


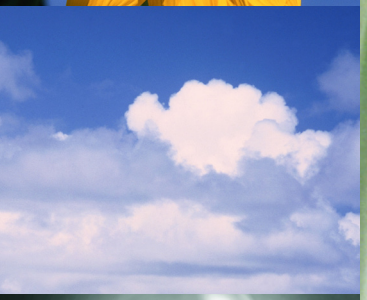

The Greening Guide

UJA-Federation of New York
Network Greening Initiative

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Foreword

As the largest local philanthropy in the world, UJA-Federation cares for those in need, rescues those in harm's way, and renews and strengthens the Jewish people in New York, in Israel, and around the world. *Although combating global warming is not directly stated in our mission, we know that unless our community addresses crucial environmental challenges, our other goals may be in jeopardy.*

Through its extraordinary network of agencies, UJA-Federation supports social, educational, cultural, recreational, therapeutic, and medical services for hundreds of thousands of New Yorkers every day. Our collective impact is nothing short of astounding. However, in order to accomplish these important goals, our beneficiary agencies consume massive amounts of fossil fuels and occupy millions of square feet of office and programming space.

Each month, agency employees purchase countless gallons of gas, driving hundreds of thousands of miles. And, every year, Jewish community centers, summer camps, senior centers, food banks, and many other affiliated agencies use enormous amounts of oil, natural gas, and coal to cool, heat, and light their facilities. All of this energy consumption is adding to a global environmental crisis that is threatening the future of our planet. Ironically, our health and human-service agencies are contributing to the very social challenges we are all working hard to combat.

In the winter of 2007, UJA-Federation began planning the Network Greening Initiative with the goal of building the network's capacity to create safer, more environmentally responsible communities by supporting the adoption of sustainable green practices that reduce the consumption of energy. Addressing climate change at the local level, the Network Greening Initiative aims to reduce UJA-Federation's and its network's carbon footprint and to raise the environmental consciousness of New York City's citizens. In doing so, UJA-Federation and its beneficiary agencies are responding proactively to PlaNYC, the design to create a sustainable New York City, which can be viewed at www.nyc.gov/html/planyc2030. By implementing many of the plan's recommendations, UJA-Federation can achieve its mission and ensure a strong future for our community.

Through our large network of agencies, UJA-Federation has the opportunity to share important resources, expertise, and ideas. The Network Greening Initiative builds on these strengths by offering grants, an educational program, and this guide — which provides local greening resources and practical recommendations for making environmentally sustainable choices — so that, individually and together, we can make a difference.

Our goal to raise the consciousness of our community begins with the education of our communal leaders. In recognizing this, UJA-Federation, in partnership with the Isabella Freedman Jewish Retreat Center, created the Jewish Environmental Fellowship. This fellowship, which is funded by UJA-Federation's Commission on Jewish Identity and Renewal, is an 18-month professional development program for Jewish educators and other professionals in our network. The fellowship begins at Jewish community centers and summer camps, with the ultimate goal of expanding to other beneficiary agencies.

In addition to increasing the planet's capacity to sustain life, implementing green measures that will mitigate climate change can generate multiple benefits to our agencies and community, including:

- Engaging younger Jewish adults in an issue many already care deeply about. When we address the challenges facing our environment, we speak directly to them. Ultimately, we hope, our greening initiative will offer opportunities for our youth to connect to our agencies and become more involved, socially and philanthropically.

- Improving security in Israel and around the world. Reducing our carbon emissions often means reducing our dependence on foreign oil. As Thomas L. Friedman and others have written, when we wean ourselves from foreign oil, we undermine autocratic regimes most hostile to Israel and the West.

- Reducing annual operating costs**.** Many carbon-reduction measures lead to significant cost savings, and mitigating climate change means making wise operating decisions that affect the financial and ethical bottom line.

We hope this handbook will become *the* greening guide for UJA-Federation's network of agencies. I would like to recognize the Network Greening Task Force, which has worked diligently to help create this resource guide and develop important components of the Network Greening Initiative. The task force, chaired by Rabbi Joy Levitt and John Usdan, is a passionate group of dedicated lay leaders, emerging leaders, agency professionals, and UJA-Federation staff. I thank all of them for their hard work.

We encourage you to look through this guide and implement at least one change in your agency, and even in your home. It may not feel like you are making a difference, but if we can all make even one small change, we can begin together to repair the world.

Sincerely,

Allan Glick
Chair, Jewish Communal Network Commission
UJA-Federation of New York

Introduction

Greening as a Jewish Issue

A Jewish greening guide? Some may ask, "Why us, why now?" Some may say the challenge of global climate change is too large for the Jewish community to undertake, or that climate change is not a sufficiently "Jewish" issue. Others may argue it's too late — that climate change is irreversible and there is nothing we can do at this point.

To them, we offer these words from former Vice President Al Gore's 2007 Nobel Peace Prize acceptance speech:

> *The future is knocking at our door right now. Make no mistake, the next generation will ask us one of two questions. Either they will ask: "What were you thinking; why didn't you act?" Or they will ask instead: "How did you find the moral courage to rise and successfully resolve a crisis that so many said was impossible to solve?"*

The charge to live morally and courageously in relation to our world echoes throughout Jewish tradition. From the beginning of Genesis, humanity is endowed with the sacred duty of stewardship of the created world. One of the essential Jewish values is the manifold responsibility to till and to tend, to employ the precious resources of our planet toward building a just and humane society while caring for the fragile ecosystems that sustain all life. *Pirkei Avot*, *Ethics of the Fathers*, reminds us that even when the task feels overwhelming, we are not free to walk away. On this, our tradition is clear: "It is not our obligation to finish the task, nor are we free to desist from it," writes Rabbi Tarfon in *Pirkei Avot* 2:21.

Our Cause

Over the past several years, the global scientific community has cast climate change as *the* defining social and ecological challenge of the 21st century. In an article by Naomi Oreskes, the journal *Science* concluded this consensus is universal: "Politicians, economists, journalists, and others may have the impression of confusion, disagreement, or discord among climate scientists, but that impression is incorrect."

Climate change affects communities across the globe, yet the suffering falls most heavily on the poor. As a recent United Nations report states, the poor are at much higher risk because of rising rates of malaria, diarrhea, and dengue fever. According to the African Development Bank, crop failure due to climatic disruptions and loss of homes from hurricanes and rising oceans and rivers also affect the poor more drastically.

Hurricane Katrina killed some 1,000 people and dislocated more than 1 million more. In the summer of 2007, India and Bangladesh experienced the worst monsoons and cyclones in living memory, causing 20 million people — more people than who live in all of New England — to lose their homes. In an article by Anjana Pasricha, published by *Voice of America*, it is estimated that more than half a million people died directly from the flooding itself or from the disease, starvation, and hardship that followed.

According to a study by Norman Myers, presented at a forum for the Organization for Security and Cooperation in Prague, the World Economic Forum predicts that by the year 2050, 150 million people living in low-lying areas of China, India, Bangladesh, the Pacific and Indian islands, and parts of Africa will likely become environmental "refugees," losing their homes to flooding and extreme weather events. This number exceeds that of all political refugees created by the hundreds of large and small wars of the 20th century.

Local impact will also be significant. By late this century, New York winters will warm by 8 to 12 degrees, and summers by 6 to 12 degrees. Sea levels around the city will rise by as much as three feet, flooding coastal areas and causing significant saltwater intrusion. The number, intensity, and duration of urban heat waves will increase, and the rates of asthma, allergies, and cardiovascular diseases will rise as air quality worsens. Severe storms will occur more frequently. Drought will affect the Catskills, disrupting water supplies to New York City and other areas. Growing seasons and crop yields will change, fish populations will move north to escape warming waters, and long-distance food distribution will become infinitely more expensive, if not impossible. If current warming trends continue, the climate of Westchester County in the year 2100 will closely resemble that of southern Georgia today.

Climate change comes primarily from the ubiquitous burning of fossil fuels: the gasoline that fuels our cars, the natural gas that heats our homes and businesses, and the coal and oil that produce the electricity, driving the engines of production in every sector of our economy. According to an article by Stephen Pacala and Robert Socolow, published in the journal *Science*, human activity emits 7 billion tons of carbon into our atmosphere each year — roughly 4 billion more tons than our forests and oceans can absorb. The net impact has been a sharp rise in atmospheric carbon levels, higher today than at any time in the last 650,000 years. Scientists believe that unless we reduce carbon emissions dramatically by mid-century, the impact will be devastating and irreversible. They also believe that humanity has the fundamental scientific, technical, and industrial know-how to solve these carbon and climate problems.

We seem only to be lacking the will.

Let us as a Jewish community answer the call to respond to this crisis with moral courage. Let us, through our daily behavior and long-range strategies, take the lead in demonstrating a passion and commitment to shrinking our collective carbon footprint. Let us, through our own ingenuity and example, raise awareness and inspire action in our own communities and beyond. Let us not only begin the task but also shine a light toward the future that will empower ensuing generations to take up this sacred and essential charge.

On behalf of the Network Greening Task Force,

Rachel Jacoby Rosenfield
Chair, Resource Guide Group

Adam Berman
Former Chair, Network Greening Task Force

DISCLAIMER

This guide is intended as an educational tool for the network agencies of UJA-Federation of New York. UJA-Federation is pleased to sponsor this guide for informational purposes for its beneficiary agencies. However, UJA-Federation neither warrants nor represents that this guide will provide all relevant information concerning "greening," or that the information provided in this training session will apply to or be appropriate for all agencies. UJA-Federation urges each agency to retain independent counsel to review that organization's specific needs and requirements regarding greening, and to advise the organization about creating relevant policies and procedures.

The content of this guide was developed for UJA-Federation by an independent consultant. UJA-Federation has not independently verified the facts, assumptions, estimates, comments, advice, suggestions, opinions, and so forth (collectively the "Information") contained in the guide. Accordingly, no representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, or completeness of the Information contained in this guide. Consequently, UJA-Federation assumes no liability for the Information, which is being provided solely for the personal evaluation and general information of the reader.

For informational purposes, this guide contains references to other organizations that have been identified to UJA-Federation by its independent contractor, as well as links to certain organizations' websites. UJA-Federation is not affiliated with any such organizations and has not independently verified the information contained on any of the organizations' websites. The inclusion of an organization's name or website in this guide is neither an endorsement of the organization by UJA-Federation nor a recommendation for use of the organization's services. The guide also contains references to certain commercial products and for-profit service providers. These products and providers are listed solely for purposes of example, and their inclusion in the guide is neither an endorsement by UJA-Federation nor a warranty by UJA-Federation that the products and services are appropriate for any specific use or that the lists provided are exhaustive.

Where to Begin

You've heard about the energy-saving qualities of compact fluorescent light (CFL) bulbs. But the extent of the savings is amazing: If every American swapped just one conventional incandescent bulb for an Energy Star model, that would produce enough extra energy to light more than 2.5 million homes for a year.

Just knowing that kind of information makes it important and feasible for each of us to attack global warming. That's where *The Greening Guide* comes in. It offers clear, specific suggestions on how an agency can plan and execute an environmental strategy designed for its individual needs. The guide can also be exceedingly useful for homes. Your organization makes literally millions of environmental decisions. How do you begin evaluating the impact of those choices? How do you decide what to focus on? Organize your plans into two categories: actions that will reduce your organization's carbon footprint, and measures that raise your organization's environmental awareness and teach your constituents to be better stewards.

Not everything fits both categories. For example, replacing a furnace might have a significant carbon-reduction impact but, in and of itself, very little educational value. Alternatively, buying glass mugs for employees — instead of using paper or plastic cups — might have a small carbon impact but a large educational, community-building, consciousness-raising value. Changes that achieve both goals are, of course, ideal.

Since cutting energy costs is the most effective way to reduce your carbon footprint, conduct an agencywide energy audit. For guidelines, visit the New York State Energy Research and Development Authority at www.nyserda.org and the Long Island Power Authority at www.lipower.org.

Overall Strategy

- Establish a Greening Committee to help your agency develop and implement a greening plan.
- Using this guide as a checklist, conduct an agencywide walk-through with your committee members at your side.
- Prioritize long- and short-term goals.
- Keep a scorecard on paybacks and cost-effectiveness.
- Involve everyone and be open to new ideas.
- Use certification guidelines established by GreenNonprofits — found at www.jolera.com/greennonprofits/certification.htm — to help you choose areas of focus.
- Develop a mission statement.

Establish a Greening Committee

- Send an all-staff e-mail asking for volunteers to help with the agency's environmental mission.
- Select representatives from various departments throughout the agency, from purchasing to facilities, with at least one employee from each floor or building.
- Create small working groups to focus on such specific areas as sustainable purchasing, energy efficiency, transportation, recycling, and education.

Clarify Your Greening Committee's Responsibilities

Once a committee is formed, ask each work group to:

- Conduct an environmental scan to document what your agency and similar agencies are already doing.
- Make recommendations ranging from no-cost actions to measures requiring financial resources.
- Consider ideas with a high potential to raise environmental consciousness, as well as those with significant environmental results.

Implement Greening Committee Recommendations

- Outline and prioritize goals, and include a few easy wins that won't take a lot of time or effort.
- Communicate with your agency's senior executive team and board to ensure they remain updated, involved, and committed.
- Identify key contacts both inside and outside your agency that can help implement the suggested action plan.
- Return to the Greening Committee with an official plan that is ready to be implemented.

Conduct the Walk-Through

So many of the guide's ideas can be implemented immediately. For example, simply drawing curtains to admit winter sunlight or opening windows to let in summer air will mitigate indoor pollutants.

- With pertinent sections of this guide in hand, the committee should examine each room. Are the computers connected 24 hours a day? Could you pull the plugs nightly? Find a dripping faucet?
- Put every recommendation on the committee's action list. Keep going until you and your committee have evaluated every part of the facility.
- During the walk-through, be aware that environmental needs vary from agency to agency. A hospital, for instance, can't unplug all its computers when the nine-to-five workday is over. But for every idea that is not feasible for you, dozens of others will apply — so don't reject any suggestions without careful consideration.

Helpful Hints on Selecting Committee Members

- The Greening Committee needs a chairperson whose environmental passions are already evident. The head of the committee should be the guy who's always picking up soda cans for recycling or the woman who compiles and distributes notepads of scrap paper.
- The chairperson needs to not only organize but also motivate. The person selected should really care about a global temperature rise of 6.4 degrees that would make 40 to 70 percent of the planet's species extinct. And don't forget: the chairperson should understand the agency well enough to be able to advance the greening agenda.
- If possible, the committee should include a member of the senior executive team who is authorized to make immediate decisions.

Set Priorities

Short-term goals, like turning off lights in empty rooms, are quick and easy. Putting those into practice also helps convince the skeptics that change is possible. Bigger change, however, requires balancing costs and benefits. Your greening plan needs to prioritize.

In some cases, however, there's an intermediate step. For example, if your printers can't produce double-sided documents and manual paper flipping is too time consuming, compromise by reusing paper with one blank side; but mandate future printer purchases as duplex only.

Or if most staff members need lots of cool air because they're physically active, suddenly resetting the air-conditioner might not be practical. Focus on increasing energy efficiency in other ways, and work with the hotheads to find a temperature compromise.

The following color chart will help you prioritize:

- ◇ takes little or no time
- ◆ takes time and money, but may ultimately pay for itself in cost savings
- ❖ takes significant time and money, but will dramatically improve the environment

Develop a Scorecard

When collecting information, don't just "set it and forget it."

Calculating results not only lets you see what is working but also motivates more efforts. If the little changes have already led to big savings, let's see what else your agency can do. And remember to include a few easy wins right at the beginning.

Keep records of everything.

- Calculate your facility's carbon footprint with a tool that records the energy for day-to-day operations and transport. Your carbon footprint tells you how many tons of greenhouse gases are released as a result of your daily activities. Many different carbon-footprint calculators are available, but check out the Environmental Protection Agency's emissions calculator at www.epa.gov/climatechange/emissions/ind_calculator.html.
- Track utility bills and compare changes to measure the decrease in energy and water use. Because the use of energy and water fluctuates by season, compare bills from the same month year to year — for example, compare May 2008, May 2009, and May 2010. This method can also be applied to sustainable purchasing.
- Survey staff members and building occupants for changes in awareness and habits in and out of the workplace.

Evaluate the Payback

Sometimes it takes a while to realize the benefits of your initial greening actions. However, the cost savings may be used to repay the up-front expenses. You'll need to consider both operating and capital budgets to see the big picture: using less paper may compensate for the cost of the double-sided printer; cutting the water bill may compensate for the price of low-flow plumbing fixtures. Simply divide the new purchase price by the estimated savings to see what's what.

To estimate the payback for more complicated measures, such as upgrading heating and cooling factors, consider utility cost and usage, climate, existing building conditions, optimal combination of retrofit fixtures, material costs, and labor efficiency.

Identify All the Benefits

- Money is not, of course, the only — or even the major — reason for greening. According to the United States Green Building Council, the right changes help protect ecosystems, enhance biodiversity, improve air and water quality, reduce solid waste, and conserve natural resources.
- Comfortable, healthy buildings generate lower absenteeism and healthcare costs and greater employee attraction and retention.
- Implementing a green action plan increases your environmental profile in the community — a good image-building benefit.

