 per year with an electric water heater and over \$30 per year with a gas water heater.

Make sure your home appliances are running at **peak efficiency**. This will help to save electricity, conserve resources, and minimize your environmental impact.

**Keep your refrigerator at 35-38 degrees Fahrenheit** to prevent wasting energy. To maximize efficiency of older models, leave space between the wall and refrigerator and keep the condenser coils clean. Make sure to check and replace, if necessary, the seals around the door.

**Program your thermostat.** Turn the temperature up in the summer and down in the winter.

**Use light colors** on interior and exterior walls to reflect more light.

**Open blinds during the day** to bring in sunlight, rather than turning on lights.



## Pollution Prevention Tips: Food

### **Eat food that's in season.**

When grocery shopping, try to **purchase less processed food**.

If possible, **shop at a local grocery store, supermarket, or farmers' market.**

**Organic is good, and sometimes local is better.** Depending on where the food is grown and shipped from, the amount of greenhouse gas emitted may be more due to vehicle miles traveled (VMT).

**Buy only what you need,** and prevent food waste.

**Try to lower the amount of meat in your diet.** Eating more fruit and vegetables requires less resources and produces fewer greenhouse gas emissions. Participate in Meatless Mondays!

**Minimize food waste.** When food is disposed of in landfills, it decomposes and releases methane, a greenhouse gas that is a significant contributor to global warming. Cut back on the amount of unused food in your household by planning your purchases ahead and buying only what you need.



## Pollution Prevention Tips: Green Procurement

Purchase products that contain recycled materials.

**Look for reusable and/or recyclable packaging** when buying food or other products. This can help to cut back carbon dioxide emissions.

At the grocery store, **select the type of bag you are most likely to reuse** in your home or workplace.

### In the Workplace

Request that **supplies be delivered in reusable packaging** that can be reused for your products or returned to the vendor.

When feasible, **make purchases in bulk** and request small quantities for materials with a shelf life.

**Change the purchasing policies within the office** – buy recycled products, reusable utensils, plates, and cups for meetings, and ENERGY STAR certified office equipment.

**Implement a green cleaning program** that requires the purchase and use of less toxic cleaners.



## Pollution Prevention Tips: Transportation

**Take small steps to improve your fuel economy and cut back on greenhouse gas emissions** by easing up on the brakes and gas pedal, avoiding hard accelerations, and reducing time spent idling to no more than 30 seconds. Unloading unnecessary items from the trunk helps to reduce weight.

**Follow the manufacturer's maintenance schedule, get regular tune-ups, and use the recommended grade of motor oil.** Maintenance helps your car become safer and more reliable, while also enhancing fuel-efficiency and reducing greenhouse gas emissions.

**Check your tire pressure** regularly to prevent wear, maintain fuel economy, and reduce emissions. For every pound below the recommended level, gas mileage falls 1%. Find the correct tire pressure for your vehicle on the door to its glove compartment or on the driver's side door pillar.

**Take a break from driving** – carpool or use public transportation whenever possible. By leaving your car at home for only two days a week, you'll reduce greenhouse emissions by an average of two tons annually.

Think about **purchasing a new or used fuel-efficient, low greenhouse gas emitting vehicle.** With the range of options available, it is easier to be financially and environmentally sustainable.

### In the Workplace

**Carpool to meetings**, when possible.

**Utilize conference calls, webinars or Skype**, when possible.

**Use the North Shore-LIJ shuttle** to travel to meetings, when possible.

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## Pollution Prevention Tips: Waste

Reduce carbon dioxide emissions by 850 pounds a year by **recycling all of the newspaper, cardboard, glass, and metal in your household.**

Recycling a single aluminum can save enough energy to light a 100 watt bulb for twenty hours.

**Replace disposable items**, i.e. silverware, dishes, and plates, with reusable alternatives.

Receive materials in **reusable and/or recyclable containers**. If possible, **return the empty containers to suppliers.**

Check out **LIPA's Refrigerator Recycling Program**, which can help you to save more than \$200 annually on your energy bill by recycling your old appliance.

When making home improvements, try to **buy recycled products** – this reduces the amount of material entering landfills. There are many household items that are made from recycled materials, including flooring, woodwork, insulation, and some outdoor products for landscaping.

Identify strategies for **reducing loss of materials** due to spoilage or expiration.

**Find less toxic alternatives** to common products used for cleaning, painting or other maintenance and improvements.

### In the Workplace

**Use reusable water bottles and coffee cups.**

**Take a reusable lunch container to work** rather than using paper bags.

Cut down on ordering single use water bottles for meetings – **use a pitcher with cups instead.**

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## Pollution Prevention Tips: Water

Hazardous products flow from the drains in your household through treatment plants and into our watershed – **take caution before pouring any substances.**

**Find and fix leaks** to prevent water waste.

**Install water-efficient** faucets, shower-heads, and appliances.

Rinsing dishes by hand can use up to 20 gallons of water before they're loaded into the dishwasher! **Save water** by using ENERGY STAR qualified dishwashers and detergents designed not to require pre-rinsing.

Operate dishwashers and washing machines **only when full.**

Implement strategies that help to **reuse water** where possible.

**Alter your irrigation patterns**—use landscaping that requires less water and be aware of the time of day that your lawn, plants, and garden are watered. **Adjust watering frequency** based on weather, soil moisture, and plant conditions.

**Sweep** driveways, parking lots, walkways, and stairs instead of rinsing them off with a hose.



## Seasonal Resources: Summer

Save from \$300-\$700 over the next five years: **do not run your second refrigerator.** By unplugging your second refrigerator and properly recycling it, you can also prevent 5,500 to 20,000 pounds of greenhouse gas emissions.

