

Introduction environmental sustainability: BEYOND RECYCLING

While our traditional approach to the use of resources has provided us with unprecedented levels of material goods, it is destroying the world's environmental and social support systems. The non-sustainability of the way we live and work is increasingly apparent. Our generation has been challenged to "Think Globally—Act Locally." We invite you, as a responsible member of the University Housing community, to join in efforts to eliminate environmental impacts.

University Housing produced the "Green Guide" to help staff meet this responsibility. This guide provides facts about global and campus environmental issues as well as tips for reducing personal environmental impacts. We hope that you use this guide to make your impact on the environment as small as possible.

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever does." —Margaret Mead

University Housing, the campus community, and residents and staff have taken the first step toward environmental responsibility: recycling. Recycling is extremely important as a way to reduce waste and reuse materials, but is only part of the broader picture. This broader picture is represented by the concept of "sustainability," which has many definitions, but basically means preserving resources for future generations. In other words, persons, organizations or communities supporting environmental sustainability make decisions with the health of the planet in mind.

University Housing has been working to move toward sustainability. Housing's sustainability efforts are guided by the following Mission Statement:

We, members of the Housing community at the University of Michigan, recognize that we can affect environmental degradation and/or restoration. We recognize that future generations have a right to at least the same advantages enjoyed by current generations. As stewards of the Earth, we believe we have the responsibility to move toward a sustainable society. By sustainability we mean living, working, and behaving in ways that restore the integrity and biodiversity of the local, regional, and planetary ecosystems and social systems upon which life depends. We therefore strive to:

- * Encourage sustainable and restorative practices through education and engagement with our stakeholders, including staff, residents, suppliers, contractors, and the University community.
- * Assess and reduce the long-term environmental impacts of our decisions.
- * Reduce our use of water, energy, and materials by incorporation of technologies and practices consistent with a sustainable and restorative organization.
- * Reduce pollution and use of toxins with the long-term goal of zero discharge and use.
- * Openly communicate and monitor our progress toward sustainability.
- * Provide staff with the necessary training and resources to meet these sustainability goals.

If you would like to volunteer or share suggestions with University Housing's Sustainability Oversight Committee, please visit:
www.housing.umich.edu/sustainability.

"The world we have created today...has problems which cannot be solved by thinking the way we thought when we created them." —Albert Einstein

Overconsumption and Waste: Throwing It All Away

Residents and staff of University Housing generate incredible amounts of waste—so does the rest of the University. Waste often comes from unnecessary purchases and the excessive use of packaging and disposable products. Unfortunately, our landfills are rapidly filling up and we are degrading resources to produce products that we do not really want or need. Therefore, we encourage you to do your part by reducing the amount of waste you generate.

- * Americans represent 5% of the world's population, yet we consume 30% of the world's resources.
- * The average American will throw away 90,000 pounds of trash in a lifetime.
- * University Housing consumes over 11.5 million feet of toilet paper per year.
- * University Housing uses approximately 6,000 gallons of paint per year.
- * University Housing produces over 43,000 compacted cubic yards of waste per year (4.5 cubic yards/person).

Waste Reduction Tips

- * Buy Less Stuff! Consider whether you really need something before you buy it. This will save you money and benefit the environment.
- * Choose reuseables over disposables!
- * Coffee mugs instead of paper or plastic cups.
- * Washable plates, cups, and silverware instead of disposables.
- * Use cloth towels and sponges instead of paper towels.
- * Use a water filter and reusable bottles instead of buying bottled water.
- * Don't use polystyrene foam; it never decomposes.
- * Reuse bags (preferably cloth ones) when you shop.
- * Buy concentrated juices, laundry detergents, and household cleaners. They save you money and create less packaging waste.
- * Give old clothes and household objects to charities; don't throw them away. Many places in and near Ann Arbor will accept donations. Try the Reuse Center (2420 S. Industrial Highway, 734-663-6288); Saint Vincent de Paul Thrift (1001 Broadway, 734-761-1400); and the Salvation Army (5931 Middlebelt, Romulus, 734-729-3939).
- * Use rechargeable batteries, and dispose of all batteries—which are considered hazardous waste—in the proper manner. Collection bins for used batteries are located around campus, including at most residence hall front desks. Call UM's Department of Occupational Safety & Environmental Health (734-763-4568) for the location of the nearest bin, or for more information.
- * Give "eco-gifts" which don't involve consuming anything. For example, purchase tickets to an event, donate money (to an environmental cause), give a backrub or other favor, or buy from eco-friendly companies. (Try www.ecomall.com or www.naturenode.com/shopping.html to locate these companies.)