Involve Everyone

- Ask all staff members to participate, including management, clerical, and maintenance. Remember, your agency's employees know the most about the products and procedures they use. They're also vital for follow-through on electricity conservation, recycling, and other efforts.
- Don't forget to enlist the participation of your agency trustees.
- Solicit the advice of Greening Committee members at other UJA-Federation beneficiary agencies.
- Encourage everyone in your building to participate, including those not on your staff.
- Invite environmental experts to speak at your agency.

Checklist

- ✓ Turn off the lights when no one's in the room.
- ✓ Turn off unused electronics — use power strips to make it easy.
- ✓ Create a no-idling policy for all vehicles.
- ✓ Use only compact fluorescent light (CFL) bulbs. And remember: they can be dropped off for recycling at any Home Depot, Ikea, or hardware store with a recycling program.
- ✓ Find and repair even the tiniest leak.
- ✓ Make certain air can flow freely around all electronics and appliances.
- ✓ Keep all electronics and appliances free of energy-siphoning dust.
- ✓ Buy reusable cups instead of bottled water.
- ✓ Insulate the hot-water heater — and keep it between 115 and 120 degrees.

Inform and Inspire

- Post signs to keep the issue out there — place signs on every door to remind employees to turn off the lights; post recycling reminders near relevant bins; and reinforce the message by placing "This is not a recycling bin" labels on every wastebasket.
- Send e-mails whenever you incorporate a change.
- Put greening on the agenda at staff meetings.
- Reward active individuals and groups.
- Answer any questions.
- Acknowledge and resolve conflicts that may arise during the greening process.
- Have a green kickoff event or agency Green Days.

Recycling

The First Step in Greening

Should you need yet another reason to commit to recycling, consider this: According to the United States Green Building Council, recycling 1 ton of paper saves 17 trees, 3 cubic yards of landfill space, and the energy required to produce the paper.

For a clear, practical recycling plan, follow the guidelines outlined in this chapter.

Getting Started

- Conduct a waste audit, enlisting the help of your staff and community. A thorough audit will help you set priorities, select an appropriate recycling storage facility, and choose a hauler.
- Ask your greening committee, maintenance staff, or interested student interns or volunteers to separate and weigh the materials. (Do not use this method for hazardous waste.)
- For the initial test week, use easily accessible, labeled recycling bins. (Research a local recycling hauler through Earth 911 at www.earth911.org.)
- Visit the Council on the Environment of New York City's (CENYC) Office of Recycling Outreach and Education at www.cenyc.org/recycling for by-borough information about local recycling opportunities and a list of outreach coordinators for your neighborhood. CENYC offers workshops for tenants and supers and can conduct building-waste audits and provide information on waste reduction and composting resources.
- Develop a recycling plan for cell phones, computers, televisions, and appliances. In the landfill, these items release toxins and heavy metals that can emerge in waterways. Visit the Electronics TakeBack Coalition at www.electronicstakeback.com or NYCWasteLess at www.nyc.gov/html/nycwasteless for manufacturers accepting discarded televisions and computers.

Reduce the Volume of Waste

- Check the waste-stream sections in various chapters throughout this handbook for useful information on reducing your volume of waste, such as reusing single-sided paper and drinking only from reusable cups and water bottles.

Find a Recycling Hauler

- Visit Earth 911 at www.earth911.org to find a local hauler that is best for you. NYCWasteLess provides information on recyclers and vendors at www.nyc.gov/html/nycwasteless/html/recycling/recyclers_vendors.shtml that accept hard-to-recycle materials, including toner cartridges, textiles, pallets, plastic film, and computers.
- Decide whether you want separated or commingled recyclables. Commingled recyclables are divided from garbage but not categorized in bins by glass, paper, or cardboard. Although commingling requires less space and lets haulers cart away more at one time, paper can become contaminated with food, for example, and become too tainted to recycle. Discuss both options before deciding.

Just the Facts

New York City businesses must recycle:

- corrugated cardboard (flattened boxes)
- office paper
- magazines, catalogs, and phonebooks
- newspapers
- textiles (if more than 10 percent of their waste stream)

Set Up Collection Bins and Storage Space

Use small intermediary collection bins to hold one day's waste. For example, in an office, place paper bins at each desk; at the end of the day, transfer the contents of each bin to a central container.

- Choose moveable central containers that are large enough to hold all recyclables between pickups.
- Store bigger bins in a dry, enclosed space. Washable plastic bins are easier to maintain and keep areas free of pests.
- Label bins to avoid confusion. For example, bottle bins will need signs reminding users to rinse and remove caps from bottles.
- Store and maintain bins to encourage recycling. Overflowing or inaccessible bins may discourage would-be recyclers. Where practical, cardboard balers, aluminum-can crushers, and recycling chutes also help.

Buying the Bins

NYCWasteLess at www.nyc.gov/html/nycwasteless offers information on recycling and how to buy recycling bins. The New York City Department of Sanitation does not supply recycling or garbage bins or bags, but any container can be used for recycling as long as it is properly labeled. You can purchase bins and bags from supermarkets, drugstore chains, hardware stores, home-improvement centers, office-supply stores, janitorial suppliers, and many department stores, including:

Busch Systems
www.buschsystems.com
1.800.565.9931

Ecolad Corporation
www.ecolad.com
1.800.665.6263

The Fibrex Group
www.fibrexgroup.com
1.800.346.4458

Forms+Surfaces
www.forms-surfaces.com
1.800.451.0410

Grainger Industrial Supply
www.grainger.com/Grainger/static/rc_green.html
1.800.323.0620

Jedstock
www.jedstock.com
1.877.533.7862

Kettle Creek Designs
www.kettlecreek.com
1.800.527.7848

Midpoint International Inc.
www.midpoint-int.com
1.888.646.4246

RecyclingBin.com
www.recyclingbin.com
1.800.910.4757

Recy-CAL Supply Co
www.recy-cal.com
1.800.927.3873

Rehrig Pacific Company
www.rehrigpacific.com
1.800.421.6244

Rubbermaid Commercial Products
www.rcpworksmarter.com
1.800.347.9800

Staples
www.staples.com
Call 1.800.378.2753

Unique Drawer Boxes
www.udb.cc/ProductType.aspx?product_line_id=27
1.888.999.1304

Waste Wise Products
www.wastewiseproducts.com
1.416.497.7395

Windsor Barrel Works
www.windsorbarrel.com
1.800.527.7848

Educate and Encourage Participants

- Motivate staff and community members by making recycling easy.
- E-mail all employees to explain the new program, request involvement, and ask for early feedback. Keep the updates coming.
- Conduct continuing waste audits to inspire everyone with their progress.
- Offer small prizes to reward staff for thinking creatively and using environmentally responsible products, such as compact fluorescent light (CFL) bulbs or pencils made from recycled newspapers.
- Encourage involvement by posting signs touting the benefits of recycling.
- Visit the Council on the Environment of New York City's Office of Recycling Outreach and Education at www.cenyc.org/recycling for recycling tips specific to New York City.

Just The Facts

- Americans toss 2.5 million plastic bottles an hour.
- We throw 100 million aluminum cans in the trash every day. That's enough to build an entire fleet of commercial jets every three months.
- Recycling just one aluminum can will save enough energy to run a television for two hours or a computer for three hours.

Viable Greening Options

This section identifies the range of available greening options — and provides information to help make feasible decisions for your agency. Your choices depend on the interests and passions of your greening committee, as well as the resources at hand. But, emphasize changes that both reduce your carbon footprint and increase the organization's environmental consciousness.

Energy Efficiency

Getting Started

- Conduct an energy audit to provide the context and data for improving your energy use. ENERGYguide offers a business-energy analysis at www.energyguide.com.
- Energy Star's website at www.energystar.gov is a must-see for choosing energy-efficient equipment and appliances. Energy Star, which is a partnership between the Environmental Protection Agency and the United States Department of Energy, labels more than 11,000 models in 30 product categories and offers cost-savings calculations.
- Check with your energy provider to see if you are eligible for high-efficiency heating and water rebates.

Proper Disposal of Compact Fluorescent Light Bulbs

Compact fluorescent light (CFL) bulbs contain about five milligrams of mercury (the size of a ballpoint pen), which is sealed within the glass tubing. Because mercury in the environment can build up over time, proper disposal is important to help keep our environment safe.

For information about proper disposal, contact your local solid waste-management authority or:

- New York State Bureau of Solid Waste, Reduction, and Recycling at 1.518.402.8629.
- Small-Quantity Generator Hotline at 1.800.462.6553 or 1.518.402.8633.
- New York State Department of Environmental Conservation at www.dec.ny.gov.
- A list of townships that participate in a hazardous waste collection day at www.epa.gov/bulbrecycling.

◇ takes little or no time

◆ takes time and money, but may ultimately pay for itself in cost savings

❖ takes significant time and money, but will dramatically improve the environment

Lighting

- ◇ Turn off lights in unoccupied rooms. (According to Energy Star, about 30 percent of energy goes toward lighting.)
- ◇ Switch off lights when daylight is sufficient.
- ◆ Install dimmable light fixtures near windows.
- ◆ Install occupancy sensors in frequently vacant areas, such as conference rooms or restrooms.

Light Bulbs

- ◆ Use LED (light-emitting diode) bulbs in exit signs.
- ◆ Upgrade fluorescent light bulbs by replacing T12 fluorescent bulbs with T8 fluorescent bulbs.
- ◆ Replace conventional incandescent light bulbs with compact fluorescent light bulbs to improve lighting efficiency by 75 percent.

Light Fixtures

- ◇ Regularly dust light bulbs to improve efficiency by as much as 20 percent.
- ◆ Upgrade fluorescent fixtures to fit T5 fluorescent bulbs.
- ◇ Move lamps to corners so light can reflect off wall surfaces.
- ◇ Direct lighting where it is needed.
- ◇ Upgrade to Energy Star–qualified light fixtures.
- ◆ Replace on/off switches with dimmers for incandescent fixtures.
- ◆ If lighting is part of your security plan, purchase timers or light-sensor switches.

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Hot-Water Heater

◆ Insulate the hot-water heater.

◇ Set the heater temperature between 115 and 120 degrees.

Heating and Cooling

◇ Adjust the thermostat to a temperature a majority can agree on. For every degree you lower the temperature in the winter, you'll save 1 to 3 percent on heating; for every degree you raise it in the summer, you'll save 1 to 3 percent on cooling.

◆ Install a programmable thermostat.

◇ When the building is not occupied, adjust the temperature accordingly.

◇ Don't allow others to tamper with the thermostat.

◇ The Applied Energy Group recommends not using air-conditioners if the air outside is below 75 degrees. Doing so not only wastes energy but can also damage the air-conditioner.

◇ In the summer, if the outdoor temperature is cooler than the indoor temperature, open the windows and use fans for cross-ventilation.

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- ◇ Opening windows wide for 5 to 10 minutes is a more effective way to cool a room than cracking a window.
- ◇ Close windows when the heat or air-conditioner is on.
- ◇ Turn off fans when you leave a room. Fans circulate air, but do not cool it.
- ◇ Place air-conditioners in central, not corner, windows for better air movement.
- ◇ Close vents and doors in unused rooms.
- ◇ Do not let furniture block the airflow from radiators, intakes, or diffusers.
- ◆ Check ducts for leaks, which can waste up to 30 percent in energy.
- ◆ Caulk spaces around window air-conditioners.
- ◆ Remove or cover window units during cold weather.
- ◆ Look for the energy efficiency rating (EER) when purchasing a new air-conditioner. The higher the EER, the more efficient the unit.
- ◆ Make sure the air-conditioner is the right size for your room. If too large, the unit will cool too quickly and will switch on and off, not allowing for proper humidity control.
- ◇ Place the air-conditioner on the best-shaded side of the building, and don't expose the unit to direct sunlight.

◇ takes little or no time

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Peak Utility Hours

◇ Run energy-intensive appliances like washing machines, dryers, and dishwashers after 6 p.m. and before 10 a.m. Less-efficient power plants go on line when energy demand is high, and some companies also charge more for peak-hour energy.

◇ See if you can meet your utility needs and still qualify for financial rewards for cutting energy use. For example, Power Pay New York, at www.ecsgrid.com/Site/Web-Pages/NY/HowPowerPayNYWorks, and Con Edison, at www.coned.com/energyefficiency/demand_response.asp, have demand-response programs that will pay you if you cut your usage at certain times. Also check for demand-response programs at www.nationalgridus.com/masselectric/business/programs/3_demand_response.asp and www.nyiso.com/public/markets_operations/market_data/demand_response/index.jsp.

Phantom Loads (Standby Power)

◇ Unplug electrical devices when not in use.

◇ Unplug charging units, such as cell phone chargers, when not in action.

◆ Plug several electrical devices into a power strip or surge protector for quicker, easier turnoff.

Helpful Hints to Cutting Utility Bills

- Insulate hot-water heaters, and set the temperature between 115 and 120 degrees.
- Use occupancy sensors for lights.
- Use high-efficiency fluorescent light bulbs.
- Weather-strip windows, doors, and air-conditioners.
- Properly size heating and air-conditioning units.
- Choose programmable thermostats.
- Turn off idle electronic devices.

Just The Facts

- The United States Department of Energy estimates that 40 percent of the electricity used for home electronics is consumed while they are turned off or in standby mode. The energy required to power these electronics equals the annual output of 17 power plants. According to Energy Star, using the sleep setting on just one computer prevents about 300 pounds of carbon emissions a year.
- Just 10 percent of an incandescent bulb's energy produces light, reports the Energy Information Administration. The rest produces heat.

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Air Quality

Reducing pollutants can solve many problems before they start.

Exterior

- ◇ Keep vegetation two to three feet from windows.
- ◇ Ensure all outside vents are filtered and free of debris.

Interior Pollutants

- ◇ When weather permits, open curtains and windows so sunlight and fresh air can help break down pollutants.
- ◇ Reduce clutter, which can lead to mold, mildew, and other allergens.
- ◆ Replace cardboard boxes with rubber or plastic ones. Cardboard is a sponge for mold and bacteria; rubber and plastic are easier to clean.
- ◇ Don't vacuum paint chips. Use a wet sponge or mop in case the chips are lead-based. Never sand or burn off paint for the same reason.
- ◇ Store all chemicals in a locked metal cabinet. (To safely dispose of these materials, find a municipal facility for hazardous materials at Earth 911's website, www.earth911.org/hazardous, or a government website at www.health.state.ny.us/environmental/chemicals/hsees/mercury/brochures/disposal.htm).
- ◆ Install track-off mats at all exterior doors to reduce tracked-in dirt.
- ◇ Avoid synthetic air fresheners; instead, find and eliminate the source of the odor.
- ◇ Use HEPA-filter vacuum cleaners, which can remove 99.97 percent of airborne particles.
- ◆ Install carbon monoxide alarms.

Mighty Mold

Mold, often found in high-moisture areas, should be removed before it creates serious problems.

Identify Mold

- The American Lung Association suggests looking for discoloration ranging from white to orange and from green to brown or black.
- Inspect kitchens, bathrooms, and basements on and around ceilings, walls, floors, windowsills, and pipes for standing water, water stains, patches of color, and fuzzy growth.
- Don't ignore a damp or moldy smell, especially in basements, kitchens, and bathrooms.
- Search behind and underneath such materials as carpeting, furniture, or stored items.

Eliminate Mold

- Identify and eliminate moisture sources.
- Clean, disinfect, and dry surfaces.
- Remove and clean any item affected by mold.
- Remove damaged porous materials, such as sheetrock, carpeting, and plywood.
- Limit the use of wall coverings.
- Replace plush, upholstered, or porous materials with hard surfaces.
- Avoid carpeting in damp areas or areas in which spills are prevalent.
- Fix all water problems immediately.
- Clean wet materials and furnishings during the day, and take wet furniture outside to dry. Direct sunlight helps prevent mold.
- Use ventilation fans or open windows in bathrooms and kitchens.
- If possible, keep humidity levels below 50 percent with an air-conditioner or dehumidifier.
- Dry track-off mats regularly.

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Ventilation and Exhaust

- ◇ Remove bacteria, mold, mildew, and dust from air ducts.
- ◇ Ensure that fan exhausts are connected to outside.
- ◇ Provide proper venting for all combustion-based heating and water-heating equipment.
- ◇ Close all holes and spaces in the wall, such as those through which pipes enter and exit, to stop air leaks.
- ◆ Place portable air-filtration units — with HEPA or carbon filters — in rooms without proper ventilation.
- ◆ Insulate dryer vents to prevent fire hazards.

Materials and Supplies

- Specify low-volatile organic compound (VOC) materials for all adhesives, sealants, paints, coatings, carpet, particleboard or composite panels, and caulking.
- Use water- or vegetable-based paints, stains, and varnishes. Check www.nyc.gov/html/nycwasteless/html/at_agencies/tips_agencies_paint.shtm.
- Use latex paints instead of oil-based ones.
- Put a coat of a low-VOC paint over conventional paint to seal pollutants.

For more air-quality guidelines, visit:

- United States Department of Housing and Urban Development at www.hud.gov.
- American Lung Association Health House at www.healthhouse.org.
- NYCWasteLess's Agencies & Schools page at www.nyc.gov/html/nycwasteless.

Little Green Warriors

- Indoor plants absorb toxins, trap dust, and moisten the atmosphere. Be sure to put gravel over the potting soil to prevent mold, and keep the leaves dusted. Everyone feels better with a bit of nature nearby.

