



Sustainable Transportation Initiatives: Bikes, Buses, Biodiesel—and a Zipcar or Two

By Justin York

Comprehensive sustainable transportation systems are fast becoming the hallmark of major universities around the country.

Flip through the pages of the recent *AASHE Digest 2007* summarizing campus sustainability news and one will find countless stories of how colleges and universities are incorporating sustainability into their transportation initiatives. Some institutions are taking simple steps, such as purchasing an electric hybrid car to replace one of their fleet vehicles. Others work with local public transit systems to offer students and staff free or discounted rides on city buses. Practically everyone provides some sort of program for those who embrace the biking lifestyle. Larger universities are employing a top-down approach by rolling out comprehensive transportation master plans covering every conceivable aspect of getting to and from campus.

One thing is certain: Campus sustainability officers are eager to share their projects and results with others. A recent request for this publication's readers to help with information for this article resulted in a flood of postings from large university systems, commuter campuses, and small liberal arts colleges in the U.S. and Canada. All are demonstrating great passion for making transportation easier, cleaner, and healthier for their students, staff, and faculty. While common project themes emerged, there are different takes on how they are interpreted and implemented.

Highlighted here are just some examples of how higher education is driving the way we look at sustainable transit activities.

Car Counterculture in Los Angeles

Comprehensive sustainable transportation systems are fast becoming the hallmark of major universities around the country. Traffic congestion and emissions reduction requirements have been pushing

the University of California, Los Angeles (UCLA) to invest in alternative transportation strategies since 1984. The result is a well-developed program that includes vanpools, carpools, and a campus shuttle. In conjunction with the city of Los Angeles, UCLA agreed to a cap that limits the number of trips a vehicle can make to and from campus, with both daily and AM and PM peak-period limits. There were also caps placed on the number of parking spaces constructed.

On the mass transit front, students and employees receive a 50 percent subsidy on transit passes. All campus shuttles run on compressed natural gas instead of diesel. When not driving or taking the bus, the UCLA community can take advantage of an emergency ride home program, as well as discounted memberships and hourly rentals for an on-campus car-sharing program. Those who prefer to bike or walk have not been left out, either. Thanks to a bicycle master plan, a growing bicycle program includes extensive bike paths on campus and a loaner program that distributes bikes for students and employees to use whenever they wish. An iWalk campaign promotes the health benefits of walking around campus. Finally, UCLA is greening its fleet by eliminating vehicles not fully utilized and purchasing alternative-fueled vehicles as replacements.

These and other efforts are paying off. "UCLA bucks the infamous car culture of LA," says David J. Karwaski, planning and policy manager for transportation. "LA County 'drive alone' rates are 75 percent, while our employees come in a full 20 percent lower, at 55 percent." Rates are even lower for students, who are heavy users of the half-price transit passes.

Influencing Vehicle Purchasing

Down in the Sunshine State, the University of Florida (UF) in Gainesville likes to boast about the U.S. Environmental Protection Agency (EPA) naming the campus one of the best workplaces for commuters among colleges and universities. Criteria for the designation include being committed to improving air quality, saving energy, reducing traffic congestion, and improving employee quality of life.



One of the many shuttle buses on the UCLA campus



Contributing to this outstanding commitment to sustainable transportation initiatives is UF's vehicle purchasing strategy. "Whenever possible, we purchase high fuel efficiency hybrid or alternative fuel vehicles," explains Anna Prizzia, outreach coordinator for the Office of Sustainability. "The purchasing department maintains a listing of available vehicles to assist other departments with choosing a vehicle for purchase." Fleet vehicles on campus are fueled by their own private stash of biodiesel and E85 ethanol.

This fall, the "Gator Nation" will kick off its "One Less Car" campaign. The new initiative will encourage students and employees to commit to an alternative form of transportation each month. These include an online rideshare-matching service, a Zipcar (www.zipcar.com) shared vehicle fleet (where cars can be rented by the hour and picked up at designated parking spaces around campus), and pre-paid universal regional transit.

Biodiesel Survivalist

Last fall, the University of Central Florida (UCF) in Orlando became the first university in the state to convert one of its fleet vehicles to a plug-in hybrid for all-electric driving. "The 2007 Toyota Prius plug-in teaches our community about energy-saving and transportation," points out Chad Binette, assistant director, news and information. "Plus, it produces about 30 percent less emissions per mile compared to its gas-guzzling counterparts." Other fleet vehicles on campus are being converted from diesel to biodiesel fuel.

In recent years, UCF has seen its fleet of student shuttles grow to 26 vehicles. Currently, the campus is switching out 17 of its diesel shuttles, replacing them with biodiesel ones. When finished, 22 out of the 26 vehicles will run on biodiesel. These new biodiesel shuttles may never see a shortage of fuel. UCF has a biodiesel fuel reactor that converts waste vegetable oil into fuel. "The reactor was built by our mechanical engineering students," Binette explains. "Producing biodiesel fuel for about \$1.30 to \$1.50 a gallon, the reactor saves us thousands of dollars each year."