"Materialism simply cannot survive the transition to a sustainable world." —Lester Brown

Recycling: A New Life for Old Stuff

We all know about the benefits of recycling. Why throw something away when it can be made into something useful again? Recycle your paper and containers, such as cans or bottles, in the conveniently located bins. See this Web site for more information on recycling and recyclable materials: www.recycle.umich.edu.



- * Recycling one ton of paper
 - ✓ saves 17 trees;
 - ✓ saves 4 barrels of oil;
 - ✓ saves 4,300 kilowatts of energy;
 - ✓ saves 3 cubic yards of landfill space;
 - ✓ keeps 7,000 gallons of water from being treated with chemicals;
 - ✓ prevents 60 pounds of air pollution.
- * You can make 20 cans out of recycled material with the same amount of energy it takes to make one new one.
- * Incinerating 10,000 tons of waste creates one job; landfilling the same amount creates 6 jobs; recycling the same amount creates 36 jobs.
- * In 2000, U of M recycled 3,600 tons of material, or 30% of our waste.
- * During 2000-2001, University Housing recycled nearly 23% of our waste, saving more than \$90,000.

Recycling Tips

- * Recycle paper and containers, as well as other materials. See www.recycle.umich.edu for details about what is collected.
- * Bag your polystyrene foam peanuts and take them to the Ann Arbor Material Recycling Facility. Or, the Mailboxes, Etc. store in the basement of the Michigan Union will gladly accept all foam peanuts.
- * Buy recycled items whenever possible, including 100% post-consumer recycled content and non-chlorine bleached paper, available at most bookstores and office supply stores.
- * Shop at stores featuring recycled products, like
 - Recycle Ann Arbor Reuse Center, 2420 South Industrial Highway, 734-662-6288;
 - U of M Property Disposition; 3241 Baxter Rd., North Campus, 734-764-6251, <http://www.umich.edu/~ofa/PropDisp>.

"The aim should be to obtain the maximum of well-being with the minimum of consumption. The cultivation and expansion of needs is the antithesis of wisdom. It is also the antithesis of freedom and peace." —E.F. Schumaker, "Small Is Beautiful"

Food: A Sustainable Diet

Sustainability is a way of life and how you eat is a big part of sustaining yourself. Your choice in foods has a major impact on the environment. For example, eating lower on the food chain (i.e., more vegetarian and vegan items) saves enormous amounts of land, water and other resources. Organic locally grown foods require no harmful pesticides and require less energy to transport than conventional foods. Foods with fewer preservatives often have higher nutritional content. So, next time you have a meal, think about sustaining yourself and the planet!



About dietary choices

- * In a lifetime, the average meat-eating American will consume one calf, 3 lambs, 11 cattle, 23 hogs, 45 turkeys, 1,097 chickens and 15,865 chicken eggs.
- * Sixty-four percent of America's agricultural land is used for livestock feed; 80% of all corn grown in the U.S. is fed to livestock.
- * One hundred pounds of vegetables fed to a cow produces 6 pounds of edible meat.
- * Fifty percent of U.S. water is used for livestock production. It takes 2,500 gallons of water to produce one pound of meat. It takes 25 gallons of water to produce one pound of wheat.



- * Forty-five thousand square feet of land is required to feed a person on a high meat diet versus only 10,000 square feet of land for a vegetarian.
- * If Americans reduced their meat intake by 10%, 100 million more people could be fed worldwide. (Twenty million people per year die of malnutrition.)
- * There are 12.4 million self-reported vegetarians in the United States.
- * It is a myth that vegetarians do not get enough protein or calcium.
- * In general, vegetarians are much less prone to heart attacks, breast cancer and osteoporosis.