A new **ENERGY STAR qualified refrigerator** uses less energy than a 60-watt light bulb that is on continuously. ENERGY STAR qualified refrigerators also use at least 20% less energy than required by current federal standards.

To **reduce humidity in your basement**, make sure the dryer is not venting inside the basement. Be sure to check that the ground next to the foundation slopes away and outdoor downspouts – vertical pipes that carry rainwater down from the roof gutter - lead at least 3 feet away from the foundation.

Some of the **most common indications that you may need a dehumidifier** are: musty smells, presence of mold and mildew, rotting wood, condensation on windows, and increased allergies. If the air in your home is too moist, it will encourage the growth of mildew, mites, and mold, which are common allergens.

Compared to incandescent light bulbs, **ENERGY STAR qualified CFLs** last about 10 times longer and produce about 75% less heat, which reduces cooling costs. They also are required to have manufacturer-backed warranties and meet strict energy efficiency and performance requirements.

**ENERGY STAR qualified fixtures** and lamps feature stylish designs and are available in a variety of models, including replacements for recessed cans in the kitchen, globes for the bathroom vanity and other bulbs that have the same shape and give off the same light as an incandescent.

By plugging your electronics, such as DVD players, televisions, or computers, into an **advanced power strip**, you'll have easy access in powering down multiple electronics all at once. Purchase the right-sized advance power strip for the right application. The more outlets a strip has, the more energy it consumes.

**Check faucets for leaks**—a single drop of water per second can waste as much as 10 gallons of water a week and hundreds of dollars per year.

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## Seasonal Resources: Fall & Back to School

Ask an energy efficiency expert to conduct a **comprehensive home energy assessment** and recommend the best ways to reduce energy waste and improve the comfort of your home. For most New Yorkers, this audit is free!

North Shore-LIJ Health System is implementing a green energy audit program at all of its hospitals. **Be on the lookout** for the free energy day at your site!

Take advantage of NYSERDA's **low-interest loans** to help pay for energy improvements—including payment through your utility bills—and cash-back incentives.

“Set it and forget it!” Regulate your home’s temperature when you are at home, asleep, or away by installing and properly using a **programmable thermostat**. Save up to \$200 on energy costs.

Lighting accounts for nearly 12% of the average household’s energy bill. Check out the selection of **ENERGY STAR qualified bulbs**, and offset initial costs with lifetime savings. **Learn about lumens**, which measure the amount of light a bulb produces rather than how much energy it uses, or wattage.

Pay attention to lumens to make it easier to buy the amount of light you need. An ENERGY STAR qualified bulb with more lumens produces bright light while fewer lumens produce dimmer light. A 60-watt light bulb is the equivalent of about 800-850 lumens

**Stop stand-by or “vampire load”** with advance power strips. A smarter version of the traditional power strip, these simple, affordable devices are good for appliances and electronics that consume energy when turned off.

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## Seasonal Resources: Fall & Back to School

Save energy and money! **ENERGY STAR qualified refrigerators** use 20% less energy than conventional models. Depending on the model year of your current appliance, you may save up to \$200 on annual energy costs. To qualify for ENERGY STAR, compact or mini-fridges, defined as less than 7.75 cubic feet in volume and 36 inches or less in height, must use at least 20% less energy than the minimum federal standard.

An **ENERGY STAR qualified computer**, depending on the amount of use, produces between 30 and 65% energy savings in comparison to a conventional computer. Desktops, integrated desktops, laptops, workstations and small-scale servers are all eligible to earn the ENERGY STAR label.

**Power management is also important to saving energy**, as computers are now used more hours per day than in the past. ENERGY STAR power management features place computers into a low-power "sleep mode" after a designated period of inactivity. Simply hitting a key on the keyboard or moving the mouse awakens the computer in a matter of seconds.

Desk lights are often used for many hours a day, consuming energy and emitting heat. **ENERGY STAR qualified desk lamps** provide high-quality light, save energy, and give off less heat. When compared with standard incandescent light bulbs, they use 75% less energy and last 10 times longer.

The **ENERGY STAR label** can be found on everything from standard TVs and HD-ready TVs, to the largest flat-screen LCD and plasma models. ENERGY STAR qualified televisions are on average **more than 40% more energy efficient** than standard models.



## Seasonal Resources: Winter & Holiday

Give your family the gift of energy savings with **ENERGY STAR qualified electronics** such as computers, printers, televisions, battery chargers, Blu-Ray players, DVD players and cordless phones. These products use less energy than products without the ENERGY STAR label.

Use **rechargeable batteries** for additional savings. While these batteries have a higher initial cost, they can be recharged and used many times and have less impact on the environment as disposable batteries.

**Don't forget advanced power strips.** Eliminate standby or "phantom" power from electronics that continually draw power, even when they are turned off.

Look for the **ENERGY STAR label when purchasing lights**, and **use an automatic timer** for turning your decorative lights on and off. ENERGY STAR qualified decorative light strings featuring light-emitting diodes or **LED technology** consume 70% less energy than conventional incandescent light strands, can last up to 10 times longer, are cool to the touch, reduce the risk of fire in your home, and if a single bulb burns out, the rest of the LED string will stay lit.

**Plan your shopping trips carefully.** Taking many short trips can use twice as much fuel as a longer one that covers the same distance. Stop by the store on your way home from work to conserve.

**Drive sensibly**—aggressive driving wastes gas and can lower your mileage by as much as 33% on the highway and 5% around town.

When cooking or baking, **don't be tempted to open the oven door.** Every time you do, the temperature drops 25 degrees, forcing your oven to work harder and use more energy. Save more energy by **heating multiple items** in the oven together, or by **turning off the oven 10 to 15 minutes early** to let residual heat finish the job.