Top 10 Houseplants

- Areca Palm
- Bamboo Palm
- Boston Fern
- Dracaena "Janet Craig"
- Dwarf Date Palm
- English Ivy
- Ficus Alii
- Lady Palm
- Peace Lily
- Rubber Plant

Cleaning Supplies

Although conventional cleaning products may seem more effective, their potential toxins often outweigh benefits. Green cleaners, on the other hand, eliminate potential toxins. Don't switch to new products, however, without reviewing the relevant health and safety standards for the materials at hand.

- Consult Green Seal at www.greenseal.org for Green Seal–certified products appropriate for large institutions.
- Buy the concentrated form of products to reduce packaging and storage.
- Look for ingredients that are biodegradable, nontoxic, and derived from renewable resources.
- Avoid products with chlorine, phosphates, acids, caustics, or petroleum-based ingredients.
- Make your own cleansers with vinegar, lemon juice, baking soda, or hydrogen peroxide. According to the Heinz Company, spraying a surface with vinegar will kill 99 percent of bacteria, 82 percent of mold, and 80 percent of germs.
- Always read all labels before mixing products. Never mix chlorine with other cleansers, especially ammonia or vinegar.
- Don't use any cleaner before testing its effectiveness on an inconspicuous area.
- Look for cleaning services that specialize in green cleaning or are willing to use products you specify. For a list of companies, visit the Green Cleaning Service Directory, provided by the International Janitorial Cleaning Services Association.

Renewable Energy

Green Power

Green-e Energy at www.green-e.org identifies renewable-energy sources that meet widely supported environmental and consumer protection standards.

Clean, renewable energy comes from solar, wind, geothermal, biomass, or low-impact hydropower sources. Many electric companies offer institutional customers the chance to buy part of their energy from Green-e–certified wind and low-impact hydropower sources.

Carbon Offsets

Organizations wishing to cut their carbon footprint can purchase offsets through a number of companies. These credits are bought in one-ton units equivalent to the carbon created through day-to-day activities like commuting or large-scale conferences. Sellers use the money to finance renewable-energy projects or plant trees.Visit the Environmental Defense Fund's Carbon Offset List at www.carbonoffsetlist.org to find merchants.

Organizations can also donate to groups that cut greenhouse gas through increasing energy efficiency or developing community-based projects.Visit GlobalGiving at www.globalgiving.com for possibilities.

Cogeneration

For cogeneration or combined heat and power (CHP), small-scale generators convert otherwise useless waste heat into usable energy. These systems, which can produce heating and cooling, work well in multifamily houses, schools, hospitals, and gyms with pools. Cogeneration requires less fuel than a conventional power plant, is more reliable, and costs less.

Suppliers will purchase a system appropriate for the site and pay to install, operate, and maintain it. The owner agrees to purchase the electricity generated at a discount, with no upfront cost.

Net Metering

New York State utility customers who also produce onsite renewable energy — specifically solar, wind, and farm waste — can either buy extra energy if they need it or sell the company any excess energy produced. Renewable energy produced by the customer goes back through the electric meter and on to the grid (many refer to this as the electric meter "spinning backward"). Producers are compensated for any energy they contribute. Visit the Database of State Incentives for Renewables & Efficiency at www.dsireusa.org for information regarding eligibility and restrictions.

Tax Incentives

Recent federal, state and county governments have joined together to offer special tax incentives to promote the installation of solar electric (photovoltaic) equipment.

Download the Internal Revenue Service form, Investment Credit 3468 at www.irs.gov/pub/irs-pdf/f3468.pdf.

Consult with a tax professional for more details on important incentives.

New York Real Property Tax Law

If you have installed an alternative energy system that has increased the value of your property, you may be eligible for certain tax exemptions for up to 15 years. To qualify, your system must be approved by the State Energy Research and Development Authority.

Consult with a tax professional for more information about exemptions.

Renewable-Energy Sources

When installed in well-insulated and energy-efficient buildings, renewable-energy sources decrease the use of fossil fuels. The following options are also nonpolluting:

Geothermal. Special heat pumps transfer heat to the ground in summer and extract heat in winter, using the earth's natural underground temperature as a source of heat and cold. During the winter, geothermal heat pumps collect heat from below the earth's surface through underground pipes; fluid circulating through these pipes carries the heat into the building. In the summer, the process is reversed, and the fluid draws the building's heat outside to the underground pipes.

Solar. This technique captures energy from the sun and converts it to electricity using solar (photovoltaic) cells, which absorb sunlight and release electrons. A typical solar cell has two layers of silicon. When the sun shines on these layers, it causes electrons to move across the junction between each layer, creating electricity. Since solar panels can produce electricity only when there is sunlight, facilities remain tied to the grid for power at night and on cloudy days. The system can supply a portion or all of the electricity needs on a net basis.

Solar System Design Tips

Proper design is vital for solar success. Solar heating systems for residential and commercial use can be installed on rooftops or on the ground.

- Try to ensure unobstructed sunlight from 9 a.m. to 4 p.m. Shading from trees, surrounding buildings, or equipment can dramatically decrease performance.
- Position the solar panel due south and pitch it at latitude, which will capture the sunlight's angle of incidence to maximize annual production. A tracking system does this continuously. However, tracking systems may be impractical for most projects.

Wind. A viable source of green energy, wind is typically generated on large-scale wind farms on land or offshore. Wind turns the blades of a turbine, which is connected to a shaft and a generator. Electricity produced then goes to customers through a power grid. Small wind turbines are becoming increasingly feasible sources of on-site renewable energy. See more about National Grid's renewable-energy program at www.nationalgridus.com/niagaramohawk/business/energychoice/3_renewable.asp.

Visit the United States Department of Energy at www.eere.energy.gov/ for more information about alternative sources of energy.

Hiring an Alternative-Energy Contractor

- Get a minimum of three quotes, and request presentations.
- Ask how long the contractor has been in business.
- Ask for a minimum of three references from each contractor.
- Check for appropriate licensing and insurance.
- Request a comprehensive cost-benefit analysis, including all available utility, state, and federal incentives.
- Request detailed solar-output projections, including any shading impact.
- Review contractor's training and certificates. North American Board of Certified Energy Practitioners certification in solar electric or solar thermal installation is important.
- Request a detailed list of what the contractor is responsible for handling, including all required paperwork and documentation.
- Request a proposal for a data-monitoring system.

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Sustainable Purchasing

Environmentally sustainable products create markets that reduce waste, conserve resources, and prevent pollution. The New York City Department of Sanitation's Environmentally Preferable Purchasing Guide, at www.nyc.gov/html/nycwasteless/html/at_agencies/green_purchasing.shtml, offers help in making these decisions. Green Seal at www.greenseal.org can also help identify environmentally certified products such as paints and cleaning products.

◇ Reuse furnishings or buy them secondhand. New York WasteMatch's Materials Exchange at www.wastematch.org is a free online marketplace. Offers and requests abound for all sorts of items, from office equipment to packing supplies to construction materials and pallets, either free or at a fixed or negotiable rate. Some are regularly offered; others are offered one time.

◆ Use Forest Stewardship Council–certified wood for furniture and flooring to ensure sustainable forest management.

◆ Consider furnishings made from recycled steel and other recycled materials.

◆ Tell your supplier you want green products that:
  - Are easily recyclable.
  - Have a minimum of 30 percent post-consumer recycled content.
  - Are nontoxic.
  - Are packaged in bulk.
  - Are free of formaldehyde.
  - Require less water, energy, and resources to produce.
  - Are, if possible, recycled, refurbished, or reconditioned.

Helpful Hints

- To learn more about evaluating the costs and benefits of green products, visit the Environmental Protection Agency at www.epa.gov/epp.
- Visit NYCWasteLess at www.nyc.gov/html/nycwasteless/html/in_business/measurement_tools.shtm to determine if using recycled toner cartridges will save you money.

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Waste Stream

General

- ◇ Cover all garbage cans with hard plastic lids, and place cans in easily cleaned areas.
- ◇ Use leftover paints, stains, and varnishes or donate them to charities or salvage facilities, such as Build it Green at www.bignyc.org.
- ◇ Contact the New York City Department of Sanitation at 311 for proper disposal methods for paint thinners, household cleaners, oil, and pesticides. Never pour chemicals down the drain or sewer grate.
- ◇ Donate excess furniture to local thrift stores, thus reducing clutter.
- ◇ Donate working machines to shelters, charities, and salvage facilities.
- ◇ Contact the New York City Department of Sanitation at 311 to dispose of large appliances. Appliances often contain mercury and other chemicals hazardous in the landfill.
- ◇ Request free removal of old appliances when new appliances are delivered. More manufacturers and retailers are starting to recycle.
- ◆ Contact a technician to assess and repair large appliances before buying new ones.

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Reduce

- ◇ Set all printers to double-sided printing. Use NYCWasteLess's tools at www.nyc.gov/html/nycwasteless/html/at_agencies/measurement_tools.shtml to calculate the cost savings associated with duplex printing.
- ◇ Reuse blank sides and outdated documents for drafts or scrap paper. And designate a draft-paper drawer in printers and photocopiers.
- ◇ Set up pages with 0.75-inch margins before printing to reduce the length of some documents.
- ◇ Put sticky notes on a fax cover sheet to make it reusable, or incorporate fax headers into documents.
- ◇ Keep mailing lists up to date.
- ◆ Distribute memos, drafts, and other documents through e-mail.
- ◆ Edit documents electronically by using the Track Changes tool in Microsoft Word.
- ◆ Save documents electronically to a server instead of in filing cabinets.
- ◆ Try distributing an electronic newsletter instead of a printed one.
- ◇ Ensure that garbage bags fit containers and hold all daily garbage.
- ◇ Conduct an inventory of any printed materials before reordering.
- ◆ Buy in bulk to reduce packaging waste.
- ◇ Sign up for electronic billing, banking, and shareholder information.
- ◇ Opt out of unwanted mailing lists for printed materials and products.
- ◇ Keep your employee lists up to date. The Ecological Mail Coalition reports that each former staff member still on your mailing list costs you $18 a year. Visit the Ecological Mail Coalition at www.ecologicalmail.org for assistance.

Helpful Hints to Reducing Waste

- Place recycling bins only in easily accessible places.
- Properly dispose of old appliances and electronics.
- Opt out of mailing lists for printed materials and products.
- Distribute memos through e-mail.
- Donate usable castoffs to shelters, charities, or salvage facilities.
- Recycle paper, plastic, aluminum, and glass.

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Reuse

- ◇ Purchase one journal subscription per department.
- ◇ Donate old publications to local libraries, schools, and nursing homes.
- ◇ Reuse envelopes for internal mail.
- ◇ Consider using such reclaimed materials as flooring or bricks when renovating.

Recycle

- ◇ Set up a system for paper, plastics, aluminum, and glass.
- ◇ Encourage staff to participate.
- ◆ Place separate bins for trash and recycling at workstations.

For more information, see Recycling.

Just the Facts

- One Sunday edition of *The New York Times* requires about 75,000 trees.
- The energy required to heat 50 million homes for 20 years is the same as that required to make the paper Americans toss every year.
- Seventh Generation estimates that Americans would save 544,000 trees a year if each household could forego a roll of regular paper towels for one made of 100 percent recycled paper.

Fire the Mailman

According to Catalog Choice, catalogs landing in our mailboxes consume 3.6 million tons of paper and 53 million trees. Their free, simple online service at www.catalogchoice.org will tell merchants "Thanks, but no thanks" on your behalf. Once registered, you can search for companies and decline their catalogs and other printed materials. You can also add an entry if your catalog isn't listed. Catalog Choice is endorsed by the Ecology Center in Berkeley, California; the National Wildlife Federation; and the Natural Resources Defense Council.

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Water Efficiency

- ◇ Add low-flow aerators to faucets. They use less water without reducing pressure.
- ◆ Find and fix all leaks, inside and outside buildings.
- ◆ Survey your fixtures to ensure that flow rates meet current Energy Policy Act requirements.
- ◆ Replace conventional fixtures with water-saving ones.

Energy Policy Act: Flow-Rate Requirements

Fixture	Flow
Water Closets	1.6 gallons per flush
Urinals	1.0 gallons per flush
Showerheads	2.5 gallons per minute
Faucets	2.5 gallons per minute
Aerators	2.5 gallons per minute
Metering Faucets	0.25 gallons per minute

Standard Flow Rates for Water-Saving Fixtures

Fixture	Low Flow
Water Closets	1.28 gallons per flush
Urinals	0–0.125 gallons per flush
Showerheads	1.8–1.5 gallons per minute
Bathroom Faucets	1.5–0.5 gallons per minute
Aerators	1.5–0.5 gallons per minute

Just the Facts

According to the Environmental Protection Agency's WaterSense (at www.epa.gov/WaterSense/):

- An average of $500 per household goes for water and sewer use each year.
- If each household used water-efficient appliances, America could save 3 trillion gallons of water and more than $18 billion annually.
- Water savings equal energy savings. Supply and treatment facilities use enough energy to power more than 5 million houses for a year. Running the faucet for five minutes requires the same energy as lighting a 60-watt bulb for 14 hours.
- If just one house out of 100 replaced old fixtures with water-efficient ones, we'd save enough electricity to cut 80,000 tons of greenhouse gas. That's equivalent to taking some 15,000 cars off the highway for a year.

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Action Plan for Individual Areas

Bathroom: Energy Efficiency

Bathrooms should be surveyed for several environmental measures.

Conserve water. A lot of energy is required to transport, treat, and heat water before it runs from the tap. The Environmental Protection Agency estimates that running the faucet for five minutes requires enough energy to power a 60-watt light bulb for 14 hours.

Bathroom: Sustainable Purchasing

- ◆ Provide foaming hand soap to reduce water required to lather.
- ◆ Ensure the environmental safety of such personal-care products as soaps, shampoos, skin care, and baby items. Visit the Environmental Working Group's Cosmetics Safety Database at www.cosmeticsdatabase.org to learn more about what's in some of the products you may have.
- ◆ Purchase low-flow faucets and showerheads.
- ❖ Stock bathrooms with recycled-paper products. Purchase products with a minimum 30 percent postconsumer recycled content.
- ❖ Purchase brown paper towels or those labeled elemental chlorine free (ECF).
- ❖ Provide biodegradable, nontoxic hand soap made from naturally derived botanical ingredients.

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Bathroom: Waste Stream

◇ Consult a pharmacist for ways to dispose of expired medications. Treat them as you would hazardous waste — do not throw medications in the garbage or flush them down the toilet.

◇ If composting, provide a separate bin for paper towels that will go into the pile.

Bathroom: Water Efficiency

For an overview of this issue, and to learn more about WaterSense-labeled toilets and faucets, visit the Environmental Protection Agency's WaterSense at www.epa.gov/watersense, a program that evaluates quality water-efficient products.

◇ Locate and fix all leaks.

◇ Check that all faucets flow at a rate of 2.5 gallons per minute (gpm).

◇ Add 0.5-gpm faucet aerators to decrease water flow without losing water pressure.

◆ Replace faucets with 1.5-gpm low-flow or 0.5-gpm ultra low-flow faucets.

◇ Check that the toilets flush at a rate of 1.6 gallons per flush (gpf). On most models, this information is listed below the manufacturer's name, where the tank or the valve meets the bowl.

◆ Retrofit toilets that use more than 1.6 gpf with toilet dams.

◆ Retrofit toilets that use 1.6 gpf with dual-flush handles.

◆ Replace toilets that use more than 1.6 gpf with either standard, dual-flush, or low-flow models.

◇ Install low-flow showerheads to decrease the flow rate without losing pressure.

Fixture	Standard Flow	Low Flow
Water Closets	1.6 gallons per flush	1.28 gallons per flush
Urinals	1.0 gallons per flush	0–0.125 gallons per flush
Showerheads	2.5 gallons per minute	1.8–1.5 gallons per minute
Bathroom Faucets	2.5 gallons per minute	1.5–0.5 gallons per minute
Aerators	2.5 gallons per minute	1.5–0.5 gallons per minute

Just the Facts

Don't flush too much — fill a label-free plastic bottle with water and put it in the toilet tank to reduce water used per flush.

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Kitchen: Energy Efficiency

Kitchens offer numerous environmental upgrade possibilities.

General

- ◇ Unplug small appliances when they are not in use.
- ◇ Minimize the use of appliances with electrical heating elements, such as toasters, toaster ovens, and coffeemakers.
- ◇ Provide adequate air circulation around appliances.
- ◆ Replace appliances with Energy Star models.

Hot-Water Heaters

- ◆ Install an on-demand hot-water recirculation system to conserve water and save energy.

Refrigerators

Refrigerators consume the most energy of any kitchen appliance.

- ◇ Leave space between the refrigerator and surrounding walls and cabinets to allow circulation around the coils.
- ◇ Close the refrigerator door on a dollar bill, leaving half of the bill outside the door. If you can easily pull out the bill, hire a professional to replace the refrigerator door's weak seal.
- ◇ Set the refrigerator's temperature to 37 degrees. Check the temperature by placing a head of lettuce inside: if the leaves freeze, the refrigerator is too cold.
- ◇ Allow hot food to cool before placing it in the refrigerator.
- ◇ Organize the refrigerator's shelves to minimize search time while the door is open.
- ◇ Thaw frozen foods in the refrigerator.
- ◇ Store all food in covered dishes or sealed containers to minimize humidity.
- ◇ Unplug extra refrigerators. Clean and reserve them for times when extra space is needed.