About organic food

- * Organic foods are grown without the use of chemical fertilizers, pesticides, herbicides and fumigants. They avoid the use of genetically modified or chemically treated seeds, use non-chemical farming methods to sustain soil quality and avoid chemical additives during processing.
- * Organic farming uses 50% less energy than convention methods.
- * Only .1% of pesticides used in conventional farms reach their target pest.

About Genetically Modified Organisms (GMOs)

- * A GMO is an organism that has been modified by the insertion of DNA by human intention. It is usually DNA that has been modified or "engineered" to suit a particular purpose. It can be DNA from the same organism or a foreign organism, or it may be a sequence synthesized in a laboratory.
- * More than 60% of all non-organic processed foods sold in US supermarkets contain GMOs.



About Food Waste

- * The average American wastes a half-pound of food per day.
- * Food and paper waste from residence hall dining halls totals approximately five million pounds per year.
- * U of M composts 3.5 tons of food waste each month.

Eco-Food Tips

- * Eat lower on the food chain (i.e., less meat, poultry and fish, and more vegetables).
- * Buy local, organic, non-genetically-modified foods. For example, organic coffee and/or Fair Trade coffee is now available at many Ann Arbor locations. The production of this coffee protects local economies, the environment and songbirds in particular. (Bring your own mug.)
- * Support local food co-ops (like the People's Food Coop near Kerrytown) and local farmers (like those at the Kerrytown Farmer's Market).
- * To learn more about environmentally friendly food, contact the Residential Dining Services Nutrition Specialist by e-mail at eatsmart@umich.edu.

"Nothing will benefit human health and increase the chances for survival of life on earth as much as the evolution to a vegetarian diet." —Albert Einstein

Energy: Prevent Global Warming and Save Money

Global warming is one of the most important issues facing the world today. There is widespread potential for catastrophic consequences if fossil fuel usage continues to cause increases in global temperatures. By reducing electricity and energy consumption, we can greatly reduce the global warming caused by our own activities.



- * The 11 warmest years on record have all occurred since 1980.
- * Burning fossil fuels produces greenhouse gases, including carbon dioxide and nitrogen oxides. Greenhouse gases lead to global warming, which in turn leads to rising sea levels and coastal inundations, droughts, heat waves, tropical storms, damaged ecosystems, species extinction and changes in agricultural productivity.
- * Pear-shaped incandescent bulbs are very inefficient. Ninety percent of the energy they use is given off as heat, leaving only 10% for light.
- * University Housing consumes over 18 million kilowatt-hours of energy per year.

Energy Reduction Tips

- * TURN OFF YOUR LIGHTS when they are not needed. Dim lights when you are using your computer. Besides lessening your environmental impact, it's also better for your eyes.
- * Do not use halogen lamps. They are extremely inefficient and can be a fire hazard.
- * TURN OFF YOUR COMPUTER and printer if you won't be using them for 30 minutes or more. Modern computers are not adversely affected by frequent shutdowns, and computer usage is a major (and growing) source of energy consumption.
- * Avoid using screen savers, which waste a lot of energy. Instead, turn off your monitor when you won't be using it for 15 minutes or more, or use the power management options like the "sleep mode" (typically found under "power options" or on your control panel).
- * Keep your curtains and shades open! Sunlight is our most efficient source of energy.
- * Use fluorescent bulbs instead of incandescent bulbs wherever possible. (Fluorescent bulbs contain trace amounts of mercury, so the University recycles them through our hazardous waste group—call 734-763-5641 for more information. Do not dispose of fluorescent bulbs at home without first trying to recycle them through your waste handler.)
- * Purchase Environmental Protection Agency Energy Star rated products when looking to buy new appliances, computers and peripherals.



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—Albert Einstein

Water: Protecting our Waterways

It's hard to imagine that the water that flows from our taps, showers and toilets largely comes from and returns to the Huron River. But, it's true that the river that runs through much of southeast Michigan is our main source for our most vital resource. However, we can reduce our impact on the Huron and other local water bodies.