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## Data Analysis

The data analysis took place in two parts: first, to establish a baseline measurement of North Shore-LIJ employees' resource use and second, to track progress made over the course of the three-month Carbon Footprint Challenge. Both analyses will be summarized in the following pages, along with a comparison that examines what improvements have been achieved.

### Establishing a Baseline for North Shore-LIJ

Sustainable Long Island and North Shore-LIJ reviewed several carbon footprint calculators for use in the initiative and determined that Eco Hatchery's Carbon Footprint Calculator best suited our needs because it was one of the few surveys that included nutrition and transportation in the calculations of carbon footprint. North Shore-LIJ employees were asked to complete the carbon footprint calculator, using best estimates or averages when necessary, and submit the Individual Carbon Footprint Number (the calculator provided two measurements: one for household carbon footprint, one for individual).

When the final results were collected and prepared for analysis, the data was cleaned to exclude any responses that were blank, written as a percentage or were not an individual carbon footprint number. Outliers were removed, as to not skew the analysis. Based on the remaining data, the average individual carbon footprint number of North Shore-LIJ employees was 16.18 tons per year, which is slightly higher than the national average of 11.9 tons/year provided by Eco Hatchery. The median individual carbon footprint was 11.49 tons/year, based upon the survey results.

### Recycling

Survey respondents were asked to provide information about what types of materials they recycle while at home, ranging from plastics and glass to food waste. The results make clear that the participants are already practicing pollution prevention and sustainability techniques, and the majority of those surveyed indicated that they recycle the most common household recyclables. Of the 834 respondents, 93% recycle plastic, 91% recycle glass, and 89% recycle aluminum.



## Data Analysis

### Recycling

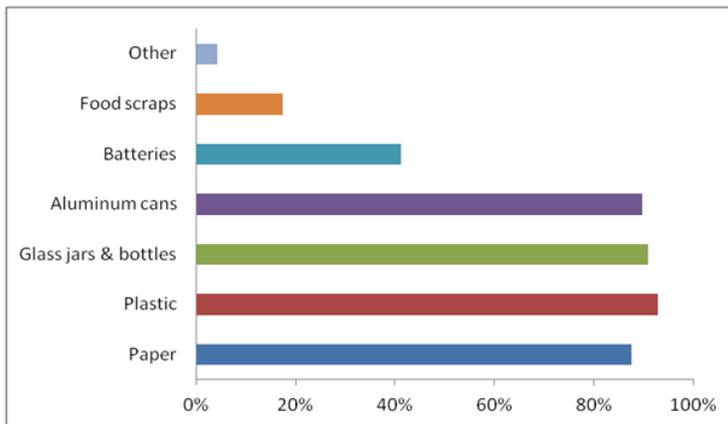


Figure 1. Types of materials recycled at home.

Other recycled items include: aluminum, bottle caps, can tabs, boxes, newspaper, building supplies, cardboard, clothes, furniture, household items, coffee grounds, computers, printers, copper, grass clippings, leaves, electronics, eyeglasses, e-waste, fabrics, ink cartridges, hangers, light bulbs, metal, oil, plastic bags, reuse glass jars, yard and waste.

### Energy Conservation

The Carbon Footprint Challenge Survey also addressed issues of energy conservation within the household, asking for participants to demonstrate the various ways that they minimize the amount of energy used. Most of the survey respondents (74%) use energy sparingly while at home and 70% check for Energy Star labels on electronics and appliances when possible. Additionally, adjusting the thermostat is a common practice with 67% of respondents indicating that this is a household practice, while slightly fewer respondents check for proper insulation and swap out the air conditioner for a fan. A small percentage of survey respondents indicated that they have requested energy audits, though this number may change now that Sustainable Long Island and North Shore-LIJ have partnered with LI Green during some of the Lunch and Learns to encourage employees to learn about how to sign up for a free energy audit. LI Green is a regional company who aims to help residents across Long Island achieve maximum energy efficiency within their homes, starting with a comprehensive home energy audit.



# Data Analysis

## Energy Conservation

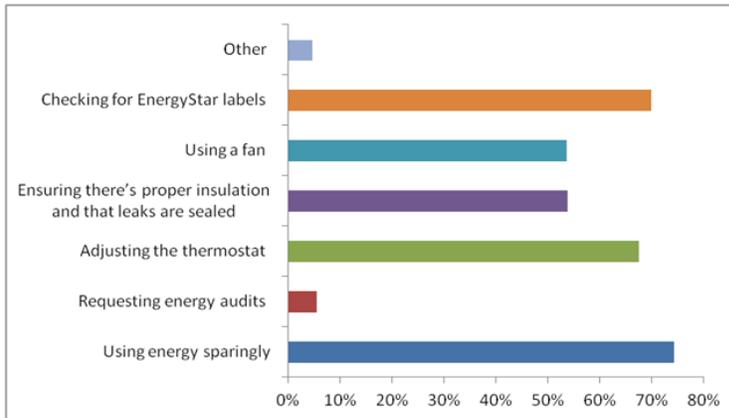


Figure 2. Techniques for conserving energy.

Other energy efficiency measures include: keeping lights turned off, using more efficient lighting, sealing cracks in windows and doors, unplugging appliances, using programmable thermostats and timers for lights, installing solar panels, replacing older appliances, hanging laundry to dry, using a pellet stove for heat, not using central air conditioning, and reducing water temperature.

## Diet

Not only does what one eats impact their health, but also it has an effect on the environment. How food is grown, processed, and distributed all contribute to one's carbon footprint. To measure this impact, the Carbon Footprint Challenge asked survey respondents to identify what type of diet they adhere to: omnivorous, primarily plant-based, vegetarian, or vegan. The majority of respondents (61%) indicated that they are omnivorous – eating both plants and meat, while a significant percentage follows a primarily plant-based diet (35%). Very few respondents identify as vegetarian (4%) or vegan (1%).