Ride, Repair, Renew

One would think a real urban university like New York University in the heart of New York City's Greenwich Village wouldn't have to worry too much about sustainable transportation issues. After all, students are able to walk to classes very easily from their dorms. Those who commute to class take one of the city's subway trains or buses. Yet, NYU takes transit seriously, approaching sustainability in a holistic way, according to Jeremy Friedman, project administrator of the school's Sustainability Task Force. "We focus on capacity building rather than trying to impose all

solutions from the top-down," he explains. "The emphasis is on environmental assessment to track and gauge progress toward sustainability goals."

One of NYU's innovations to encourage student biking is a bike repair and recycling initiative. Students go out in the campus's Manhattan neighborhood to tag and then recover damaged and abandoned bikes. Once recovered, the students then work with a local nonprofit to repair the bikes and hold bike repair and safety workshops for incoming freshmen. Any first-year student who completes the seminar receives a free bike, as does the nonprofit group. This year, the campus launched a bike-share pilot program.

According to Friedman, staff travel is an often overlooked component when it comes to the environmental impact of transportation. While 95 percent of NYU students commute without using an auto, a significant number of staff arrives each day by car. "To incentivize and encourage public transit," explains Friedman, "we will be upgrading and improving the Commuter Expense Reimbursement Account (CERA) federal tax benefit program for employees and encouraging carpooling." CERA lets participants set aside pre-tax money from paychecks for parking and commuter expenses.

Mellow Yellow Cruisers

One university where biking is king is the University of Montana in Missoula. Its program has been so successful that other institutions across the nation, including the University of Colorado in Boulder, have copied some of these initiatives. Most notable is the "Cruiser Coop," a free bike check-out program begun in 2000. The main users are international and visiting students and faculty. The bright yellow bikes are seen by Missoula residents all over town, making them an effective outreach tool. "Bikes checked out through this system have saved over 8,700 car trips," says Nancy Wilson, director of Associated Students of the University of Montana (ASUM) in the Office of Transportation. The new budget includes \$15,000 per year for bike parking improvements around campus. "We hope to develop a permanent home for the Cruiser Coop in the next few years by building a central bike hub," she says.

Both the Cruiser Coop and biking in general are promoted by individuals participating in the Bike Ambassador Program. Copied after a successful summer launch in the city of Missoula, UM's bike ambassadors talk to bicyclists, pedestrians, and drivers on campus about safe, respectful interaction among those using all modes of transportation. Current bike parking lots provide free air pumps for tires. Other biking incentives include one-year



The University of Florida uses its gator mascot to promote bike riding around campus.



Mechanical engineering student Jaimeson Jeffery checks out the biodiesel fuel reactor he helped design and build with other students at the University of Central Florida.



Current bike parking lots provide free air pumps for tires. Other biking incentives include one-year no-interest bike loans for registered students and giveaway events offering free helmets, lights, and bells.

no-interest bike loans for registered students and giveaway events offering free helmets, lights, and bells. Even in winter, students take advantage of the program.

Lockers and Showers in Washington

Not to be outdone, colleges and smaller institutions are also embracing sustainable transportation activities. Most are finding it easiest to implement such things as hybrid vehicles in their fleets, bike projects, and Zipcars. Some campuses that rely heavily on commuting students have developed comprehensive initiatives that rival some of their larger counterparts. One of these is Evergreen State College, situated between two inlets six miles northwest of downtown Olympia, WA. “With very little on-campus housing, nearly 1,400 vehicles pull into campus parking lots every day,” says John Pumilio, Evergreen’s director of sustainability. “Eighty percent of our students live off campus and must commute to classes.”

But even this true commuter school is committed to a greener trip for students, faculty, and staff through



its Commute Trip Reduction (CTR) efforts. Signed into law by the Washington state legislature in 1991, it requires large employers in affected counties to implement programs to reduce the number of people who drive alone to work or school. Evergreen’s program provides a variety of benefits to those who use alternative forms of transportation. Today, a quarter of the students have given up their cars: 20 percent take the bus, 3 percent ride a bike and 2 percent walk to campus. The college has also been designated as one of the EPA’s “Best Workplaces for Commuters.”

In 2004, the CTR team obtained grant funding to purchase and install ventilated clothing lockers to

provide a secure place for students, staff, and faculty to dry or store their belongings while on campus. Private showers are also available to people who take alternative transportation to campus at least once per week for the quarter.

A new rideshare board online allows community members to find rides to share with other people. Carpool vehicles are able to use high occupancy vehicle (HOV) lanes heading into campus. Once there, drivers can take advantage of preferential parking spaces reserved exclusively for them.