Water Facts

- * About 99.99% of the earth's water is salty, or is locked up as ice, or is groundwater that is too deep and too expensive for us to extract. This means that only very little of the earth's total volume of water is available to us for consumption.
- * Global water consumption rose sixfold between 1900 and 1995.
- * We live surrounded by the Great Lakes, but one-third of the world's population lives in countries experiencing moderate to high water stress.

- * Thirty-four percent of fish species are threatened with extinction.
- * In the first three months of 2001, University Housing used nearly 47 million gallons of water.



Water Usage Reduction Tips

- * Turn off the water while you are brushing your teeth and shaving!
- * Use hot water sparingly.
- * Only wash full loads of laundry. Select the cold water setting for your washer when washing darks or colors. It saves energy and is better for your clothes!
- * Do not dump anything toxic (or suspicious) down drains, sinks, toilets or sewers. Instead, contact Occupation Safety and Environmental Health's Hazard Materials Management Program at 734-763-4568. They can advise you about proper disposal.

"Water is the most precious, limited natural resource we have in this country....But because water belongs to no one—except the people—special interests, including government polluters, use it as their private sewers." —Ralph Nader

Transportation: Get Out of Your Car!

- One of the most important ways you affect your environment is by the transportation you choose to use. Riding in a car—especially by yourself—puts large amounts of gases into the atmosphere. These gases are responsible for smog, global warming and other kinds of pollution. Automobiles are also in large part responsible for urban sprawl, loss of communities and other detrimental land-use patterns. Ann Arbor is well equipped for non-automobile transportation, which is especially fortunate since parking and driving are not easy here!
- * The global auto fleet is now 600 million, up from 50 million in 1950.
 - * Cars are responsible for about a quarter of the greenhouse gases produced in this country, with the United States accounting for more than 20% of these gases globally.
 - * Motor vehicles contribute nearly half of all pollutants that cause ground-level ozone (a toxic gas, unnatural at ground level), which can cause or exacerbate asthma, chronic bronchitis, emphysema, and other pulmonary and cardiovascular ailments.
 - * Today's autos use less than 33% of the energy contained in each gallon of gas, wasting the rest.
 - * Sport utility vehicles are the least efficient personal automobiles, and cost the most to operate.

Sustainable Transportation Tips

- * Walk, bike or rollerblade! These ways of getting around are healthy, good for the environment and easy for campus life!
- * DRIVE LESS! (Bus or carpool.) Most places in Ann Arbor are either a walk or a bus ride away. For longer distances (such as to the airport), you can always find a ride or take a cab. If buying a car, look for a very fuel-efficient model (i.e., one that gets at least 35-40 miles per gallon), like the hybrid Toyota Prius or the Honda Civic. Electric vehicles are now available in Ann Arbor from Green Light Transport (403 Miller Avenue, 734-668-1644, sales@greenlighttransport.com).

"The automobile and the American public are locked in a life and death struggle. The car is robbing the American people of their land, air, minds and their very lives." —Kenneth P. Cantor, "The Environmental Handbook"

Paper: Protecting Forests

As members of a college community, we consume enormous amounts of paper. It is easy to forget that paper comes from trees, and that forests are important to maintaining ecosystems, protecting biodiversity, providing recreation, and maintaining ecological services on which we all depend. Reducing paper usage is easy.



- * Over 40% of all tropical rainforests have been destroyed.
- * At present rates of extinction, 20% of the world's species could be gone in the next 30 years.
- * Forests are home to over half of the world's terrestrial species, yet over-exploitation of forests has wiped out more than half of the world's original forest cover.
- * One tree can filter up to 60 pounds of pollutants from the air in its lifetime.
- * Americans throw away enough writing and office paper annually to build a wall 12 feet high stretching from New York City to Los Angeles.
- * In 2000-2001, University Housing recycled 12,110 cubic yards of paper.

Paper Reduction Tips

- * Use both sides of the paper when writing.
- * Use scrap paper to print, whenever possible.
- * Cancel junk mail. (Go to www.newdream.org/junkmail to reduce your junk mail by 90%!)
- * Use email to minimize paper use.
- * Edit papers on-screen, not on paper.
- * Use smaller fonts and decrease line spacing when possible to reduce the number of pages you print.
- * Buy 100% post-consumer content non-chlorine-bleached recycled paper.
- * Read newspapers online instead of buying them. It's free and easy!