## Diet

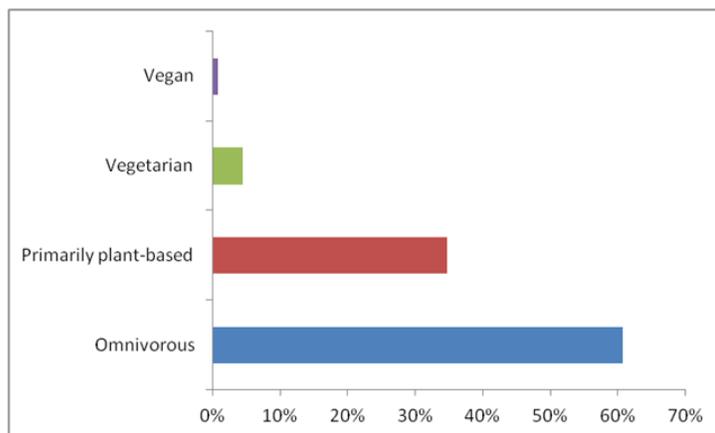


Figure 3. Types of diets held by survey respondents.



## Data Analysis

### Transportation

Another measure the Carbon Footprint Challenge Survey took into account was mode of transportation to and from work. The survey provided a range of options for respondents to select from, including driving alone, ridesharing, public transit, and biking. As Long Island is largely auto-dependent, the commuting patterns reflected by the survey results were very much aligned with the prevalent means of getting around the region. Of the employees who responded, 84% drove alone to and from work while in comparison just seven percent took public transportation, five percent carpool or use rideshare, and two percent walked. This indicator is one where great improvements can be made, especially in areas where the health system is already trying to make improvements – there’s a rideshare program available to employees, a shuttle bus available at certain facilities, and teleconferencing is encouraged.

Some survey respondents indicated that they rely upon a combination of methods to commute to work, including alternating between driving alone and walking, biking, or taking public transportation and switching from carpooling to public transportation. Others shared that they use a hybrid vehicle, and a couple work from home to avoid the commute altogether.

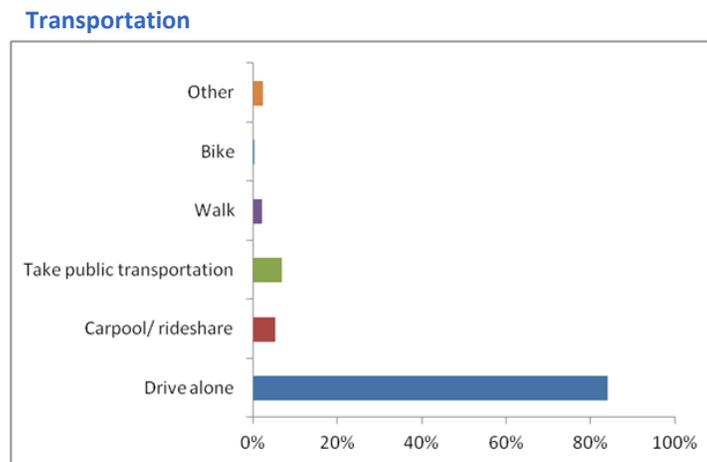


Figure 4. Modes of commuting to and from work.



## Data Analysis

### Sustainability in the Workplace

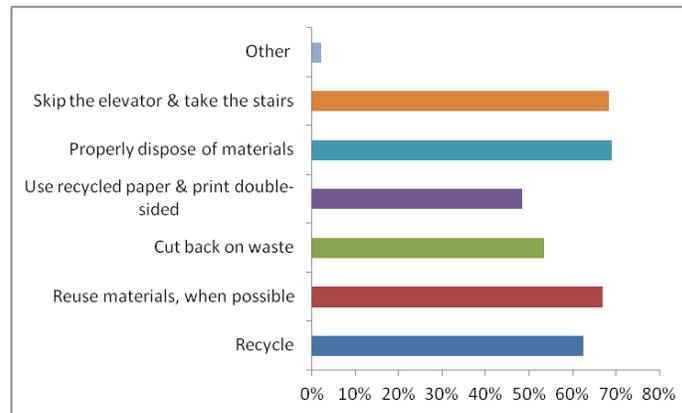


Figure 5. Resource use within North Shore-LIJ facilities.

### Sustainability in the Workplace

To better understand employees' sustainability patterns while at work, the Carbon Footprint Challenge Survey requested information about resource use, including energy, materials, and waste. Most survey respondents properly dispose of materials (69%), take the stairs (68%), and reuse materials (67%). Many also recycle within their facilities (62%) and make efforts to reduce waste (53%). It is evident that North Shore-LIJ employees use resources wisely; however, there is still room for improvements to be made within these areas.

Other items include: turning off lights when not in use, going paperless, not relying on the bus to get around the parking lot, cutting back on printing, bringing their own food containers, starting recycling initiatives, printing double-sided and multiple pages per sheet, working from home, and using reusable mugs and cups.



## Data Analysis

### Corporate Leadership

One theme that emerged from our best practices research is that leadership development should precede the implementation of system-wide sustainability initiatives. This enables companies to first have an individual or group of individuals who understand the goals and how sustainability works that can develop a comprehensive strategy for improving upon the footprint the company and its employees have, while being a resource to employees and an advocate for getting involved. These leaders can form a green team or committee that conduct outreach, initiate sustainability practices, encourage participation, and track progress toward sustainability.