The college is served by two Intercity Transit bus routes. Taking the bus is free for students and college employees. Bikes also ride free. Students simply show their current student ID card. All Evergreen employees, including part-time and temporary employees, are eligible for the STAR (State Agency Rider) pass. This allows them to ride any bus, including the express service between Tacoma and Olympia, at no charge. The STAR pass can be used on any bus, any time and for any reason, not just going to Evergreen. Bus riders are also now enjoying solar-powered lighting in bus shelters at the major transit plaza.

When talking about sustainable transportation, Pumilio doesn’t like to forget the tractors—two farm vehicles that are used on Evergreen’s organic farm. The biodiesel project converts used vegetable oil from the campus into useable renewable fuel. The project aims to be a model for other schools and state institutions that aspire to produce biodiesel onsite. “Our two tractors currently use about 500 gallons of biodiesel every year,” Pumilio points out. “This displaces 17 percent of our annual petroleum diesel consumption.” The college is also committed to replacing its gasoline-powered fleet with electric vehicles, purchasing five of them recently.

Trail Blazing in Michigan

Most college and university sustainability officers have enough to do worrying about their own transportation projects and expansion. Little thought is given to how one school can connect its transit routes to other institutions nearby. But Linda Petee, sustainability coordinator at Delta College in University Center, MI, is thinking about such connections big time. The college just launched a University Center Trail project that will create a bike trail connecting Delta and Saginaw Valley State University.

The four-mile long, twelve-foot-wide, asphalt trail is expected to be in use by 2010, connecting to existing trails on the two campuses as well as trails in the nearby Kochville shopping district. Beginning at the Delta campus, the trail will run in a stair-step direction where it will eventually hook up with an existing path at the university. The bike trail will not be just for students and bikers. “Residents from Frankenlust



and Kochville townships will be able to use the trail,” says Petee, “for biking, walking, or inline skating.”

This will not be a cheap bike path, either. When completed, the project will cost an estimated \$1.2 million. Funding will come from several grants, indicative of the true community partnership nature of the project. Organizers plan to raise the last 15 percent, or \$180,000, locally, from area foundations, businesses, and individuals. Other money will come from a federal Transportation Enhancement grant and the Michigan Department of Transportation.

Energy Futures

When it comes to sustainable transportation management on campus, Steven Letendre, Ph.D. of Green Mountain College in Poultney, VT, sums it up best. “It’s all part of a larger challenge, one that involves nothing less than a fundamental shift in our

energy economy within the next decade.” He and his students are gathering data on two hybrid cars recently purchased. They plan to study how road conditions, air temperature, and driving distance affect fuel mileage.

Today’s students of higher learning will face this and other transportation problems in the near future. Hence, it is only logical—and critical—that Green Mountain College and all institutions make it as their goal to educate students about the problems and possible solutions. Whether studying hybrid electric-powered vehicles, using a community-shared bicycle, or taking advantage of free public buses, students are active participants in this grand experiment and plan for the future. “We’re just trying to articulate how energy fits into the concept of a liberal arts college,” Letendre says. That’s a mission all institutions can promote as leaders of tomorrow’s sustainable transportation solutions.

Sustainable transportation management on campus is “all part of a larger challenge, one that involves nothing less than a fundamental shift in our energy economy within the next decade.”

Steven Letendre

Other Notable Programs and Initiatives

Augsburg College, Minneapolis, MN

The college and Metro Transit teamed up to provide all commuters with transit pass discounts of 50 percent. Mass transit users have increased three-fold since the program started.

Bates College, Lewiston, ME

With parking limited, no first-year students are allowed parking permits. A bike co-op offers the use of ten community bicycles for a small fee. Two Zipcars, both Toyota Prius hybrids, are housed on campus for student use.

Central College, Pella, IA

The college converted a 1989 Chevrolet S-10 pickup truck into an electric vehicle using components from a kit purchased from Electric Vehicles of America, a leading supplier of electric vehicle parts, technical assistance, and design (www.ev-america.com).

Goucher College, Baltimore, MD

Three students created a Community Bike Program, purchasing ten bicycles and helmets for use on and off campus.

Oregon State University, Corvallis, OR

Several departments have employee bikes purchased from the campus surplus property department. Volunteers in each department maintain the bikes with small amounts of money.

University of Arkansas, Fayetteville, AR

Researchers are studying the costs and benefits of diesel fuel in a fleet of four-wheel-drive utility vehicles used by campus maintenance crews. The focus is on environmental impact of emissions, fuel economy, and engine wear.

Washington University, St. Louis, MO

The university is developing a master plan for bicycle transportation on its main campus and surrounding areas. This plan will work in partnership with a new local bike path network, the 20-mile “Centennial Greenway” project, which will connect hundreds of miles of bike paths in the metro-St. Louis area.