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◇ Keep the refrigerator full. Fill empty spaces with bottles of water, and food will remain cold even when the door is open.

◇ Track the refrigerator's internal temperature with a weather thermometer.

◇ Shut down such refrigerator devices as ice makers and water dispensers.

◆ Move refrigerators away from sources of heat, particularly direct sunlight, ovens, and dishwashers.

◆ Conduct refrigerator maintenance twice a year.

- Vacuum the heating coils.
- Sweep beneath the refrigerator.
- Vacuum the motor.
- Drain and clean the evaporation tray.
- Clean mold and mildew from the door seal.
- Wipe down the interior with a solution of warm water and baking soda, avoiding harsh detergents.

Helpful hints for purchasing a new refrigerator

- Consider the size — it should be large enough to suit storage needs, yet small enough to remain full.
- Purchase an Energy Star model, which uses 20 percent less energy than required by current federal standards and 40 percent less than models sold in 2001. (Visit Energy Star at www.energystar.gov to calculate cost savings and find energy-efficient appliances.)
- Compare yellow Energy Guide labels to find the refrigerator that fits your needs and has the highest efficiency rating.
- Avoid designs that consume excess energy. Energy Star reports that side-by-side models use 10 to 25 percent more energy than those with a freezer on top. Water dispensers and ice makers increase energy use by 14 to 20 percent.
- Recycle old refrigerators (see Waste Stream).

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Freezers

◇ Leave space between the freezer and surrounding walls to allow air to circulate. Energy Star estimates this can cut running costs by as much as 15 percent.

◇ Test the door's seal, using the dollar bill test: close a dollar bill in the freezer door, and pull. If you can easily pull out the bill, hire a professional to replace the freezer door's weak seal.

◇ Set the freezer's temperature between zero and 5 degrees. To find the best temperature, check a carton of ice cream — it should be firm, not rock-hard.

◇ Organize freezer items to minimize search time while the door is open.

◇ Allow hot food to cool before placing it in the freezer.

◇ Track the freezer's internal temperature with a weather thermometer.

◇ Keep the freezer full, being careful not to block the circulating fan. Fill in empty spaces with bags of ice.

◇ Unplug extra freezers. Clean and reserve them for times when extra storage is needed.

◆ Move freezers away from sources of heat, particularly direct sunlight, ovens, and dishwashers.

◆ Conduct maintenance twice a year.

- Vacuum coils on the back of the freezer.
- Sweep beneath the freezer.
- Vacuum the motor.
- Defrost any ice that has built up to one-fifth of an inch.
- Clear internal drainage holes.
- Drain and clean the evaporation tray.
- Clean mold and mildew from the door seal.
- Wipe down the interior with a solution of warm water and baking soda, avoiding harsh detergents.

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Dishwasher

- ◇ Scrape dishes before loading the dishwasher.
- ◇ Run only full loads, but don't overload.
- ◇ Run on the shortest cycle practical.
- ◇ Clear drainage filter regularly.
- ◇ Air-dry dishes, and avoid using a heated dry cycle.
- ◇ Use a mild detergent to clean door hinges, seals, and the interior once a month.

Microwave

- ◇ In the summer, heat food in a microwave to keep items cooler and save energy. According to the Edison Electric Institute, microwaves use less than half the energy of conventional ovens.
- ◇ Cover all dishes with a microwave-safe lid while heating. Do not use foil or plastic wrap.
- ◇ Clean grease and food splatters from interior walls with a mild detergent. Loosen up tough splatters with steam by microwaving a bowl of water. Built-up grime causes microwaves to use more energy.
- ◆ Hire a qualified technician for all servicing and repairs.

Helpful hints for purchasing a new freezer

- Pick the size that best meets your needs.
- Purchase an Energy Star model, which uses 20 percent less energy than required by current federal standards. (Visit Energy Star at www.energystar.gov to calculate cost savings and find energy-efficient appliances.)
- Compare yellow Energy Guide labels to find the appropriate freezer that fits your needs and has the highest efficiency rating.
- Avoid models that consume excess energy.
- Recycle old freezers (see Waste Stream).

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Stovetop

- ◇ Cover cookware to keep heat and steam from escaping.
- ◇ Select the right burner. On electric stoves, match the pot or pan's bottom to the diameter of the heating element; on gas stoves, keep the flame under the bottom of the pot or pan. The California Energy Commission has shown that heating a six-inch pan on an eight-inch burner wastes 40 percent of the energy consumed.
- ◇ Clean burnt food from burners and reflector pans on electric stoves. Reflector pans with burnt-on food will absorb heat rather than reflect it.
- ◇ Be sure a gas stove's pilot light is blue. If the flame is yellow, call for service.
- ◆ Cook with good-quality, flat-bottomed pots and pans.

Oven

- ◇ Check door seals for wear and tear.
- ◇ Use a microwave or toaster oven instead of a conventional oven to heat small dishes.
- ◇ Determine when preheating is necessary. Most dishes are fine without it, and preheating can use as much as 94 percent of total oven energy.
- ◇ Do not open the oven while cooking. According to *The Daily Green*, opening the door can decrease the internal temperature by 25 to 50 degrees, and reheating requires more energy.
- ◇ Clean the oven's interior regularly, and wipe up food spills as soon as the oven is cool. Built-up food causes more energy to be used while cooking.
- ◇ Use an oven thermometer to find out the actual temperature of your oven.

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❖ takes significant time and money, but will dramatically improve the environment

Kitchen: Sustainable Purchasing

Food

- ◆ Measure leftovers, and if waste is excessive, buy less next time.
- ◆ Place information about growing and processing that day's food on cafeteria tables, menus, and places where people gather to eat.
- ◆ Reduce the distance food travels from farm to plate.
  - Purchase locally grown seasonal produce.
  - Plant a vegetable garden.
  - Participate in community-supported agriculture, or CSAs, whereby you can sign up for a seasonal program to purchase boxes of food directly from farms. Visit Just Food at www.justfood.org to learn more about CSAs in New York City.
- ◆ Eat less red meat to significantly reduce your food-related carbon footprint. Studies conducted by Carnegie Mellon have revealed that the fertilizer, feed, and manure necessary to produce red meat account for 83 percent of the industry's total greenhouse-gas emissions.
- ◆ Purchase organic fruits and vegetables. Organic produce certified by the United States Department of Agriculture is produced without most conventional pesticides, antibiotics, or hormones. This is not only healthier for consumers but also healthier for farmworkers and better for soil and water quality.

Greening Idea: Sell sturdy canvas shopping bags, reusable lunch bags, or Fair Trade – certified products for your nextfundraiser.

Thin Skins: More Food, Less Waste

- Apples
- Apricots
- Celery
- Cherries
- Cucumbers
- Grapes
- Green Beans
- Lettuce
- Peaches
- Potatoes
- Red Peppers
- Spinach
- Strawberries
- Tomatoes
- Winter Squash

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- ◆ Visit the Monterey Bay Aquarium's Seafood Watch at www.montereybayaquarium.org/cr/seafoodwatch.aspx to learn more about sustainable seafood, and download a wallet-size reference guide for sustainable choices in the Northeast. The guide is updated often to reflect biological and economic changes.
- ◆ Purchase Fair Trade Certified products, including coffee, tea, herbs, cocoa and chocolate, fresh fruit, sugar, rice, honey, and spices. According to TransFair USA, a nonprofit that audits transactions between Fair Trade Certified companies and suppliers, such products benefit farmers and farmworkers in developing countries by enabling them to compete in the global marketplace and guarantee fair prices for farmers.

Paper and Plastic

- ◇ Most plastic containers are labeled with numbers from 1 to 7. Avoid those made with 3, 6, and 7 plastics — containers made with these plastics may release toxins that affect foods and liquids.
- ◆ Replace paper towels with multiuse microfiber cloths.
- ◆ Replace paper coffee filters with reusable ones.
- ◆ Order paper products in bulk to reduce packaging.
- ◆ Replace plastic containers — especially baby bottles — with glass containers.
- ❖ Purchase paper towels, coffee filters, and napkins with a minimum 30 percent postconsumer recycled content.
- ❖ Purchase brown paper products or those labeled elemental chlorine free (ECF) that are bleached with alternative chlorine compounds.

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Appliances

- ◆ Purchase Energy Star appliances. Visit Energy Star at www.energystar.gov for qualified appliances.
- ◆ Select metal rather than plastic appliances.
- ◆ Select easy-to-clean appliances.

Furnishings

- ◆ Select furniture and flooring that won't easily absorb moisture.
- ◆ Consider using recycled content, reclaimed wood, and rapidly renewable materials. Build It Green at www.bignyc.org is a nonprofit retail outlet for salvaged and surplus building materials. Also visit New York WasteMatch's Material Exchange at www.wastematch.org.
- ❖ Use Forest Stewardship Council–certified hardwood for cabinets, furniture, and flooring to ensure sustainable forest management.

Kitchen: Waste Stream

Reduce

- ◆ The Environmental Protection Agency estimates food garbage accounts for 12 percent of the country's total waste stream.
  - Conduct an inventory of food and other supplies before purchasing.
  - Store food in resealable containers to prevent dehydration, spoilage, and leakage.
  - Inspect food shipments for freshness before accepting them.
  - Place newest food at the back of shelves and coolers so existing stock is used first.
  - Donate edible leftovers to a food bank such as City Harvest at www.cityharvest.org or the Food Bank For New York City at www.foodbanknyc.org.
  - Remove trays from public dining rooms to discourage taking food that might be wasted.
  - If composting, chop unused vegetables before adding them to the compost pile.
  - Install order-tracking software to improve purchasing and inventory control.

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Reuse

- ◇ Encourage reusable lunch bags and food containers.
- ◆ Provide reusable cups, mugs, plates, and silverware.
- ◆ Find refillable alternatives to single-serving containers, including condiment packages and beverages in cans and bottles.

Recycle

- ◆ Design a practical kitchen recycling system (see Recycling).
- ◆ Purchase products packaged in recyclable materials.
- ◆ Recycle all old appliances. Contact the New York City Department of Sanitation at 311 to learn more about recycling appliances.
- ◆ Compost kitchen scraps to create fertilizer and save landfill space. You can do it yourself in a composting bin, or hire a private recycling center. Composting turns organic waste, such as fruit and vegetable peels and tea and coffee grounds, into valuable, enriched soil that is great for houseplants and the garden.

Waste Not, Want Not

- Determine whether a compost pile, a compost tumbler, or a compost bin is most appropriate for your space.
- Add green, protein-rich material — such as scraps, eggshells, coffee grounds, and chopped fruit and vegetable peels — to the compost.
- Mix in dry brown material, like leaves, strips of newspaper, grass clippings, and paper towels.
- Do not add meat scraps, bones, colored paper, aluminum foil, glass, or diseased plants.
- Maintain a balance of greens and browns — too much of any one material will slow the compost process. To ensure the right mix, add materials alternately.
- Keep the compost aerated by turning it after adding new materials.
- Water the compost pile to keep it moist, but do not allow it to get soggy. The soil should be kept as moist as a rung-out sponge.
- The temperature within the pile should reach 160 degrees to decompose properly.
- Apply the finished compost to plants.
- Compost piles might not break down matter efficiently in the winter, so check the temperature frequently with a compost thermometer to ensure a proper temperature.
- For more details on composting and for workshops and events, visit the New York City Compost Project at www.nyccompost.org.

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Kitchen: Water Efficiency

- ◇ Keep water pitchers refrigerated to eliminate running the tap for cold water.
- ◇ Check that all kitchen faucets flow at a rate of 2.5 gallons per minute.
- ◆ Install an under-sink water-filtration system.

Laundries: Energy Efficiency

Laundries are another target for greening.

Washing Machine

- ◇ Set the washing machine's temperature to cold, and use cold-water detergents to increase the efficiency of cold cycles. (According to Energy Star, 80 to 95 percent more electricity is used just to heat a washing machine's water.)
- ◇ Run the washing machine only when full.
- ◇ Leave the machine's door open for an hour after use to release moisture.
- ◆ Purchase Energy Star models that use less water and less energy, saving up to $550 over the machine's lifetime.
- ◆ Purchase front-loading models. Energy Star has found that these models use 40 to 60 percent less water, 30 to 50 percent less energy, and 50 to 70 percent less detergent.

Helpful Hints for Kitchen Greening

- Leave space around applicances.
- Use Energy Star–qualified appliances.
- Run only full dishwashers, and fill extra spaces in the fridge and freezer with bottles of water or bags of ice.
- Keep appliances clean.
- Measure unwanted leftovers — and buy less next time.
- Eat less red meat.
- Use a coffee thermos or a coffee machine with a timer.

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Dryer

There is no Energy Star label for dryers. All models use similar levels of energy.

◇ Clean the dryer's lint trap after every use.
◇ Clean excess lint from the dryer's vent.
◇ Check the outside vent to ensure it's not blocked and is closed between uses.
◇ Dry only full loads, but do not overload.
◇ Use a moisture-sensor setting so the machine shuts off when it no longer detects humidity.
◇ Use a cool-down cycle to make use of residual heat for final minutes of drying.
◆ Ensure that the dryer's outside duct is made of heavy-gauge, galvanized material.
◆ Air-dry at least some clothes on a rack or clothesline.
◆ Hire a professional HVAC contractor to clean metal ducts.
◆ Replace flexible ventilation hoses when lint begins to build up.

Iron

◇ A plugged-in iron consumes energy on standby. Unplug the iron, and you'll also ensure that the heating element is off.

Laundries: Sustainable Purchasing

◇ Purchase phosphate-free laundry detergent. To learn more about the effects of phosphates on the environment, visit the Discovery Channel's Planet Green at http://planetgreen.discovery.com/go-green/green-laundry.
◇ Buy concentrated detergents in bulk to reduce packaging.
◇ Dilute concentrated detergents.

Just the Facts

- The Environmental Protection Agency estimates that methane gas released from landfills accounts for nearly 23 percent of all deadly gas emissions that contribute to global warming.
- Don't set your hot-water heater higher than 120 degrees. According to the United States Department of Energy, for each 10-degree decrease in temperature, you save between 3 and 5 percent in energy costs.

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Outdoor Spaces: Energy Efficiency

Outdoor spaces, such as campsites, gardens, and parking lots, are potential candidates for environmentally friendly attention.

- ◇ Change mowing schedules to reflect grass growth. Adjust mower blades to cut just the top third of the grass, but allow the grass to grow enough to shade weeds.
- ◆ Plant trees and shrubs that are deciduous or lose leaves seasonally, on the southern and western sides of buildings to provide summer shade and winter sunlight. Computer modules developed by the United States Department of Energy indicate just three properly placed trees can save a few hundred dollars in annual heating and cooling costs.
- ◇ Avoid, where possible, using unshaded rock, cement, or asphalt — these increase temperatures around a building and radiate heat after sunset. (Daytime summer temperatures are often 3 to 6 degrees cooler in neighborhoods with trees.)
- ◆ Plant trees and shrubs to shade air-conditioning units.
- ◆ Place solar-powered lights along walking paths.

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Outdoor Spaces: Sustainable Purchasing

- ◇ Plant local or adapted plants to encourage a self-sustaining landscape. They reduce irrigation water and the threat of invasive species and attract native wildlife.
- ◇ Plant a wide variety of species.
- ◇ Mulch to maintain soil moisture.
- ◇ Eliminate or minimize the use of toxic fertilizers, pesticides, and herbicides to reduce environmental degradation as well as operating costs.
  - Replace pesticides with botanically based biodegradable oils, soaps, and sprays.
  - Pull up weeds before they release seeds.
  - If composting, replace fertilizers with the resulting compost soil.
- ◆ Test the soil of plants before purchasing.
- ◆ Plant turf grass only in areas for walking and sports.
- ◆ Purchase sturdy wood and metal gardening tools.
- ◆ Purchase outdoor furniture made of Forest Stewardship Council–certified wood or recycled or reclaimed plastic, steel, or cast iron.

Greening Idea: Hold a native-plant sale at your facility.

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Outdoor Spaces: Waste Stream

- ◇ Conserve existing open spaces.
- ◇ Do not throw leaf litter or anything else down storm drains.
- ◇ Allow grasses and plants to grow deep roots to hold soil in place.
- ◆ Restore and protect a damaged habitat using a well-developed plan.

Storm-Water Runoff

- ◆ Collect rainwater with gutters that carry runoff to cisterns or barrels. Use this water to irrigate plants.
- ❖ Promote infiltration by limiting impervious surfaces. Use paving products that allow water to soak into the ground.
- ❖ Create retention ponds where runoff naturally collects to prevent flooding.
- ❖ Plant rain gardens to take advantage of areas in which puddles collect during storms.
- ❖ Install green, or vegetated, roofs. The plants will absorb rainwater that would otherwise be wasted.

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Outdoor Spaces: Water Efficiency

- ◇ Turn off decorative water fountains during droughts and on very hot days to prevent evaporation.
- ◇ Add mulch to soil to maintain moisture.
- ◆ Find and fix all leaks.
- ◆ Replace lawns with well-mulched native plant gardens.
- ◇ Limit the amount of quality water used to water lawns and gardens.
- ◇ Water during the coolest times of day to prevent evaporation.
- ◇ Adjust sprinklers to water evenly and only where needed.
- ◇ Once a garden is established, apply just one inch of water, including any rain, weekly. Collect rain and irrigation water in a can to measure weekly watering.
- ◆ Replace sprinklers with high-efficiency drip systems.
- ◆ Plant drought-tolerant plant species.
- ◆ Add moisture sensors to automatic sprinklers so they don't operate during rainstorms.
- ◆ Direct gutter downspouts into barrels, and use the water for plants.