### Employee Awareness

North Shore-LIJ has a strong commitment to sustainability and has been making great progress in revolutionizing their health system through steps to become a more sustainable workplace and a socially responsible neighbor in the communities in which they are located. The leadership and commitment exists; the goal of this initiative was to raise awareness and expand employee participation. By including the following series of questions in the Carbon Footprint Survey, our aim was to measure employees' awareness of efforts within their facilities to improve the environment through pollution prevention and sustainability. We anticipated that the results would indicate how well internal communications are reaching employees while generating further participation from employees who are interested in advancing sustainability efforts. Of the North Shore-LIJ employees who participated in the survey, 61% were unsure if their facility had a green team or committee, 21% answered that their facility does have a green team or committee, and 18% said "No."

Employee Awareness

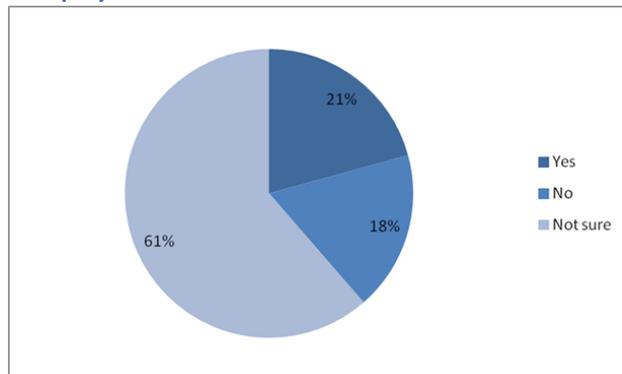


Figure 6. Does your facility have a green team or committee?



## Data Analysis

As a recommended step for follow up, it may be valuable for the health system to distribute information about green teams/committees that exist and detail how employees can get involved. Additionally, for facilities where there is interest among employees to start a green team, resources to help coordinate such an effort could be provided.

### Green Procurement

Building upon this inquiry into employees' knowledge of what pollution prevention and sustainability techniques exist within their facility, the Carbon Footprint Challenge also asked whether or not green procurement policies were in place at their site. There was a similar pattern in the results for this question and the previous "Does your facility have a green team or committee?" question, as 65% responded they were not sure, 24% said yes, and 11% said no, their facility does not have a green procurement policy in place.

Green Procurement Awareness

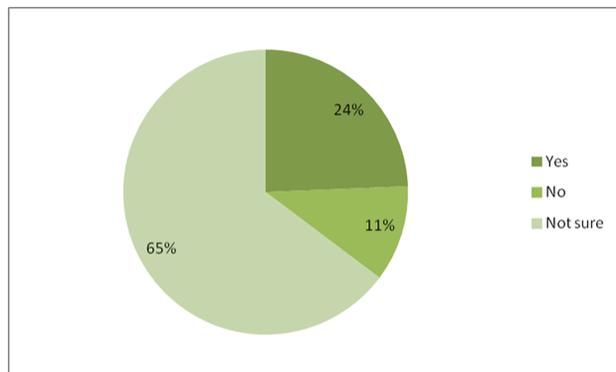


Figure 7. Does your facility have a green procurement policy in place?

Facility Sustainability Awareness

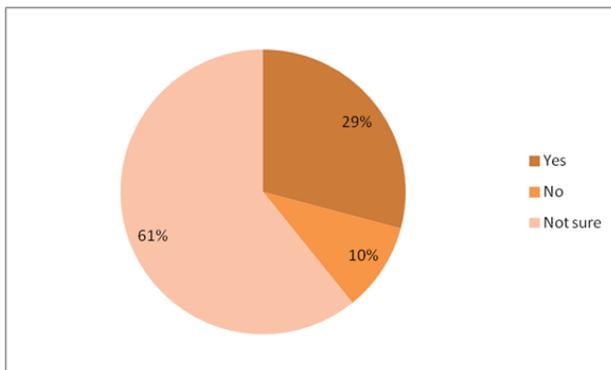


Figure 8. Has your facility implemented sustainability techniques and/or policies?

### Facility Sustainability

As the health system is making significant strides toward sustainability, it would be further beneficial to share information about how materials are procured to increase awareness, involvement, and even a sense of pride within their employees, patients, and guests. There could also be steps taken to identify how a green procurement policy meets the needs of a facility and possibilities for the health system to work with its vendors to meet its sustainability goals.



## Data Analysis

Like the previous two questions, many of the survey respondents were unsure about whether or not their facility had implemented sustainability techniques and/or policies. However, there were a greater percentage of survey respondents who said yes, that their facilities did employ strategies for improving sustainability. Only a small percentage said that the facilities in which they worked did not currently have sustainability techniques and/or policies in place. This is also an area where the health system's leadership can be a valuable tool in increasing awareness and coordinating efforts to reduce pollution and negative environmental impacts through sustainability practices.

### Tracking Progress Toward Sustainability

The number of North Shore-LIJ employees who completed the follow up Carbon Footprint Challenge Survey, adjusting for duplicates and entries without names, was 373. Of these respondents, 352 had completed the initial survey and 21 had not.

As done with the initial Carbon Footprint Challenge Survey results, the data collected from the follow up survey were cleaned to exclude any responses that were blank, entered as a percentage, or were not an individual carbon footprint number. Outliers were removed from the data set. The average individual carbon footprint number, based on the data from the follow up survey, was 14.92 tons per year. This is a slight reduction from the baseline measurement of 16.18, which may be an indicator that North Shore-LIJ employees are implementing pollution prevention and sustainability tips received through the initiative. The median individual carbon footprint number was 10.64, a reduction from 11.49 tons per year in the initial survey.

### Recycling

Of the survey respondents who completed the follow up survey, 97% recycle plastic, 94% recycle glass jars and bottles, and 93% recycle paper. Additionally, 92% recycle aluminum. These numbers show a small increase in the amount of employees who recycle these types of materials, as compared with the initial survey data. A more significant change can be seen in the rate of respondents who recycle batteries: up to 52% from 41% in the initial survey.