"We need wilderness whether or not we ever set foot in it. We need a refuge even though we may never go there. We need the possibility of escape as surely as we need hope."

—Edward Abbey, "Desert Solitaire"



Enjoy Nature!

- Much of this guide has provided facts and tips that can be depressing (i.e., the planet is in big trouble) and even sound somewhat harsh (i.e., don't do this or that). While these tips and facts are important, it is also important to get outside and enjoy nature, so that you can experience all the beautiful habitats and species that we need to protect. Ann Arbor is blessed with an amazing system of parks and natural areas on campus, in town and in the surrounding areas. Here are some places to get you started on your nature journey:
- * **Nichols Arboretum.** The University owns a small, beautiful arboretum with open fields, forests, a prairie and the Huron River. This is a great place for walking, jogging, playing sports or just hanging out on a sunny day. The "Arb" has entrances just east of the University Hospital and Markley Hall, and off Geddes Avenue.
 - * **Gallup Park.** Many consider Gallup Park to be the crown jewel of Ann Arbor's renowned park system. Gallup features a long, looping bike/foot path on both sides of the Huron River, as well as picnic areas, a canoe livery, and many other recreational options. You can enter Gallup Park at the north end of the Arb or via Huron River Drive.
 - * **Bird Hills/Barton Park.** Bird Hills and Barton Park are smaller, less well-known natural areas which are connected to each other. They both offer hiking. The entrances are off Huron River Drive, just west of the intersection with Main Street (at the farthest north part of Main Street).
 - * **County Farm Park.** This park is an outstanding natural area, featuring miles of unpaved trails. This parcel was formerly a farm but is now overgrown and is a true "urban oasis" featuring much wildlife. The park is located on Platt Road, off Washtenaw Avenue.

- * **Metroparks:** Extending along the Huron River in all directions from Ann Arbor is a series of Metroparks, with picnicking, hiking, canoeing, etc. The easiest way to reach the Metroparks is to head northwest on Huron River Drive (beginning at Main Street). Soon you will see Delhi, Dexter-Huron, and Hudson Mills Parks, each with its own attractions.

- * **Pinckney State Recreation Area:** Widely regarded as the best natural area in southeast Michigan, Pinckney State Recreation Area has everything you would want in a park: hiking trails, lakes to swim in, canoeing, etc. It is located approximately 20 minutes northwest of Ann Arbor. It can be entered from N. Territorial Road, approximately 10 miles west of the intersection with US-23 (North). To locate these and even more natural areas in and around Ann Arbor, you may want to use the Washtenaw County and Ann Arbor green map. It's available at www.co.washtenaw.mi.us/depts/EIS/greenmap/index.HTML. You may also wish to visit the Ann Arbor Parks Web page at www.ci.ann-arbor.mi.us/framed/parks/index.html.

"It is fortunate, perhaps, that no matter how intently one studies the hundred little dramas of the woods and meadows, one can never learn all of the salient facts about any one of them." —Aldo Leopold, "The Sand County Almanac"

Closing Comments & Acknowledgements

We hope that this Green Guide leads you toward making your own future and the future of the planet more sustainable. Please join us in our sustainability efforts.

We want to acknowledge some of the many sources that we have used to compile the information for this guide. The idea for our green guide and some of the information in it came from the State University of New York at Buffalo's "Little Green Guide", which was graciously shared by Walter Simpson. Moreover, Michigan's Recycling Office and Energy Management Office have produced excellent environmental guides in the past, and we based much of our information on these resources. We also used many national Web sites, such as the World Resources Institute (www.wri.org) and Greenpeace (www.greenpeace.org), particularly to gather the ecological facts. This booklet involved the work of many people and organizations.

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Visit our Web site at

www.housing.umich.edu/sustainability

"The supreme reality of our time is...the vulnerability of the planet." —John F. Kennedy



Green Guide for University of Michigan Housing Staff



A Handbook on Working and Living in an Environmentally Friendly Way