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Workstations: Air Quality

Workstations — offices, home offices, schools, and computer labs — are a prime target for greening.

- ◇ Leave space for air to circulate around machines and electronics.
- ◇ Turn off computers, monitors, speakers, and other electronics when not using. (Machines and components continue to use energy even on standby. The chemicals within them emit gases when hot.)
- ❖ Move large printers and photocopiers to well-ventilated areas.
- ❖ Find alternatives to toners, paints, and other products that contain toxins. By reducing or eliminating the use of toxic, carcinogenic, and flammable products, you can create a safer workplace that also helps the environment. For a list of toxic products and links to vendors that may sell alternative, environmentally friendly products, visit NYCWasteLess at www.nyc.gov/html/nycwasteless/html/at_agencies/reducing_toxics.shtml or Green Seal at www.greenseal.org/findaproduct.

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Workstations: Energy Efficiency

- ◇ Eliminate screen savers.
- ◇ Program monitors to enter sleep mode when inactive for 15 minutes. You can change your setting in Control Panel on a PC or in System Preferences on a Mac.
- ◇ Turn off and unplug computers, monitors, printers, scanners, copiers, fax machines, mailing machines, and watercoolers when not in use.
  - Approximately two-thirds of the electricity consumed by a computer is wasted when the machine is on, but not in use.
  - The Climate Group's 2007 *Smart 2020* report found that 41 percent of carbon dioxide emissions from information technology and telecommunications are attributable to computers.
  - According to *The Daily Green*, an average of $90 per year can be saved on your electricity bill if you turn off a computer at night. (For more information, visit www.thedailygreen.com.)
  - Plugging several devices into a power strip or surge protector makes turning off computers easier.
- ◆ Teleconference instead of traveling to meetings.
- ◆ Purchase Energy Star–qualified office equipment.
- ◆ Purchase LCD monitors, which use less energy.
- ❖ Offer employees incentives for using public transportation and walking or biking to work.
- ❖ Buy green energy through the utility company.

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Workstations: Sustainable Purchasing

Paper

Before using paper, always ask yourself if there's an alternative.

◇ Do not over-order items like letterhead, business cards, and pamphlets that include quickly outdated information.

◆ Use recycled paper. The Department of Conservation reports that for each 20 cases of recycled paper, you save 20 trees, 7,000 gallons of water, and 2.5 cubic yards of landfill space.

◇ Purchase paper in white or pale colors — bright, saturated hues cannot be recycled.

◆ Purchase paper that is elemental chlorine free (ECF). ECF products use alternative chlorine compounds for bleaching.

Printing

◇ Purchase remanufactured toner cartridges.

◆ Purchase printers and photocopiers that print on both sides of a piece of paper, or duplex.

◇ Look for water-based press cleaners and soy- or vegetable-based ink. When using an outside printing company:

- Avoid metallic inks and foil stamps, which make paper hard to recycle.
- Order lightweight, uncoated paper.
- Look for a Forest Stewardship Council–certified printer who responsibly handles waste.
- Look for a printer that uses Hewlett-Packard Indigo, a digital-printing process with fewer emissions and less waste than conventional offset printing.

Greening Idea: Purchase eco-friendly gifts, such as memberships, event tickets, or donations.

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Equipment

◇ Share seldom-used machines with nearby facilities.

◆ Rent or lease equipment instead of buying items, such as computers, copiers, and printers.

◆ Purchase Energy Star–qualified office equipment, including computers, copiers, fax machines, digital duplicators, external power adapters, notebook computers, tablet PCs, mailing machines, monitors, printers, scanners, all-in-ones, and watercoolers.

Workstations: Waste Stream

◇ Establish a policy of using double-sided, or duplex, printing and copying. Create a smart-paper plan with ideas found at the Natural Resources Defense Council's website at www.nrdc.org/cities/living/paper/toolkit.asp.

◇ Donate old office equipment that's in good working condition to nonprofit organizations. To recycle cell phones, consider GreenPhone at www.greenphone.com or Shelter Alliance at www.shelteralliance.net, which also offers cell phone recycling opportunities.

◆ Research recycling programs for electronic equipment like computers and monitors, cell phones, PDAs, and rechargeable batteries. These contain mercury and other chemicals hazardous if released into the landfill. Visit the Electronics TakeBack Coalition at www.electronicstakeback.com for more details. The New York City Department of Sanitation also hosts electronic-recycling events twice a year.

Helpful Hints for Workstation Greening

- Turn off computers, monitors, speakers, and other electronics when not in use.
- Move electronics to well-ventilated spaces.
- Don't over-order printed items that may quickly become outdated.
- Buy paper with at least 30 percent recycled content.
- Buy Energy Star–qualified equipment.
- Use a printer's duplex feature to print on both sides of the paper.
- Eliminate screen savers, and program monitors for sleep mode.
- The Environmental Grantmakers Association offers tips on greening workstations and offices. Download www.ega.org/news/docs/GreenOffice.final4.pdf.

Special Websites for Healthcare Facilities

- NYCWasteLess at www.nyc.gov/html/nycwasteless (overview of greening ideas for healthcare facilities).
- The Greater New York Hospital Association at www.gnyha.org (a trade association of nearly 200 not-for-profit hospitals and continuing-care facilities that offers policy analysis and development, as well as advocacy, communications, education, research, and business services).
- Environmental Protection Agency's Region 2 Office at www.epa.gov/region02 (serves New Jersey, New York, and Puerto Rico. Offers information on enhancing environmental compliance and pollution prevention efforts).
- Kentucky Pollution Prevention Center's manual *Healthcare Guide to Pollution Prevention Through Environmental Management Systems*, at www.epa.gov/region02/ems (helps healthcare facilities implement environmental-management systems that minimize environmental impact)
- Healthcare Without Harm at www.noharm.org/ (an international coalition of hospitals, healthcare systems, medical professionals, and environmental and community groups involved in eliminating the incineration of medical waste, minimizing toxins in waste, and encouraging safer environmental practices).
- Tellus Institute publication *Healthy Hospitals: Environmental Improvements through Environmental Accounting*, at www.epa.gov/oppt/library/pubs/archive/acct-archive/resources.htm (examines the use of environmental accounting in hospitals).
- United States Department of Labor's Occupational Safety and Health Administration's Hospital eTool at www.osha.gov/SLTC/etools/hospital (focuses on hazards like latex allergies and exposure to glutaraldehyde, ethylene oxide, mercury, waste anesthetic gases, and needle sticks).

- Practice Greenhealth at www.practicegreenhealth.org (offers a voluntary program, Hospitals for a Healthy Environment, or H2E, to help hospitals enhance workplace safety, reduce waste and waste-disposal costs, and become better environmental stewards).
- New York State Department of Environmental Conservation at www.dec.ny.gov (specializes in compliance and pollution prevention, as well as publications on healthcare industry issues, including mercury management and regulated medical waste).
- New York State Energy Research and Development Authority at www.nyserda.org/programs/Hospitals_Institutions/default.asp?i=7 (includes guidelines, technical assistance, and economic-incentive programs for hospitals and institutions that want to make their facilities more energy efficient).
- Sustainable Hospitals at www.sustainablehospitals.org (provides technical support for selecting alternative or reusable medical equipment, cleaners, and disinfectants, as well as establishing work practices that reduce occupational and environmental hazards).

Greening Vehicles

Vehicles owned by your facility should not be forgotten when conducting your greening survey. Be sure to consult vehicle manual for manufacturers' recommendations.

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Vehicles: Maintenance

◇ Inflate tires to the manufacturer's recommended pressure.
◆ Tune vehicles regularly to reduce fuel consumption by as much as 10 to 20 percent.
◆ Wash vehicles at a professional car wash to reduce water consumption.
◆ Change oil regularly to reduce friction wear and remove harmful substances.
◆ Check and replace air filters regularly — clogged filters use more fuel.
❖ Recycle old tires.
❖ Make sure your mechanic properly disposes of oil, brake fluid, and other substances.

Driving on the Green Side

- EcoDriving USA at www.ecodrivingusa.com — run by the Alliance of Automobile Manufacturers EcoDriving offers a simple guide to increasing gas mileage and reducing your carbon footprint.
- United States Department of Energy and Environmental Protection Agency Fuel Economy website at www.fueleconomy.gov — contains data on greenhouse gas emissions for new and used cars to confirm manufacturers' results.
- Alliance to Save Energy's Drive Smarter Challenge at www.drivesmarterchallenge.org — a calculator that estimates your car's money-saving potential.

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Vehicles: Fuel Efficiency

- ◇ Purchase the lowest octane level your vehicle can use.
- ◇ Be certain the gas-tank cap is firmly locked.
- ◇ Park in the shade — fuel can evaporate when a vehicle is parked in the sun.
- ◇ Use cruise control on the highway — maintaining a constant speed will reduce fuel consumption.
- ◇ Remove excess weight from the trunk.
- ◇ Open vents or turn on air-conditioning when driving at high speeds, and open windows and turn off air-conditioning when driving at slow speeds.
- ◆ Remove unused roof racks to reduce air resistance and increase gas mileage.
- ◆ Combine errands and avoid short trips — short trips taken from a cold start can use twice as much fuel as one trip covering the same distance.
- ◆ Following the owner's manual, use overdrive to reduce engine wear and save fuel.
- ◆ Instead of idling, turn off the engine. According to *The Daily Green*, idling for 10 seconds wastes more gas than is needed to start the engine.
- ◆ Avoid rapid acceleration and unnecessary braking. According to the United States Department of Energy, aggressive driving can reduce gas mileage between 10 and 33 percent.
- ◇ Observe the legal speed limit — mileage decreases rapidly after 60 miles an hour. The United States Department of Energy reports that every five miles above 60 miles an hour is like paying an additional 30 cents a gallon.
- ❖ Purchase or lease vehicles that use the least fuel or those that use alternative fuel sources.

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Vehicles: Emissions

- ◆ Create a no-idling policy for agency-owned vehicles.
- ◆ Designate no-idling zones on and around agency property.
- ❖ Use ultra-low sulfur diesel fuel or bio-diesel for agency vehicles.
- ❖ Retrofit buses with tailpipe filters to capture particles in the exhaust system.

Vehicles: Alternatives

- ◇ Teleconference instead of traveling to meetings.
- ◆ Hire companies that use hybrid vehicles, rather than use taxis and car services.
- ◇ Allow employees to use pretax income to pay for mass transit.
- ◇ Post a carpool sign-up sheet to help connect carpool partners.
- ◆ Offer preferred parking for carpools and vanpools.
- ❖ Provide bike storage and locks.
- ❖ Provide incentives for bicycle commuters, including changing rooms, shower facilities, and a relaxed dress code.
- ❖ Provide shuttles to mass transit.
- ❖ Use businesses that rent vehicles by the hour for group travel.
- ❖ Create incentives for carpooling.

For more information on vehicle technologies and alternative fuels, visit the United States Department of Energy's Clean Cities Coalition at www.eere.energy.gov/cleancities.

Consider the Alternatives

- Light-duty vehicles are available in a variety of forms, including hybrid electric, natural gas, ethanol, and bio-diesel. Within two or three years, plug-in hybrid-electric vehicles should be available.
- Plug-in hybrids operate in the all-electric mode for 30 to 40 miles on longer trips, the engine kicks in and the vehicle operates in a standard hybrid-electric mode. At night, the vehicle can be plugged in to recharge. A number of plug-ins from major manufacturers are set for release by 2011.
- Don't forget about using electric vehicles. Operating at a maximum of 25 miles an hour, electric vehicles are useful for short trips not involving highways.
- If your agency is planning to renovate its facility, consider building a vehicle-charging infrastructure for parking areas.

New Construction

According to *Building* magazine's "The True Costs of Green Building," published April 2006, constructing an environmentally sound building will ultimately save more than 10 times its initial cost — however, that's only if greening is part of the building's DNA. Installing green features once a structure is built is much less economical.

In recent years, the initial cost of building green facilities has dropped substantially. According to the United States Green Building Council's New York chapter, it once cost 5 to 15 percent more to build a green structure than a traditional structure. Now, with New York buildings costing $200 a square foot, first costs range from 0.25 percent to 3 percent higher for commercial construction and from 3 to 18 percent higher for residential buildings. But in most cases, savings in operating the building over its life span offsets these costs. First costs may also decrease as more professionals become more aware of green procedures.

Other economic factors that should be taken into account are increased productivity, higher rents, lower turnover rates, and other real estate benefits. Greening can provide significant competitive advantages for businesses.

Designing a green building or renovating an existing one has multiple environmental advantages, according to the United States Green Building Council. These benefits include:

- Enhancing and protecting ecosystems and biodiversity.
- Improving air and water quality.
- Reducing solid waste.
- Conserving natural resources.
- Reducing operating costs.
- Improving employee productivity and satisfaction.
- Minimizing strain on local infrastructures.

For useful greening information, refer to the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. LEED's 2009 rating system also explains how to apply for environmental credits.

A 2007 study by the international cost-estimating firm Davis Langdon, *The Cost of Green Revisited*, found "no significant difference in average costs for green buildings as compared to non-green buildings," even though construction costs have risen dramatically. However, dispelling the myth that greening is an expensive, extra feature, rather than an inherent part of the design, is a persistent problem.

Just the Facts

According to the United States Green Building Council, non-green buildings hurt the environment. They represent 38 percent of our country's carbon dioxide emissions and create 30 percent of our waste. Every year, non-green buildings consume:

- 72 percent of our electricity.
- 39 percent of our energy.
- 40 percent of our raw materials.
- 14 percent of our drinking water.

Approaching the Green

- Set your goals early.
- Build a green design team.
- Integrate the design and building process.
- Convene design workshops.
- Use the LEED Rating System as a guide.
- Design facilities to maximize the environmental value.

For more important tips, visit the National Resources Defense Council at www.nrdc.org/buildinggreen/approach/goals.asp.

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❖ takes significant time and money, but will dramatically improve the environment

Exterior Maintenance

Roof: Preventive Maintenance

- ◇ Annually inspect the roof's membrane, insulation, parapets, coping tiles, plumbing stacks, venting pipes, and other penetrations to determine if there are any problems that need correcting. (Other penetrations include chimneys, elevator shafts, dumbwaiter shafts, roof ventilators, and bulkheads.)
- ◇ Watch for leaks, especially in the winter. In New York's climate, improperly installed gutters and flashing can lead to ice dams. Any damage will need to be repaired.
- ◇ Inspect mechanical equipment on flat roofs for vibration loads, water drips, heavy equipment traffic, poor location, and clogging of roof drains and parapet flashing.
- ◆ Replace the roof, when necessary, with one that is properly insulated to avoid rotting.

Roof: Green Measures

- ◆ *High-efficiency insulation.* Insulation conserves energy, enhances comfort, reduces the size of heating and cooling equipment needed, and prevents winter condensation. It can also add structural strength, reduce noise and vibration, stop air leakage, and improve fire resistance.
- ◆ *Reflective roof.* Coating the roof with reflective material and, when possible, shading it with trees will block the sun's heat. This very effective measure can reduce cooling costs from 10 to 40 percent. Energy Star roofing products reflect the sun's rays and decrease the roof's surface temperature by as much as 100 degrees, to reduce peak cooling demands by 10 to 15 percent. Measure your roof's energy-efficiency level by checking the solar reflectance index, and try to achieve the highest rating possible. A reflective roof and a conventional roof may cost the same. If not, upfront investments will lead to long-term cost savings. For more information on Energy Star products, visit www.energystar.gov.

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◇ *Green roof.* According to the United States Green Building Council, you can reduce the heat island effect — built-up areas that are hotter than rural ones — by replacing heat-absorbing surfaces on low-sloped roofs with plants, shrubs, and small trees that cool air through evapotranspiration. A green roof includes drainage, geotextiles, soil, and layers of plants or a thick sod of native grasses. Some green roofs are considered gardens, while others have grass and plants that require no maintenance or watering. Green roofs protect the roof membrane, absorb rainwater, and insulate. Green roofs also draw native wildlife, limit noise and dust, generate oxygen, and absorb air pollutants. They are aesthetically pleasing and require less maintenance than regular roofs.

◆ *Storm water management.* When storm water washes over rooftops and other hard surfaces, it picks up pollutants before it drains into nearby bodies of water and sewage systems. Fast-flowing storm water can cause flooding, erosion, and sewer overflows, as well as destroy natural habitat. Eliminate or minimize the water flow on rooftops and paved areas through the following measures:

- *Green roofs.* To collect and filter water, and facilitate evaporation.
- *Rainwater harvesting.* To capture and reuse water.
- *Landscaping and rain gardens.* To filter and drain water, and facilitate infiltration.
- *Downspout disconnection.* To direct rain to landscaping, rather than to sewers.
- *Porous pavement.* To enable water to soak through the pavement into the ground.

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Walls and Masonry Systems: Preventive Maintenance

◇ For exterior walls, regular maintenance is critical to evaluating the condition of the paint and the extent of water penetration, which may cause rot or mortar damage. If water is a problem, consider repointing the masonry. Masonry cracks and broken bricks should be repaired immediately.