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## Data Analysis

Other recycled items include: automobiles, aluminum foil, plastic bags, cardboard, clothes, compost, construction material, electronics, cartridges, fabrics, light bulbs, lawn/yard clippings, eyeglasses, cell phones, paints, scrap metal, and wood.

### Recycling

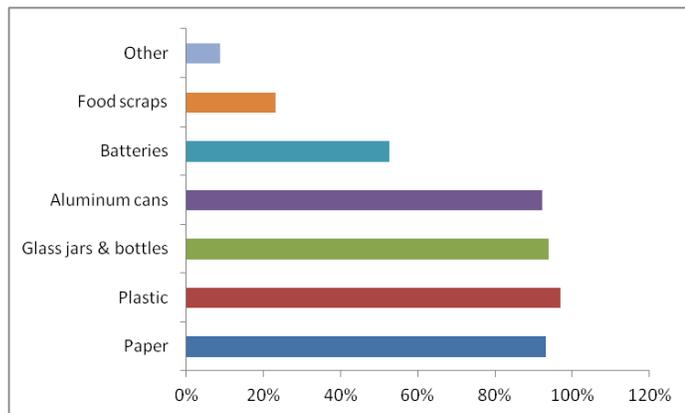


Figure 9. Recycling patterns, as show in the follow up survey.

### Energy Conservation

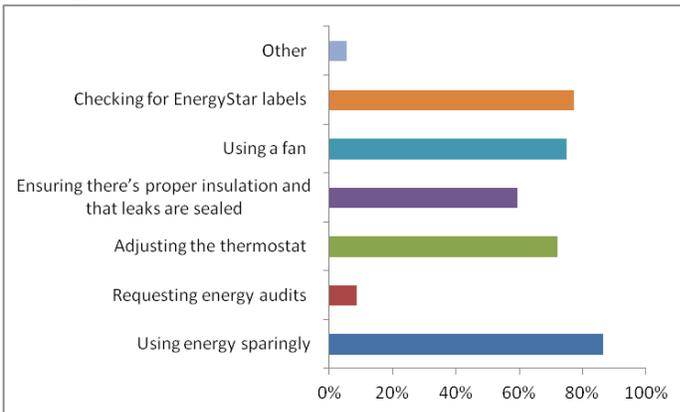


Figure 10. How energy is conserved (Follow Up Survey).

### Energy Conservation

The follow up survey also revealed similar patterns with energy use and conservation measures, with 86% of respondents using energy sparingly, 77% seeking Energy Star appliances, 75% using fans instead of air conditioners. Many also adjust the thermostat to conserve resources (72%), and more than half (59%) check for proper insulation and sealed leaks.



## Data Analysis

### Diet

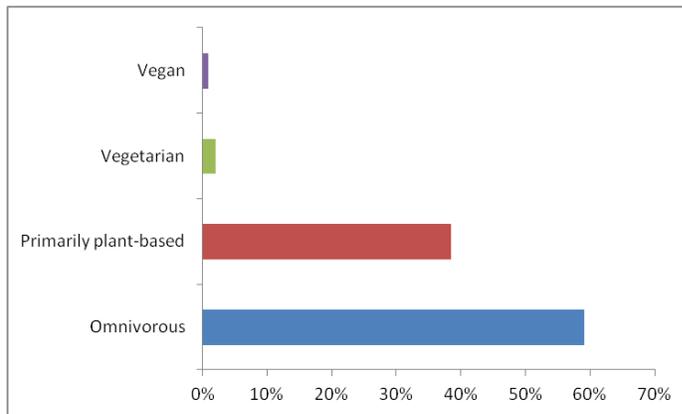


Figure 11. Types of diets (Follow Up Survey).

### Diet

The follow up Carbon Footprint Challenge survey demonstrated only slight differences in the types of diets recorded in the data: 59% of respondents are omnivorous, 38% eat mostly plants with some meat and poultry, 2% are vegetarian, and 1% are vegan.

### Transportation

Again, results for how North Shore-LIJ employees commute to work are very similar to what was seen in the initial Carbon Footprint Challenge Survey. 81% drive alone, 7% carpool, and 6% rely upon public transportation. Some who indicated other modes of travel use a combination of ways to get to and from work, including driving and walking, carpooling/ridesharing, or biking. Some added that they own a hybrid vehicle and another respondent uses hospital transportation.

### Transportation

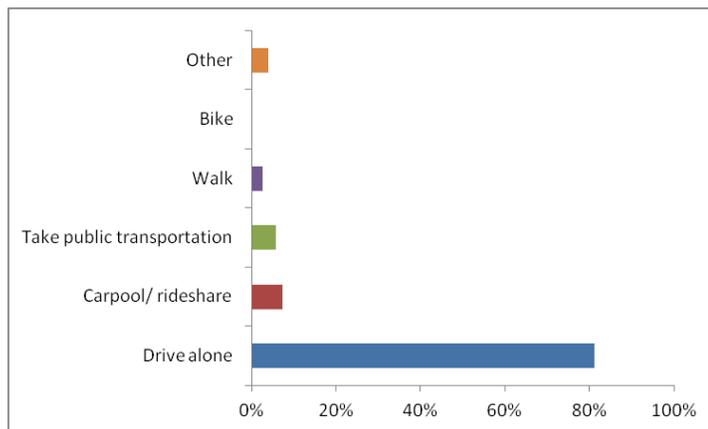


Figure 12. Modes of commuting (Follow Up Survey).



# Data Analysis

## Sustainability in the Workplace

The follow up Carbon Footprint Challenge survey shows that the sustainable resource patterns within the workplace persist: 83% of respondents reuse materials when possible, 80% take the stairs instead of the elevator, and 75% recycle. There is an increase in percentages when compared to the initial survey results, which may indicate that awareness is growing and more employees are taking steps toward reducing pollution and improving sustainability.

