

## VI. TRANSPORTATION

Traditional transportation systems have a major impact on the environment, as well as the community/individual well-being. Automobile and airplane-centered systems such as our own are major contributors to a variety of social ills, from air pollution and the obesity crisis to global climate change. Due to the negative impact of conventional transportation usage on several levels, market, environmental and citizen demands are urging the transportation sector toward healthier and more efficient options.

According to Xavier University's Greenhouse Gas Inventory (GHG) completed in the Spring of 2009, transportation accounts for 31% of our University's collective greenhouse gas emissions. Although second only to energy, in terms of largest output category, transportation remains an afterthought in campus planning across the country. To oppose this trend, the American College and University Presidents' Climate Commitment "encourages use and provision of access to public transportation for all faculty, staff, students and visitors" and the establishment of "a policy of offsetting all greenhouse gas emissions generated by air travel paid for by our institution," among other recommendations, within two years of signing the commitment.

In addition to the telling results of the Greenhouse Gas Inventory, the recent increases in undergraduate and graduate enrollment at Xavier, along with the ongoing campus construction projects, have moved transportation-related issues to the forefront. The ever-expanding network of surface parking lots may temporarily meet campus parking needs, but they contribute directly to Xavier's greenhouse gas output. Parking lots encourage the use of automobiles, create heat islands, direct rainwater to storm sewers thereby reducing water in our local aquifers, and add significant costs to higher education by encouraging students to commute by car. In fact, a University of Wisconsin study found that, for many commuting students, the costs of maintaining and using an automobile for transportation may be the second-highest cost of college attendance after tuition, even equaling the cost of dorm housing. Thus, transportation options may also indirectly affect classroom success, retention and graduation rates. Nearly one-third of Xavier's carbon footprint is attributed to transportation therefore it is imperative that efforts to reduce transportation-related emissions take priority in movement toward our University's climate neutrality efforts.

Xavier has made some steps in recent years toward reducing the emissions from our fleet vehicles and to promote alternative means of traveling to campus. Mail Services purchased an electric vehicle to replace a gasoline-powered delivery van. Physical Plant purchased two electric vehicles with plans to replace the remainder of the gasoline-powered fleet with higher-fuel-standard vehicles as the fleet ages. In 2009, the number of bike racks available around campus more than doubled. Other efforts will be outlined, in more detail, within the section that follows.

**Long-term Vision:** To reduce transportation-related greenhouse gas emissions by 50 % by 2030

### **Daily Commuting:**

With a total student population of 6,700 (3,700 undergraduates and 3,000 graduate students) and a total employee population of 1,277 (full-time and part-time faculty, staff, and administrators), there are thousands of trips, primarily by individual automobile to and from campus each day. In total, 4,761 students and nearly all faculty and staff live off-campus which, according to the GHG inventory, results in nearly 18 million automobile miles per year producing 7.2 million kg/year of CO<sub>2</sub> emissions.



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Transportation decisions are highly decentralized on Xavier's campus. Beyond daily choice in preferred mode of transport by faculty, staff and students, diverse entities including intercollegiate athletics, physical plant, and study abroad programs all make independent transportation choices without centralized recommendations or guidelines. Additionally, campus parking issues fall under the jurisdiction of the Parking Committee which is comprised of faculty, staff and students from across the University. The Parking Committee may make recommendations to the University Provost for parking policy changes. However, at this point in time, there are not incentives in place for the utilization of alternative modes of transportation.

The following are some recent initiatives that have occurred on campus which have the combined potential to reduce commuter-based transportation-related emissions on campus:

- Off-Campus: Shuttle shifted from evening to daytime routes beginning in the Fall of 2009 due to student input.
- Bicycle Racks: Additional on-campus bicycle racks purchased by Student Government Association (SGA) and installed by Physical Plant during the 2008-09 school year.
- Two-wheeled Vehicle Parking and Permitting: Proposal expanding parking and providing permitting for two-wheeled motorized vehicles approved by the University Parking Committee during the Fall of 2009.
- Walking: Pedestrian-friendly campus with vehicle-free malls, broad sidewalks and crosswalks.
- Rideshare Board: Available in the Gallagher Student Center for students to coordinate rides to and from campus for breaks.
- Airport Shuttle: Operated by SAC/SGA during peak departure times for breaks.