Walls and Masonry Systems: Green Measures

◇ Select exterior paints that are free of odor and contain no carcinogens or neurotoxins, a minimum level of volatile organic compounds (VOC), and no known heavy metals. Paints should also comply with regulations developed by the United States Department of Labor's Occupational and Safety Health Administration (OSHA) regulations. For a list of products certified by Green Seal, see www.greenseal.org/findaproduct/paints_coatings.cfm.

Windows and Doors: Preventive Maintenance

◇ Annually inspect and repair broken windowpanes and unstable frames, rotted or rusted sashes and frames, and damaged caulking and weather-stripping. If windows require replacement due to extensive wear and tear, broken glazing, or extreme leakage, consider high-efficiency glazing.

◇ Routinely inspect each door's hardware for adequate lubrication, cleanliness, casing alignment, hinge adherence, lock and latch security, and overall functionality.

◇ Inspect doors for dents, splinters or rough surfaces, weather-stripping, and overall functionality.

Windows and Doors: Green Measures

◆ Save money, increase comfort, and protect furnishings with thermal windows and doors. Thermal windows are double-paned and made from frame materials that decrease the transference of heat, improve insulation, and reflect ultraviolet rays.

Interior Maintenance

Mechanical/HVAC Systems: Preventive Maintenance

Proper maintenance of the HVAC system — heating, ventilation, and air-conditioning — is key to energy efficiency. High-performance equipment greatly reduces first-time expenses and long-term operating costs. When considering new equipment, look for durability and efficiency. You'll also want a system that is easy to install and low maintenance.

Mechanical/HVAC Systems: Green Measures

- *High-efficiency boilers.* Because Energy Star boilers have electric ignitions instead of pilot lights, they extract more heat from fuel, and their sealed burner uses outside air as additional fuel. Proper sizing and installation are just as important as product quality. An oversized boiler will have a shorter life span than a properly sized boiler because it will cycle on and off more often.
- *Elevator controls.* Machine-Room-Less (MRL) elevators have reduced size, weight, heat output, and energy consumption compared to hydraulic elevators.
- *Air-conditioning systems.* Energy Star air-conditioners with timers will use 10 to 14 percent less energy. Units not sized properly will cool the room quickly but will not remove humidity.
- *Programmable thermostats.* To save energy without sacrificing comfort, install a programmable thermostat. Heating and cooling will decrease automatically when the building is lightly occupied. Locate the thermostat on an interior wall, away from heating and cooling vents and drafts. If installation requires more than replacing the old thermostat, contact an HVAC professional. If replacing a manual thermostat with a mercury switch, contact a recycling or hazardous materials center about disposing the old thermostat.

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Plumbing: Green Measures

◆ *Low-flow fixtures.* Replace faucets, toilets, urinals, and showerheads with low-flow fixtures. These significantly reduce the stream without reducing the pressure. Measure the flow by checking the gallons per flush and gallons per minute.

Fixture	Low Flow
Toilets	1.6–1.1 gallons per flush
Urinals	0.125 gallons per flush
Showerheads	1.8–1.5 gallons per minute
Kitchen Faucets	2.2 gallons per minute
Bathroom Faucets	0.5 gallons per minute
Metering Faucets	0.25 gallons per minute

◆ *On-demand hot-water systems.* Conventional tanks hold water at a constant temperature. On-demand hot-water systems deliver without storage. The water is heated when passing through either a gas burner or an electric heating device, delivering a constant supply. One on-demand hot-water system will not be able to handle simultaneous uses, and separate systems may be needed.

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Lighting: Preventive Maintenance

◇ Repair lighting immediately to avoid progressive deterioration. Be sure your system maintains correct light intensity in all areas.

Lighting: Green Measures

◆ *Fixtures.* Replace fixtures with high-efficiency lamps, ballasts, reflectors, and lighting controls.

◆ *Bi-level lighting.* Install bi-level lighting to meet minimum code requirements at all times, but increase light when motion is detected. This is most efficient in low-traffic areas, such as hallways and stairways.

◆ *Lighting controls.* Install occupancy sensors in areas with relatively low traffic, such as conference rooms and basements. Lights will turn on automatically when motion is detected and will turn off after the area has been vacant for a specified amount of time.

◇ *Daylighting.* Open shades and turn off lights when daylight can illuminate the space. Some controls can sense the amount of daylight and dim lights accordingly.

Helpful Hints

- Make certain plumbing fixtures meet Energy Policy Act guidelines.
- Repair all plumbing leaks and condensation problems.
- Fill gaps or holes in walls.
- Don't let water collect on roofs, and watch for ice dams.
- Don't block airflow from radiators, intakes, or diffusers.
- Check walls for seepage.
- Don't let light shine into an empty room.

Just the Facts

- According to the Natural Resources Defense Council, Americans make up 4 percent of the world's population but produce more than 25 percent of all carbon dioxide emissions from fossil-fuel use — that's more than China, India, and Japan combined.
- The Natural Resources Defense Council reports that allowing a faucet to leak is the same as throwing 20 gallons of water down the drain every day. A leaking toilet wastes 200 gallons per day.
- According to Energy Star, a programmable thermostat can save $150 each year on energy costs.

Glossary

Adapted Plants
Plants adapted for a specific area to grow well without irrigation, fertilization, or protection from pests and typical weather.

Bi-Level Lighting
Lighting that uses motion sensors to fully illuminate an occupied area and dim unoccupied ones. Works best in areas of low, intermittent use — such as hallways and stairwells — that are often required to maintain a minimal light level for security.

Biodegradable Products
Products that decompose into natural elements after disposal in the right environment. Degradability claims should indicate whether the product or its packaging is biodegradable. See the Federal Trade Commission's *Part 260: Guides for the Use of Environmental Marketing Claims* at www.ftc.gov/bcp/grnrule/guides980427.htm for more information.

Biodiversity
Also known as biological diversity, biodiversity means plants and animals that work together to form an ecosystem. Only an ecosystem with a high level of biodiversity is considered healthy.

Botanically Based Products
Products containing ingredients extracted from plants.

Carbon Monoxide Detectors
Detectors that register carbon monoxide, a colorless, odorless, tasteless gas. These devices send an alert, giving occupants time to ventilate the space and leave before breathing the harmful gas.

Carpet Greening
Carpets, including adhesives and cushions, that meet the Carpet and Rug Institute's (CRI) Green Label and Green Label Plus programs. CRI tests for volatile organic compounds, or VOCs.

Combustion-Based Heating and Water-Heating Equipment
Equipment that burns fuel to create heat for spaces or hot water.

Community Supported Agriculture (CSA)

Local farmers selling produce directly to the public. Shares are available for purchase at the start of the season. As the fruits, vegetables, and herbs are harvested, "shareholders" pick up the produce from the farm or from a drop-off location. Many CSAs are organic.

Compact Fluorescent Light Bulbs (CFLs)

Bulbs that use 66 to 75 percent less energy than conventional incandescent bulbs and can last up to 10 times as long. Specially designed CFLs can work on recessed fixtures, dimmers, chandeliers, and outdoor lights. To find the right light output, divide the wattage for an incandescent bulb by three. For example, a 60-watt incandescent bulb can be replaced with a 20-watt CFL. Because CFLs are more energy efficient and have a longer lifetime, reduced bills quickly make up for their additional cost.

Compost

A combination of dead plants and leaves broken down by insects and microorganisms that improves soil quality and creates a better environment for root growth. This rich black dirt helps the structure and texture of soil while retaining moisture and fertilizing plants.

Compost Bin

A simple stationary container for decomposing matter. Most compost bins require a tool for turning the compost regularly to maintain an ideal oxygen level.

Compost Pile

Compost piled on level ground with good drainage in areas without exposure to direct sunlight or strong winds. Compost piles are often lined with a brick or stone foundation to keep the height and width of the pile between 3 and 5 feet.

Compost Tumbler

A sealed container that makes it easy to mix compost without tools.

Compostable Materials

Materials that safely break down into usable compost. For more information, see the Federal Trade Commission's *Part 260: Guides for the Use of Environmental Marketing Claims* at www.ftc.gov/bcp/grnrule/guides980427.htm.

Concentrated Cleaning Materials

Products sold in concentrated form that must be diluted before use. Such products require less packaging and also save storage space.

Dehumidifier

A unit that removes excess humidity. Indications of excess moisture are condensation, a wet shine on walls and ceilings, and musty smells. A high level of humidity not only makes a room feel stuffy but can also generate bacteria.

Drip Irrigation

An irrigation method in which water is delivered at low pressure directly to plants through buried hoses or pipes. Drip irrigation is highly efficient because it limits the amount of water evaporation.

Dual-Flush Handles

Toilet handles that permit a normal flush or a flush that uses up to 30 percent less water. The normal flush on these handles can range from 1.1 to 1.6 gallons per flush.

Energy Star

A joint program of the United States Environmental Protection Agency and the United States Department of Energy. Energy Star rates appliances that meet strict efficiency guidelines. See also Energy Star at www.energystar.gov.

EnergyGuide Label

A prominent yellow and black label on newer appliances that shows the estimated annual operating cost and allows for comparisons with other models.

Environmentally Sustainable Products

Products identified as having a lesser or reduced effect on health and the environment when compared with competing products.

Evapotranspiration

Loss of water from soil by both evaporation and transpiration.

Fair Trade Certified

A program that empowers poor farmers and farm workers by investing in their farms and communities and developing their business skills for the global marketplace. Certified goods ensure fair prices, fair labor conditions, and environmental sustainability while encouraging community development. These products include coffee, tea, herbs, cocoa, chocolate, fresh fruit, sugar, rice, and vanilla. See also TransFair USA at www.transfairusa.org.

Faucet Aerators
Products that add air to the water from the faucet, allowing water conservation without a loss in water pressure.

Formaldehyde
A naturally occurring substance found in small amounts in animals and plants. When present in high concentrations, formaldehyde can cause headaches, dizziness, mental impairment, and other symptoms, including watery eyes, burning sensations in eyes, nose, and throat, nausea, coughing, chest tightness, wheezing, skin rashes, and asthmatic and allergic reactions.

Green Energy or Green Power
Power derived from solar, wind, geothermal, biomass, or low-impact hydro sources that can be purchased through Green-e certified companies. Green-e is the nation's leading independent retail-certification program for renewable energy and greenhouse-gas-emission reductions.

Green Roof
A roof that replaces heat-absorbing man-made materials with plants, shrubs, and small trees that cool air through evapotranspiration. Green roofs also absorb rainwater that would otherwise run into nearby water bodies. Basic green roofs have three layers: a drainage and water-retention mat; a bio-blanket that prevents soil erosion and retains water; and lightweight soil with low-growing sedum plants.

HEPA Filters
High-efficiency filters that capture most small air particles. HEPA-filter vacuums are beneficial for asthma and allergy sufferers. Products with sealed HEPA filters are the most effective, because they draw all the air entering the machine and capture more allergens.

Humidity
Water vapors in the air that can make a room feel damp. This dampness can lead to mold and bacteria.

Impervious Surfaces
Nonporous surfaces that do not absorb water and thus generate runoff. The imperviousness, or degree of runoff potential, can be estimated for different surfaces. Pervious, or porous, surfaces are recommended for outdoor uses — such as parking lots, walkways, patios, and courtyards — to reduce the impact of runoff. Nonporous surfaces are recommended for indoor surfaces, because they are easy to clean and dry.

Incandescent Light Bulbs

Conventional light bulbs that produce light with heat, with a significant portion of the heat warming the room instead of producing light. Compact fluorescent light bulbs (CFLs) and light-emitting diodes (LEDs) are gradually replacing many incandescent bulbs. Switching is easy, because most fixtures made for incandescent bulbs can use CFLs.

Invasive Species

Adaptable, aggressive species that tend to overrun ecosystems. Collectively, they are one of the great threats to biodiversity and ecosystem stability.

Landfill

A waste disposal site where materials are buried. Landfills require large open spaces and can contaminate soil and groundwater.

Light-Emitting Diodes (LEDs)

Energy-efficient bulbs with a long life span. Because LEDs focus light directly where needed, they work well in exit signs and flashlights, but they are not yet suited for general-purpose lighting.

Local Plants

Also known as native plants, these species — found naturally — are not introduced by humans. They thrive under local conditions and among local wildlife — including pollinators and migratory birds.

Microfiber Cloths

Durable towels that can be used multiple times.

Occupancy Sensors

Sensors that turn on lights for occupied rooms and turn them off in empty ones. This retrofit works best in infrequently used areas, such as conference rooms and staff kitchens. Occupancy sensors are also used in bi-level lighting and in most exterior security lighting.

Off-Gassing

Pollution caused when synthetic or natural products release chemicals into the air through evaporation. The chemicals pollute the indoor air. See also VOCs.

On-Site Renewable Energy

Systems that capture solar, wind, geothermal, water, or bio-based energy to satisfy on-site electrical demand or directly offset space heating, cooling, and water heating. Net metering permits on-site generators to sell excess electricity to the regional power grid if the system produces more energy than the site requires at any given time.

Phantom Loads

Also referred to as vampire loads, phantom power, or idle current, these occur when radios, computers, microwaves, plasma TVs, and AC adapters and charging units waste electricity on standby mode. Using a power strip makes it easy to turn off several items at once.

Phosphate-Free Products

Products lacking the phosphate conventionally added to cleaning products to improve dirt removal and minimize soap scum. When phosphate enters a water body through wastewater, it causes algae to grow faster. Excess algae on the surface of a river, lake, or stream blocks necessary sunlight from reaching underwater plants. It can also make drinking water more expensive to filter, spoil its taste or smell, and make it unsuitable for swimming.

Pollution

The introduction of harmful substances or products into the environment. The Environmental Protection Agency's definition of pollution prevention is "reducing or eliminating waste at the source by modifying production processes, promoting the use of nontoxic or less-toxic substances, implementing conservation techniques, and reusing materials rather than putting them into the waste stream."

Post-Consumer Recycled Content

Waste that can no longer be used for its intended purpose but is collected and remanufactured as a new product. The higher the percentage of post-consumer recycled content, the lower the requirement for new materials.

Potable Water

Safe drinking water from wells or municipal water systems.

Pre-Consumer Recycled Content

Material diverted from the waste stream during the manufacturing process and recast as a new product.

Programmable Thermostats

Thermostats that allow temperature settings for four periods, eliminating the need to manually change the settings. Energy Star suggests at least an 8-degree change when a building is empty. The building will return to a comfortable temperature by the time it is occupied again. Heating and cooling needs will change based on occupancy and time of year.

Rain Garden

A garden that solves storm-water runoff problems. Rain gardens are commonly in or near parking lots or within residential developments. Runoff collects in the gardens and is filtered through the soil. Plants and shrubs keep the soil in place and absorb the rainwater and pollutants through their roots.

Rapidly Renewable Materials

Materials made from plants that take 10 years or less to grow to maturity and are harvested in a sustainable manner.

Reclaimed Wood

Wood often salvaged from buildings scheduled for demolition or recently harvested disease-killed trees. Reclaimed wood is sometimes found in species, coloration, and quality no longer available in new timber.

Recyclable

A product that can be separated from the solid waste stream and collected for reuse through an established recycling program.

Recycling

The collection, reprocessing, marketing, and use of materials diverted or recovered from the solid waste stream.

Retrofit

Adding new building technologies or features that will improve storm-water filtration or water or energy efficiency.

Salvaged Materials
Materials from existing buildings or construction sites reused in other buildings. Common materials, such as structural beams and posts, flooring, doors, cabinetry, brick, and decorative items, can be found at salvage centers like New York City's Build It Green, in Astoria, Queens.

Storm-Water Runoff
Rain that flows off such impervious surfaces as roofs and parking lots into sewer systems or nearby bodies of water.

Sustainability
Satisfying the needs of the present without compromising the ability of future generations to meet their own needs.

Toilet Dams
Products placed in the tank to fill space otherwise occupied by water. Toilets manufactured after 1992 are required to use 1.6 gallons or less per flush. Older models may use up to six gallons per flush. For older toilets with tanks, found mainly in residences, installing toilet dams can conserve water without lowering water pressure. Before installing a toilet dam, check the tank and bowl for leaks to see if replacement is a better option.

Track-Off Mats
Mats placed at entryways to capture dirt and debris from shoes. They should be cleaned weekly or more often. Open grates or grills are the most effective options.

USDA-Certified Organic
Foods grown without pesticides or artificial fertilizers, and livestock reared without the routine use of antibiotics or growth hormones.

Volatile Organic Compounds (VOCs)
Compounds present in such common building products as paints, sealants, and adhesives. VOCs cause pollution both indoors and out. When released outdoors, VOCs can form ground-level ozone, a major component of smog; when released indoors, VOCs can affect health.

Energy and Green Building Resources

Long Island Power Authority

The Long Island Power Authority (LIPA) is Long Island's primary electric service. Operating as a nonprofit entity, LIPA focuses on cost-containment, efficiency, and service reliability. LIPA assists not-for-profit organizations with services that include enhanced energy-efficiency programs, a peak-reduction program, and solar-electricity options, helping organizations control and lower costs.

The information below was provided to UJA-Federation of New York by LIPA. For more or updated information on these programs, visit LIPA at www.lipower.org. For more information on the applicability of the tax credits and exemptions discussed here, please consult a tax professional.

In addition to the opportunities below, LIPA offers telephone consultations at 1.800.966.4818 to explore opportunities and options that may be appropriate for you and your agency.