## Sustainability in the Workplace

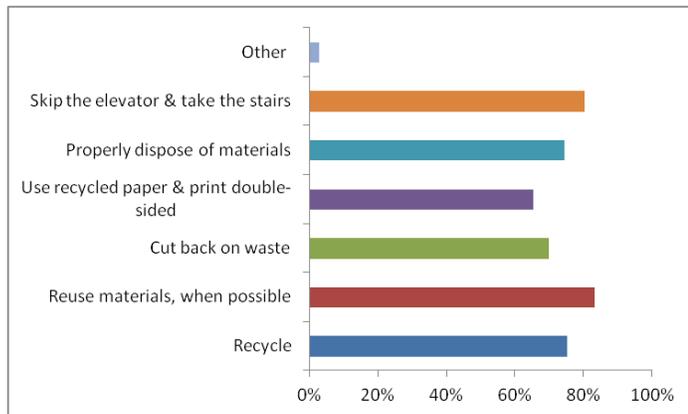


Figure 13. Sustainability practices followed at work.

## Employee Awareness

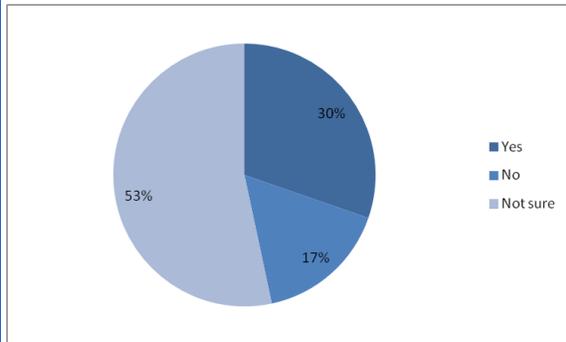


Figure 14. Does your facility have a green team/committee?

## Employee Awareness

In the time since the initial Carbon Footprint Challenge Survey was conducted, it appears that more North Shore-LIJ employees have become aware of whether their facility has a green team or committee. The results for the follow up survey show that 30% of respondents said “yes” their facility does have a green team or committee, while only 53% were unsure if one existed.

## Green Procurement

Similarly, there was a slight increase in the number of employees who indicated that their facilities have green procurement policies in place, up to 29% from the 24% as seen in the initial survey results. This may also be an indicator of heightened awareness across the health system.



## Data Analysis

### Green Procurement

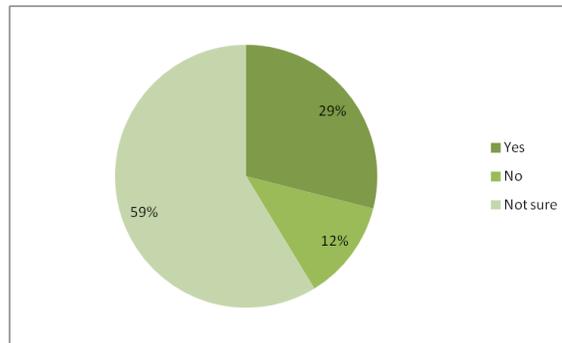


Figure 15. Does your facility have a green procurement policy in place?

### Facility Sustainability Awareness

Similarly, there was a slight increase in the number of employees who indicated that their facilities have green procurement policies in place, up to 29% from the 24% as seen in the initial survey results. This may also be an indicator of heightened awareness across the health system.

### Facility Sustainability Awareness

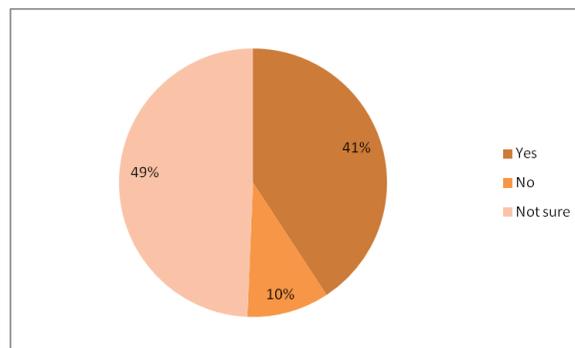


Figure 16. Has your facility implemented sustainability techniques and/or policies?



## Lessons Learned

**Commitment & Leadership:** Prior to the start of the Carbon Footprint Challenge, North Shore-LIJ Health System was making significant effort to address sustainability issues within its facilities. Collaboration with the Department of Sustainability and Social Responsibility was critical; employees demonstrated existing interest and eagerness to do more. Without this type of commitment and support, the initiative would not have been as successful as it had been.

*Identify target audience* for training, education seminars, and other elements of participation. For the educational component of the Carbon Footprint Challenge, we worked with staff in the Food and Nutrition Value Analysis Team (VAT), Engineering VAT, Central Region Human Resources Leadership, Eastern Region Review, and the Environmental VAT to provide assistance with outreach and communication, encouraging their colleagues to get involved, and sharing information about what can be done to reduce pollution and improve sustainability. These “Champions” helped to promote and steward the program. Our partners at North Shore-LIJ were an invaluable resource in connecting us to the groups, scheduling meetings, and offering feedback on our approaches to disseminating information.

*Develop a range of activities* for staff to participate in and learn about the initiative, sustainability, and their role in improving environmental impact across the health system. To ensure effectiveness of the initiative, the Carbon Footprint Challenge was comprised of diverse components to educate, engage, and empower participants to take steps toward sustainability. These included training sessions, educational seminars, and surveys. Each of these components included messaging about the initiative and its goals, how to participate, and pollution prevention and sustainability strategies that can assist individuals and their families in reducing their carbon footprint.

We recognized early on that there were different levels of participation from the employees, and kept the initiative components flexible to ensure that getting involved was effortless. Throughout the Carbon Footprint Challenge, we held: formal PowerPoint Presentations (Train-the-Trainer Sessions, Lunch and Learns), informal, interactive presentations (Lunch and Learns), and tabling (Lunch and Learns).