Commercial Construction Program

LIPA's Commercial Construction Program was created to help lower the cost of purchasing energy-efficient measures. There are three paths in the Commercial Construction Program: a prescriptive approach, a custom approach, or whole-building design. For more information, visit www.lipower.org/efficiency/commercial.html.

Prescriptive Approach

Incentives may be available to developers and building owners who agree to specify and install qualified energy-efficient equipment in buildings under construction or renovation. Annual incentives may go up to $100,000 per project or $300,000 per customer, and other incentives are available for prequalified equipment. Nonresidential customers in LIPA's service territory, existing facilities undergoing major renovations, and new buildings in the design or early stages of construction are eligible. Customers choose from a list of qualified equipment and measures that qualify for incentives, including lighting, cooling, premium-efficiency motors, air compressors, HVAC controls, commercial kitchen equipment, and vending-machine controls.

Custom Approach

Incentives for more-complex energy-saving measures may be available through a custom approach that provides the flexibility to choose unique measures. Annual financial incentives are available up to $200,000 per building, and a maximum of $600,000 in incentives is available for custom applications in any one calendar year. Each incentives is calculated on a case-by-case basis, and rebates cannot exceed the electric benefits to LIPA. Commercial, industrial, and institutional or government projects are eligible, including office buildings, manufacturing facilities, and schools. Businesses can propose any electric-saving measure that has the potential to be cost effective and is not on the Prescriptive Approach equipment rebate list. LIPA may also provide up to $10,000 in technical assistance, including consultants to help you choose and implement energy-efficient measures and equipment. For more complex projects, LIPA will provide 50 percent of any additional costs, up to $50,000.

Whole-Building Design

Building owners and their design teams can aggressively pursue options that fully integrate building envelope and operating systems to produce a building as energy efficient as current technology and design allows. Incentives will cover a portion of the additional design and equipment expenses required to create an exemplary building, and annual financial incentives are available up to $400,000 per building or $500,000 for a LEED Certified Green Building. A maximum of $800,000 in incentives is available for Whole-Building Design applications in any one calendar year; each incentive is calculated on a case-by-case basis and is based on an analysis of the entire project design. New construction projects, including commercial, industrial, institutional, or governmental buildings, office buildings, and schools are eligible. Electric energy-saving measures that exceed "standard practice" (buildings that conform to New York's standard building-design practice and which generally exceed the New York State Energy Conservation Construction Code) qualify. LIPA may also provide up to $10,000 in technical assistance, including consultants to help you choose and implement energy-efficient measures and equipment. For more-complex projects, LIPA will provide 50 percent of any additional costs, up to $50,000.

Green Building Incentives

LIPA's Commercial Construction Program offers developers and building owners the technical and financial assistance necessary to help meet LEED Green Building goals. Projects seeking LEED certification will be eligible for participation in the Whole-Building Design approach, regardless of size or complexity — this in addition to the incentives available under the comprehensive Whole-Building Design. LIPA will fund 100 percent of the cost of energy modeling, up to $50,000; and up to 100 percent of the cost of fundamental and additional commissioning of energy-related systems, up to $100,000. Projects can qualify for up to $25,000 for achieving LEED points related to the building's energy performances, and the maximum rebate will be increased from $400,000 to $550,000 for LEED Green Buildings. New commercial and major renovation projects that are registered with the United States Green Building Council are eligible, and an application for the Commercial Construction Program must be submitted before construction documents are completed. The developer or building owner and their design team must agree to set an energy-efficiency goal of at least 24 percent or better.

Solar Pioneer Program for Not-For-Profits

Investing in solar electricity to supplement energy needs enables agencies to not only generate clean electricity but also reduce the amount of electricity purchased from LIPA, and potentially sell power back to LIPA through net metering. To determine whether you qualify, visit www.lipower.org/commercial/efficiency/ or contact LIPA's Energy Infoline at 1.800.692.2626 for an audit.

Rebates and Incentives

LIPA is currently offering rebates for the installation of solar-electric, or photovoltaic (PV), systems in its service territory. Rebate availability is based on application preapproval by LIPA. Direct incentives of $3.50 per watt are also available, saving you approximately 50 percent on system costs; in addition, LIPA is offering an extra $1 per watt to schools, government, and not-for-profit customers. To determine your eligibility or for more information, visit www.lipower.org/commercial/efficiency/solar.html.

Investment Tax Credit for Commercial Customers

Commercial customers who invest in or buy qualified solar-energy property can take advantage of a business energy tax credit of up to 30 percent of the investment or purchase and installation amount when income tax forms are filed. To learn more, visit www.lipower.org/efficiency/solar.html.

Federal, State, and County Tax Incentives

Recent federal, state, and county governments have joined together to offer tax incentives in addition to LIPA's own incentives for PV installations to help promote the installation of PV equipment. New York State currently offers a tax credit of up to 25 percent of the net costs for the installation of a PV system, with a current incentive cap of $5,000; and the federal government offers residential customers up to 30 percent in tax credits, with a cap of $2,000, and business customers up to 30 percent in tax credits, with no cap. In addition, a 15-year real property tax exemption is available through New York State's Real Property Tax Law for solar systems installed in the state.

LIPA Light Solutions

LIPA's Light Solutions Program provides two options to help businesses meet their exterior lighting needs: utility-owned solutions and customer-owned solutions. With utility-owned solutions, LIPA owns the equipment and provides installation and maintenance for a low monthly fee. For customer-owned solutions, LIPA has partnered with a network of Light Solutions Providers who can recommend lighting designs, provide cost estimates, and ensure that new outdoor-lighting projects adhere to town and village codes. You can select the LIPA Solutions Provider of your choice from a list of qualified partners. For more information, visit www.lipower.org/commercial/lightsol.

LIPAedge

LIPAedge is an energy-conservation program that offers customers control features while giving LIPA the capability to tap into consumer-based power reserves when needed. By using central air-conditioning less often — only when you need it — you can also lower your summer electric bills.

By taking part in LIPAedge, you agree to have your central air-conditioning system adjusted between the hours of 2 p.m. and 6 p.m. for a maximum of seven days throughout the summer. Using the Internet, you can change the set point of your air-conditioner whenever you want. To sign up for LIPAedge or for more information, visit www.lipower.org/efficiency/lipaedge.html.

New York State Energy Research and Development Authority (NYSERDA)

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation that strives to facilitate change through the widespread development and use of innovative technologies that improve the state's energy, economic, and environmental well-being. The information below was provided to UJA-Federation of New York by NYSERDA. For more or updated information on these programs, visit NYSERDA at www.nyserda.org. In addition to the opportunities below, NYSERDA offers telephone consultations at 1.866.697.3732 to explore opportunities and options that may be appropriate for you and your agency.

To be eligible for NYSERDA's programs, participants must pay into the System Benefits Charge (SBC) as electricity-distribution customers of Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, New York State Electric & Gas Corporation, National Grid (formerly Niagara Mohawk), Orange and Rockland Utilities, or Rochester Gas & Electric Corporation.

New York Energy Audits and Studies

NYSERDA offers energy audits to help organizations make informed decisions about their electrical equipment use and to implement energy-efficient strategies that can result in electric savings.

Businesses With Annual Electric Bills of $75,000 and Less

NYSERDA offers the Energy Audit Program for facilities that pay less than $75,000 in annual electric bills. The cost of the audit depends on the customer's annual electrical bills. Generally, facilities with annual electrical bills of under $25,000 will pay $100 for the audit, and those with annual electrical bills between $25,000 and $75,000 will pay $400. The audit fee may be refundable if an agency implements recommended measures up to the cost of the audit (in other words, an agency that pays $400 for an audit will need to spend at least $400 implementing the resulting recommendations to have the audit fee refunded).

For information on potential savings and to arrange an audit, please visit www.nyserda.org/programs/energyaudit.asp.

Businesses With Annual Electrical Bills Over $75,000

NYSERDA's FlexTech is a cost-shared energy-study program that focuses on helping organizations that pay more than $75,000 in electrical bills identify and implement cost-effective and energy-efficient measures. Costs for most projects are shared 50 percent by NYSERDA, up to $500,000. For Con Edison customers, NYSERDA may share up to $1 million in costs. Participants are responsible for 50 percent of the study cost, and NYSERDA will provide direct payment of the remaining 50 percent to the FlexTech consultant.

FlexTech services may include, but are not limited to:

- Engineering feasibility and technical-assistance studies
- Detailed analyses of specific energy projects
- Coincident peak-load reduction
- Process-improvement studies
- Implementation assistance
- Energy-operations management
- Computer-assisted building modeling
- Sustainable-design and green-building assistance

Agencies can choose from 42 engineering firms under contract with NYSERDA. NYSERDA is available to evaluate potential projects, assist with consultant selection, arrange for site visits, and coordinate project scopes of work.

For additional information, please visit www.nyserda.org/programs/flextech.asp. To register, complete the FlexTech Referral Form at www.nyserda.org/programs/Technical_Assistance/ReferralForm.asp.

Technical Assistance Program

NYSERDA's Technical Assistance Program allows facilities to choose their own engineering firm to develop and deliver customized, cost-effective energy-efficiency measures. Assistance is offered in the areas of energy-efficiency technical assistance, combined heat, power, and renewable-generation technical assistance, and peak-load curtailment technical assistance.

Costs for most projects are shared 50 percent by NYSERDA, up to $500,000. For Con Edison customers, NYSERDA may share up to $1 million in costs. In-kind contributions are not allowed as matching funds. Customers must pay the consultant in full for services rendered. NYSERDA will then reimburse the agreed-on percentage upon approval of the final study report.

For additional information and an application, please visit www.nyserda.org/programs/Technical_Assistance.

Existing Facilities Implementation Incentives

NYSERDA's Existing Facilities Program offers prequalified and performance-based incentives for the implementation of a variety of energy-efficiency measures. Prequalified incentives may be eligible for a rebate of up to $30,000; performance incentive rebates are capped at $2 million or 50 percent of the project cost. For more information about these incentive programs, visit www.nyserda.org/Programs/Existing_Facilities.

New Construction Program

The New Construction Program offers technical support to building-design teams and financial incentives to building owners to effect a permanent transformation in the way buildings are designed and constructed in New York State. Incentives are based on the anticipated building energy-efficiency improvements.

This program also offers services and incentives to building owners and designers to encourage green building practices and LEED Green Building Certification. NYSERDA also offers funding for building commissioning, peak-load reduction, and advanced solar and daylighting systems.

For more information about this program, visit www.nyserda.org/programs/New_Construction.

New York Energy Smart Loan Fund

The New York Energy Smart Loan Fund is offered through NYSERDA to provide an interest-rate reduction off a participating lender's normal loan interest rate for a term up to 10 years for certain energy-efficiency improvements or renewable technologies. The interest-rate reduction for the upstate area is up to 4 percent. Con Edison customers may be eligible to receive an interest-rate reduction of up to 6.5 percent less than a participating lender's or lessor's normal market rate. The maximum loan amount that may be subsidized for commercial properties is $1 million, plus an additional maximum of $500,000 for new construction green building improvements, for a maximum of $1.5 million. The Loan Fund program may be layered with any other NYSERDA program, thus providing additional incentives for energy-efficiency projects.
For more information and application forms, please visit www.nyserda.org/loanfund.

Business Partners Program

NYSERDA's Business Partners Program provides information on market-channel suppliers and providers that deliver energy-efficient products and services to commercial and industrial businesses. Currently, areas include heating, ventilation, and air-conditioning; a small commercial lighting program; and motor systems. For more information, visit www.nyserda.org/Partners.

Educational Training Programs

NYSERDA provides training to help educators raise the environmental consciousness of their students. For more information, contact Terri Tuers at 1.518.862.1090 ext. 3303 or tat@nyserda.org.

LEED Certification

The United States Green Building Council reports that in the United States alone, buildings account for:

- 72 percent of electricity consumption
- 39 percent of energy use
- 38 percent of all carbon dioxide emissions
- 40 percent of raw materials use
- 30 percent of waste output
- 14 percent of potable water consumption

Developed by the United States Green Building Council, the Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a recognized standard to support sustainability and certify successful green building design, construction, and operations. The LEED Green Building Rating System aims to promote design and construction practices that lead to environmental, economic, and health and community benefits. The LEED rating system offers four levels of certification for new construction — certified, silver, gold, and platinum — each level corresponding to the number of credits accrued in five green design categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. LEED standards are used for new commercial construction and existing buildings.

For information on certification and registration processes, visit www.usgbc.org/leed.

LEED Rating Categories

The United States Green Building Council describes four LEED rating systems: LEED for Existing Buildings, LEED for Commercial Interiors, LEED for Core and Shell, and LEED for Healthcare.

LEED for Existing Buildings

The LEED for Existing Buildings rating system helps building owners and operators measure operations, improvements, and maintenance on a consistent scale, with the goal of maximizing operational efficiency while minimizing environmental impacts. This category addresses whole-building cleaning and maintenance issues, including chemical use, recycling programs, exterior maintenance programs, and systems upgrades.

LEED for Commercial Interiors

LEED for Commercial Interiors is the green benchmark for the tenant-improvement market, recognized for certifying high-performance green interiors that are healthy, productive places to work; are less costly to operate and maintain; and have a reduced environmental footprint. The power to make sustainable choices lies with tenants and designers, who do not always have control over whole-building operations.

LEED for Core and Shell

LEED for Core and Shell is a green building rating system for designers, builders, developers, and new building owners who want to address sustainable design for new core and shell construction. Core and shell covers base building elements, such as structure, envelope, and the HVAC system. This category is designed to complement the LEED for Commercial Interiors rating system, since both rating systems establish green building criteria for developers, owners, and tenants.

LEED for Healthcare

The LEED for Healthcare Green Building Rating System was developed to meet the unique needs of the healthcare market, including inpatient care facilities, licensed outpatient care facilities, and licensed long-term-care facilities. LEED for Healthcare may also be used for medical offices, assisted-living facilities, and medical education and research centers. This rating system addresses such issues as increased sensitivity to chemicals and pollutants, traveling distances from parking facilities, and access to natural spaces.

Funding Opportunities and Tax Incentives

Database of State Incentives for Renewables and Efficiency

www.dsireusa.org

The Database of State Incentives for Renewables and Efficiency (DSIRE) is a comprehensive database of funding incentives, rules, regulations, policies, and related initiatives, categorized by state. One such incentive is the Green Building Tax Credit, which can be applied against corporate, personal, insurance corporation, and banking corporation taxes. The incentive applies to owners and tenants of eligible buildings and spaces that meet certain green standards that increase energy efficiency, improve indoor air quality, and reduce environmental impacts of large New York State commercial and residential buildings. For further information about eligibility for the Green Building Tax Credit, visit the SDIRE website and consult a tax professional.

Energy Policy Act Federal Hybrid Incentive Funding

www.edf.org/page.cfm?tagID=1123

The Energy Policy Act of 2005 enables those who purchase hybrid vehicles to receive tax credits based on fuel-economy gains. Tax incentives are available for select hybrid vehicles through December 2009 and vary depending on model.

Energy Star Special Offers and Rebates

www.energystar.gov/index.cfm?fuseaction=rebate.rebate_locator

Energy Star partners sometimes sponsor such special offers as rebates or sales-tax exemptions or credits on qualified Energy Star products. Enter your ZIP code to find special incentives on qualified products in your area.

Environmental Grantmakers Funder Directory

www.ega.org/funders/directory.php

The Environmental Grantmakers Association helps organizations become more effective environmental grantmakers. Search a list of environmental grantmakers with available funding across many fields.

EPA Grants and Funding

www.epa.gov/greenkit/finance.htm

The Environmental Protection Agency offers grant programs and funding sources ranging from education to watershed protection. Its Environmental Education Division supports education projects that help people make informed decisions. Annual funding ranges between $2 to $3 million, with most grants within the $15,000 to $25,000 range.

Grants.gov

www.grants.gov

Grants.gov centralizes information on more than 1,000 government grant programs and provides access to approximately $400 billion in annual awards. Nonprofit organizations are eligible for grants in energy, environmental quality, natural resources, agriculture, and many other fields.

Green Communities and Enterprise Funding

www.greencommunitiesonline.org/tools/funding/

In partnership with Green Communities, Enterprise Community Partners offers an array of funding options for developers. Grants up to $50,000 are allocated for planning and construction projects. A maximum of $5,000 is distributed for planning and implementing green components of affordable housing developments. Loans are available to support the development of affordable rental and homeownership housing that adheres to Green Communities' criteria. In addition, the Low-Income Housing Tax Credit equity may be available to nonprofit and for-profit developers for new construction or the rehabilitation of affordable rental housing that generally adheres to Green Communities' criteria.

Home Depot Foundation Grants

www.homedepotfoundation.org/grants.html

The Home Depot Foundation is a nonprofit organization established to further Home Depot's community-building goals by providing additional resources for nonprofit organizations. Through the Affordable Housing Built Responsibly program, the foundation administers grants to tax-exempt public charities whose missions align with its interests in supporting the production and preservation of affordable, efficient, and healthy housing. The foundation awards most grants by directly soliciting proposals from high-performing nonprofit organizations with demonstrated greening ability. A limited amount of unsolicited funding is set aside for a competitive process.

The Kresge Foundation

www.kresge.org

The Kresge Foundation supports communities by helping nonprofit organizations in six fields: health, environment, arts and culture, education, human services, and community development. It awards planning grants from $50,000 to $100,000 to support integrated design in renovation and historic preservation. It also supports new construction that is LEED certified or meets Cascadia Region Green Building Council's Living Building Challenge criteria. Projects that are net-zero energy efficient — producing as much as energy as they consume — are also eligible.

Government entities, 501(c)(3) organizations not classified as private foundations, and some schools may apply. Ecological-site-planning grants are open to accredited hospitals and religious organizations that also serve secular needs, have space dedicated to their programs, and have financial and governing autonomy from the parent religious organization. Costs covered by grants include pre-design services to facilitate design planning, energy analysis, and modeling; water-use analysis and modeling; and expenses incurred by planning, initial documentation, and LEED registration with the United States Green Building Council.

NYC Economic Development Corporation

www.nycedc.com/FinancingIncentives/Pages/FinancingIncentives.aspx

The New York City Economic Development Corporation is the primary vehicle for promoting economic growth, stimulating investment, and broadening the city's tax and employment base. NYCEDC tries to meet the needs of businesses large and small, with incentive programs that help eligible businesses finance property, new equipment, renovations, and working capital. NYCEDC also provides information on bond programs, tax incentives, and saving energy.

Green Building Rating Systems and Checklists

Green Globes Assessment and Rating System

www.greenglobes.com

Green Globes is a green-building guidance and assessment program that integrates an environmental assessment protocol, software tools, qualified assessors, and a rating and certification system. It is interactive, flexible, and provides market recognition of a building's environmental attributes through third-party verification. Green Globes typically costs between $3,000 and $5,000 to use the online tool and have a building third-party verified.

Leadership in Energy and Environmental Design (LEED)

www.usgbc.org/leed

LEED's Green Building Rating System is a consensus-based national standard for high-performance buildings facilitated by the United States Green Building Council. It offers a remodeling guide and guides for new buildings, commercial interiors, schools, medical facilities, operations, and maintenance. See information on LEED under "Specific Energy and Green Building Resources" in this section.

NAHB's Model Green Home Building Guidelines

www.nahbgreen.org/Guidelines

The National Association of Home Builders' Model Green Home Building Guidelines offer toolkits for individuals and home-building associations looking to launch green building programs.

New York Collaborative for High Performance Schools Guidelines

www.emsc.nysed.gov/facplan/documents/NY-CHPS_Sep2007finalNYSERDA.doc

This September 2007 PDF created by the New York State Education Department and the New York State Energy Research and Development Authority offers guidelines to assist school districts and their design teams in constructing sustainable, easily maintained buildings.

Green Products: Third-Party Certification

Air Quality

The Carpet and Rug Institute

www.carpet-rug.org

The Carpet and Rug Institute (CRI) is a nonprofit trade association that represents the manufacturers of more than 95 percent of all carpets made in the United States, as well as their suppliers and service providers. Through its Green Label and Green Label Plus, CRI identifies carpet, carpet backings, cushions, and adhesives that emit very low volatile organic compounds (VOCs).

Greenguard Environmental Institute

www.greenguard.org

The Greenguard Certification Program is an industry-independent, third-party testing program for low-emitting products and materials.

GreenNonprofits

www.jolera.com/greennonprofits

GreenNonprofits is helping nonprofits and NGOs take proactive steps to protect the environment, offering a customizable, no-cost certification process to help these organizations become greener.

Master Painters Institute

www.specifygreen.com

The Master Painters Institute has developed the Green Performance Standard based on the Environmental Protection Agency's standards for volatile organic compound (VOC) content levels in surface coatings, as well as California's air-quality requirements.

Resilient Floor Covering Institute

www.rfci.com

The Resilient Floor Covering Institute, in conjunction with Scientific Certification Systems, developed FloorScore to test and certify flooring for compliance with California's indoor air-quality requirements.

Scientific Certification Systems

www.scscertified.com/sustainablechoice

Scientific Certification Systems created the SCS Sustainable Choice Brand Certification to identify carpets and furniture that have significantly reduced or showed minimal impacts for their product categories.

Building Services

American Institute of Architects

www.aia.org

Since 1857, the American Institute of Architects has been a leading membership association for licensed architects. AIA offers a resource center of green architectural information toward its commitment to reach at least a 60 percent carbon emission reduction by 2010 and carbon-neutral buildings by 2030.

Sustainable Building Industry Council

www.sbicouncil.org

The Sustainable Building Industry Council is an independent, nonprofit association of architects, engineers, product manufacturers, and building associations promoting sustainable design.

Energy Efficiency

American Wind Energy Association

www.awea.org

American Wind Energy Association is a national trade association involving wind power developers, suppliers, services providers, parts manufacturers, utilities, researchers, advocates, and others, representing one of the world's fastest-growing energy industries. AWEA offers up-to-date information on operating projects, new projects, companies in the field, and technology and policy developments.

Cool Roof Rating Council

www.coolroofs.org

The Cool Roof Rating Council, an independent organization, establishes ratings for accurate radiative property data on the outermost layer of roofs.

Energy Information Administration

www.eia.doe.gov

Created in 1977, the Energy Information Administration is a statistical agency of the United States Department of Energy that offers policy-neutral data, forecasts, and analyses to promote sound policy making, efficient markets, and public understanding regarding energy and its interaction with the economy and the environment.

Energy Star

www.energystar.gov

A joint program of the United States Environmental Protection Agency and the United States Department of Energy, Energy Star strives to save consumers money and protect the environment through energy-efficient products and practices.

Green-e

www.green-e.org

Green-e is an independent certification and verification program for renewable energy and greenhouse gas reductions.

National Fenestration Rating Council

www.nfrc.org

The nonprofit National Fenestration Rating Council administers the only uniform, independent rating and labeling system for the energy performance of windows, doors, skylights, and attachments.

Forestry and Timber Products

Forest Stewardship Council

www.fscus.org

An independent, non-governmental, nonprofit organization, the Forest Stewardship Council promotes responsible management of the world's forests, setting standards and providing trademark assurance and accreditation services. FSC certifies material through its Chain of Custody (CoC) certification — from forest to consumer, including all successive stages of processing, transformation, manufacturing, and distribution.

Rainforest Alliance's SmartWood Program

www.rainforest-alliance.org

Working to conserve biodiversity and ensure sustainable business, the Rainforest Alliance audits environmentally and socially responsible forestry through its SmartWood certification program and other verification services.

Sustainable Forestry Initiative

www.sfiprogram.org

The Sustainable Forestry Initiative offers a certification search tool that allows customers and stakeholders to learn more about SFI forests and to identify suppliers who offer quality-certified forest products.

Multiple-Attribute Certification

Business and Institutional Furniture Manufacturers Association

www.bifma.com

BIFMA develops voluntary product and industry standards that support safe, healthy, and sustainable environments, including a multi-attribute sustainability standard for furniture.

EcoLogo

www.ecologo.org

EcoLogo, also known as Environmental Choice, is a multi-attribute third-party certification and labeling program established by the Canadian government.

Environmental Defense Fund

www.edf.org

The Environmental Defense Fund strives to find practical environmental solutions for businesses and government, and offers information on carbon-offset credits, including a list of places through which to buy them.

Green Seal

www.greenseal.org

Green Seal, an independent nonprofit, has been certifying products since 1992. Green Seal now provides third-party certification for a range of products, including paints, adhesives, lamps, chillers, windows, cleaners, and occupancy sensors.

MBDC's Cradle to Cradle Certification

www.c2ccertified.com

Cradle to Cradle, run by the process and design firm MBDC, is a multi-attribute certification program that uses five categories to evaluate products based on the "cradle to cradle" manufacturing philosophy, whereby a product is designed so all its materials can be reused.

Scientific Certification Systems

www.scscertified.com

An independent certification organization, Scientific Certification Systems certifies manufacturers' claims of building-product attributes, such as recycled and recovered content and the absence of added formaldehyde.

Water Efficiency

WaterSense

www.epa.gov/WaterSense

WaterSense, run by the Environmental Protection Agency, labels water-efficient faucets, toilets, and weather- and sensor-based irrigation systems.

Organizations and Agencies

Air Quality

American Lung Association Health House

www.healthhouse.org

Health House's mission is to raise the standard for indoor environments, offering tips for reducing such indoor pollutants as mold, radon, and dust.

United States Department of Housing and Urban Development

www.hud.gov

This government entity offers information for both home and business owners, including air-quality and environmental guidelines.

Energy Efficiency

Alive Structures

www.alivestructures.com/

Alive Structures aims to convert as much concrete into vegetation as possible, promoting the installation of green roofs, green walls, and gardens.

DOE Consumer's Guide to Energy Efficiency and Renewable Energy

www.eere.energy.gov/consumer/

Created by the United States Department of Energy, this consumer's guide offers options for saving energy and using renewable energy at home, at work, in the community, and while driving.

EcoDriving USA

www.ecodrivingusa.com

EcoDriving USA's simple solutions can increase a car's gas mileage and reduce its carbon footprint.

Energy Cooperative of New York

www.ecny.org

The nonprofit Energy Cooperative provides businesses across New York State with renewable energy options.

ENERGYGuide

www.energyguide.com

ENERGYGuide offers an online business-energy analysis and tips for improving your energy use.

Energy Source Guide

http://energy.sourceguides.com/businesses/byGeo/US/byS/NY/NY.shtml

This guide provides a listing of renewable energy businesses in New York.

EPA Emissions Calculator

www.epa.gov/climatechange/emissions/ind_calculator.html

Estimate the carbon footprint of your home or organization with this calculator created by the United States Environmental Protection Agency.

Green Roofs for Healthy Cities

www.greenroofs.org

Green Roofs tries to increase awareness of the economic, social, and environmental benefits of green-roof infrastructure.

International Dark Sky Association

www.darksky.org

This organization strives to preserve and protect the nighttime environment through a Fixture Seal of Approval, a program that provides objective, third-party certification for lights that minimize glare and reduce light pollution.

PlaNYC

www.nyc.gov/planyc

Announced Earth Day 2007, PlaNYC is a comprehensive sustainability plan for New York City that includes a strategy to reduce the city's carbon emissions by 30 percent below 2005 levels.

Ride the City

www.ridethecity.com

Through its website, Ride the City identifies the safest bike route between any two points in New York City.

United States Department of Energy

www.eere.energy.gov/

The United States Department of Energy website offers many resources to help increase energy security and reduce emissions and energy use. Visit the site to learn more about the Clean Cities program, which strives to advance economic, environmental, and energy security by supporting local decisions to adopt practices reducing petroleum consumption, and other energy-saving tools.

United States Department of Energy Home Energy Saver

http://hes.lbl.gov/

The Department of Energy's Home Energy Saver is a tool for calculating energy use in residences, helping consumers identify the best ways to save energy and find the resources to make the savings happen.

United States Department of Fuel Economy

www.fueleconomy.gov

This site lists greenhouse gas emissions, air pollution ratings, and safety information for new and used cars and trucks.

Hotels

Green Hotels Association

www.greenhotels.com

Green Hotels is an industry group that encourages environmentally friendly hotel measures and also offers a list of member hotels to the public.

Sustainable Purchasing and Recycling

Build It Green! NYC

www.bignyc.org

Build It Green is New York City's only nonprofit retail outlet for salvaged and surplus building materials.

Earth 911

www.earth911.com

Earth 911's searchable site allows you to find local recycling haulers using your location or specific materials to be recycled.

Ecology Center Healthy Toys

www.healthytoys.org

Created by the Ecology Center, Healthy Toys is a searchable database of more than 1,500 toys and children's products, providing safety ratings for toxic chemicals.

Forests and European Union Resource Network

www.fern.org

FERN, the Forests and European Union Resource Network, reports on forestry-certification programs to effect climate change, biodiversity, and forest peoples' rights.

Inform, Inc.

www.informinc.org

Inform, Inc., identifies innovative technologies, practices, and products that provide practical solutions to environmental and health-related problems

Skin Deep Cosmetics Safety Database

www.cosmeticsdatabase.org

Skin Deep is a safety guide to cosmetics and personal-care products.

Waste Stream

Catalog Choice

www.catalogchoice.org

Catalog Choice is a free online registration service enabling you to search for companies and decline their catalogs and other printed materials.

CENYC's Office of Recycling Outreach and Education

www.cenyc.org/recycling

The Council on the Environment of New York City's Office of Recycling Outreach and Education works to increase participation in curbside recycling programs, using a community-by-community strategy. Boroughwide coordinators identify a neighborhood's specific recycling challenges and address them with targeted workshops for tenants and supers, community events, and collection programs for textiles, electronics, and compost.

City Harvest Food Donations

www.cityharvest.org

Serving New York City for more than 25 years, City Harvest is the world's first food-rescue organization, dedicated to feeding the city's hungry.

Collective Good-Cell Phone Recycling

www.collectivegood.com

Collective Good recycles mobile phones, pagers, and PDAs in an environmentally and socially responsible manner.

Council of the Environment for New York City (CENYC)

www.cenyc.org

The Council of the Environment for New York City is a hands-on nonprofit that has been improving the environment for more than 30 years. CENYC staffs green neighborhoods, develops environmental leaders, promotes waste prevention and recycling, and runs the country's largest farmers market program, as well as offers a list of vendors and manufacturers that provide recycling and other waste-prevention services.

Electronics TakeBack Coalition

www.computertakeback.com

Search for manufacturers that accept discarded televisions, computers, and other electronics, reducing toxic electronic waste.

EPA Guide to Understanding Hazardous Waste Rules

www.epa.gov/osw/hazard/

The Environmental Protection Agency has created a guide to regulations that govern hazardous waste — waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges and can include discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes.

MyBoneYard Electronics Recycling

www.myboneyard.com

MyBoneYard partners with industry leaders in the manufacturing, service, and retail sectors to provide more value for used electronic equipment through various national consumer-electronics-recycling programs.

NYCWasteLess

www.nyc.gov/html/nycwasteless

Produced by the New York City Department of Sanitation's Bureau of Waste Prevention, Reuse, and Recycling, NYCWasteLess is the city's one-stop resource for waste prevention and recycling information.

Shelter Alliance

www.shelteralliance.net

Shelter Alliance offers socially responsible cell phone recycling opportunities, with leading programs that feature free shipping and zero landfill recycling.

WasteMatch Materials Exchange

www.wastematch.org

New York's WasteMatch is a materials exchange and solid-waste reduction program that provides reuse, recycling, and other innovative waste solutions to help clients reduce disposal costs, generate revenue, and obtain raw materials for free.

Water Efficiency

EPA WaterSense

www.epa.gov

Since 1970, the Environmental Protection Agency has been working for a cleaner, healthier environment for the American people. The EPA's WaterSense partnership program makes it easy for Americans to save water and protect the environment with quality, water-efficient products.

Regulations and Compliance

EPA Compliance Assistance Centers

www.epa.gov/Compliance/assistance

The Environmental Protection Agency sponsors Compliance Assistance Centers to help businesses, local governments, and federal facilities comply with federal environmental requirements and save money through pollution-prevention techniques. The centers offer easy access to plain-language materials through websites, virtual plant tours, telephone assistance, expert information, e-mail discussion groups, and state resource locators.

NYS DEC Regulations and Enforcement

www.dec.ny.gov/65.html

The New York State Department of Environmental Conservation offers regulation help through official policy and guidance documents, as well as publications and training sessions.

OSHA Consultation Service

www.labor.state.ny.us

The New York State Department of Labor Division of Safety and Health offers a free business resource, the On-Site Consultation Program, to help employers provide a safe and healthy workplace.

Small Business Environmental Assistance Program

www.smallbiz-enviroweb.org/

This resource helps small businesses access environmental-compliance and pollution-prevention information.

Green Websites and Publications

Carbonrally

www.carbonrally.com

Carbonrally is an online activism site for those wishing to have a fun, simple, and social way to have an impact on energy consumption and climate change.

Center for the Built Environment

www.cbe.berkeley.edu

CBE is a place for builders and researchers to discuss improving the design and operation of buildings using building technologies and design techniques.

Co-Op America

www.coopamerica.org

This nonprofit's mission is to harness economic power to create a socially just and environmentally sustainable society.

The Daily Green

www.thedailygreen.com

An e-magazine that reports on environmental issues and global warming news, *The Daily Green* offers information on greening your home, eating green, and living a greener lifestyle.

Eartheasy

www.eartheasy.com

Eartheasy is both a resource center and shop for environmental and sustainable living.

EarthShare

www.earthshare.org

EarthShare represents environmental and conservation groups in managing workplace-giving campaigns and payroll-contribution drives for environmental causes.

Emagazine.com

www.emagazine.com

The online home of the bimonthly *E/The Environmental Magazine*, you'll find a wealth of everything environmental.

FacilitiesNet Webcasts

www.facilitiesnet.com/webcasts

FacilitiesNet provides online seminars on such topics as energy-efficient lighting technologies, increasing overall energy efficiency, cool roofs, and the environmental benefits of green cleaning, most of which are free.

GlobalGiving

www.globalgiving.com/green

GlobalGiving connects people with community-based projects that need support, including green initiatives.

GreenNonProfits

www.jolera.com/greennonprofits

GreenNonprofits strives to create and support the global movement that educates, assists, and certifies nonprofits and NGOs in becoming environmentally friendly.

National Geographic Green Guide

www.thegreenguide.com

National Geographic has created the online Green Guide to help people shop for, save, and conserve the environment in a personal, practical, and positive way.

Plenty Magazine

www.plentymag.com

The digital home of *Plenty* magazine is full of resources on green living.

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