## Lessons Learned

*Meet where the people are.* In order to maximize participation, it is helpful to make use of existing groups, meetings, and/or events so that time isn't lost in competition with other engagements. The Train-the-Trainer Sessions and Lunch and Learns were facilitated during times when North Shore-LIJ employees were already meeting or during lunch; balancing the number of activities that staff are involved in and making the best use of their limited and valuable time.

### **Communication**

*Should take place right away,* between project partners and participants. Sustainable Long Island and North Shore-LIJ maintained open lines of communication from the beginning of the Carbon Footprint Challenge, which enabled us to implement a cohesive effort to reduce pollution and improve sustainability across the health system. With this type of partnership, we were able to immediately address any challenges or new strategies that occurred, while developing a comprehensive process for outreach to the employees to maximize their engagement in the initiative.

*Be clear, concise, and engaging.* The messaging used should be easy to understand, articulate the mission, objectives, and goals in a meaningful way while encouraging involvement in the process. It was important to the project team that the goals of the Carbon Footprint Challenge reflect the health system's larger sustainability goals while connecting employees to information about how to get involved in pollution prevention and sustainability efforts. Great effort was contributed by the project partners in developing the way that we would pitch the initiative, speak about its various components, and effectively engage employees in the process.

*Be consistent, both in messaging and the frequency it's distributed.* Repeating the mission and goals in the same or similar language ensures that it will get recorded in the minds of those reading, not lost amongst the many other competing projects and programs taking place. We made sure that the health system employees who served as Champions of the initiative had the talking points and messaging readily available to facilitate information sharing.



## Lessons Learned

*Be consistent (Continued)! Branding the initiative with a logo served as a way for the project partners to improve visibility across numerous channels of communication and helped us to attract employees' who may not otherwise have noticed in the midst of busy schedules and many emails. The logo was used in emails, informational materials, and on North Shore-LIJ's internal website.*

*Utilize networks and partnerships.* This is especially helpful when the audience is the 44,000 employees at a large, regional health system. Build upon your existing network and strengthen partnerships – these connections can help to define your messaging and outreach strategies, ensuring that they have widespread reach across the audience.

Carbon Footprint Challenge Champions gave specific feedback and suggestions that were incorporated into strategies to engage employees. They also helped to raise awareness of the initiative within their respective facilities and encourage participation amongst their colleagues to developing techniques for distributing informational materials and resources about pollution prevention and sustainability.

### **Practical Application of Tips and Resources**

*Identify a range of sustainability techniques, providing a menu of options for participants to choose from based on their level of interest and commitment encourages broader participation from employees who may have varying investments in sustainability to begin with.*

As part of the Carbon Footprint Challenge, we identified mobile apps for smart phones designed to help users reduce pollution and improve sustainability. The functionality of the apps was diverse: some helped to better understand current resource patterns within the home while identifying opportunities for conservation and efficiency and others connected users to local food stands and farmers' markets, helping to reduce vehicle miles traveled. These mobile apps were low cost, easy to use, and were terrific at raising awareness, generating excitement, and ensuring implementation.



## Lessons Learned

*Enlist advocates for the cause; start small, but reach for big goals.* With the help of the Carbon Footprint Challenge Champions, we encouraged North Shore-LIJ employees who participated in the initiative to implement strategies first that are most convenient and economical and then find a balance between what can be done immediately to longer-term goals.

Lasting change can be fostered with incremental steps, and we hoped that working through trusted partners we could have a more widespread reach within the health system while helping participants to see that even small steps can make a difference in environmental impact. Our aim was for the Carbon Footprint Challenge to create awareness and distribute resources for how to prevent pollution and, most importantly, for the movement toward sustainability to persist well beyond the close of the initiative.

One of the most rewarding aspects of this project has been that the people who we spoke with and with whom we shared resources were excited, interested, and engaged. The anecdotal feedback indicated their pleasure that the tools had practical applicability and could help to make a difference with regard to their own carbon footprint. Their raised awareness and commitment to implementing change were key factors in demonstrating their ability to be good environmental stewards who can serve as models for sustainability.



## Resources

**Environmental Protection Agency (EPA), Pollution Prevention**

<http://www.epa.gov/p2/>

**EPA, Resource Conservation**

<http://www.epa.gov/epawaste/conserve/index.htm>

**Long Island Power Authority (LIPA)**

<http://www.lipower.org>

**New York State Pollution Prevention Institute (NYSP2I)**

<http://www.rit.edu/affiliate/nysp2i/>

**New York State Department of Environmental Conservation**

<http://www.dec.ny.gov/>

**New York State Energy Research and Development Authority**

<http://www.nyserda.ny.gov/>

**Practice Green Health**

<http://practicegreenhealth.org/>

**Alliance for Water Efficiency**

<http://www.allianceforwaterefficiency.org/residential-tips.aspx>

**Conservation International**

<http://www.conservation.org>

**Eco Hatchery**

<http://www.ecohatchery.com/>

**Meatless Monday**

<http://www.meatlessmonday.com/>

**Michigan Department of Environmental Quality, Waste Reduction/Pollution Prevention**

[http://www.michigan.gov/documents/deq/deq-ead-p2-p2chklst\\_279130\\_7.pdf](http://www.michigan.gov/documents/deq/deq-ead-p2-p2chklst_279130_7.pdf)

**National Geographic, Green Guide**

<http://greenliving.nationalgeographic.com/carbon-footprint-reduce-it-2526.html>

**The Nature Conservancy**

<http://www.nature.org/>

**New Hampshire Department of Environmental Services, Water Efficiency: Health Care Facilities**

<http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-14.pdf>