**Goal:** To encourage the adoption of, and provide infrastructure for, alternative commuting options in order to reduce commuting CO2 emission to 50% of the total vehicle miles traveled by 2030.

### 1. ACTION PLAN:

#### Short-term Goals (1-2 years)

- *Develop easily-accessible electronic rideshare board inclusive of faculty, staff and students.*
- *Create promotional campaign on ride sharing.*
- *Promote off-campus shuttle stops, routes, and times to increase student usage.*
- *Develop a promotional campaign about Metro bus ridership that includes information on finding your route, bike and bus combo commuting, and the financial and environmental benefits of riding the bus.*
- *Enact a permitting system for two-wheeled motorized vehicles, so that parking is permitted on campus.*



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- *Expand parking for two-wheeled motorized vehicles in additional, strategic locations on campus, thus better utilizing existing space.*
- *Create a Non-Daily Parking pass to incentivize alternative transportation.*
- *Install additional bike racks in more convenient locations to accommodate and encourage increased usage.*
- *Develop bike route maps for commuters from communities within five miles of Xavier.*
- *Create an educational campaigns on the personal health benefits of and safety precautions for using alternative transportation.*
- *Promote understanding of the true costs of automobile ownership.*
- *Implement strategies that allow students to have better access to rental and purchase of new and used bicycles.*

### **Mid-term Goals (3-5 years)**

- *Support rideshare/carpool website.*
- *Create new parking policies that allow for incentives (financial or preferred parking for employees and students who carpool, ride scooters or drive high fuel-efficiency compact cars.*
- *Establish an off-campus shuttle route that includes transportation to and from major Metro bus stops.*
- *Improve lighting and safety of surrounding bus stops.*
- *Support the Southwest Ohio Regional Transit Authority (SORTA) and the Cincinnati community in the improvement of the public transportation system.*
- *Provide electronic GPS tracking system for University shuttle.*
- *Advocate for a light rail system to pass through Xavier's campus existing tracks.*
- *Invite SORTA to partner with the University to promote discounted riding options for individuals interested in exploring public transportation as a viable option.*
- *Create desirable compact/hybrid car/ carpool-designated parking spaces in current and new lots.*
- *Establish a tiered system of permitting to incentive less frequent usage of single-vehicle transport.*
- *Provide central facilities for bikers to change and clean-up.*
- *Implement self-service bike rental stations/Bike Loan Program/Bike Sharing Program.*
- *Increase bike lane construction/implementation in partnership with surrounding cities and neighborhood policy makers.*
- *Partner with local bike shops to support repairs and purchases.*
- *Partner with local retailers to incentivize faculty, staff and students purchasing of scooters or electric bicycles.*



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### Long-term Goals (5-10 years)

- *Provide a Metro Bus Ridership program for students and staff.*
- *Create a mass transportation hub at Xavier Square.*
- *Establish centralized bike parking lots.*
- *Provide support services for bike maintenance and storage.*

### ON-CAMPUS VEHICLE USAGE

On-campus vehicle usage for University operations for campus fleet vehicle operations account is an important part of the transportation section of the Campus Sustainability Plan. Although this category of transportation accounts for only 1% of transportation-related emissions, improvements in vehicle efficiency are an important signal to the broader community of Xavier's commitment to sustainable actions. Recently, the University purchased or leased several small electric vehicles for use by Physical Plant and Mail Services departments for on-campus operations.

**Goal:** To increase efficiency and decrease impact of University-owned, leased and operated vehicles by 50% by 2030.

#### 1. ACTION PLAN:

##### Short-term Goal (1-2 years)

- *Develop a policy that requires leased, rented and University vehicles to be as fuel efficient as possible*

##### Mid-term Goal (3-5 years)

- *Transition, University owned vehicles to a more sustainable fuel sources such as vegetable oil, ethanol, biodiesel, hydrogen, or electric*

### AIR TRAVEL

Air travel, for purposes of intercollegiate competitions, recruitment, professional development and study abroad, accounts for about 5.7 million passenger miles per year at Xavier emitting 4,400 tons of CO<sub>2</sub> per year or 12% of Xavier's greenhouse gas emissions. Although the University contracts with a travel agent to provide travel-related services, decisions regarding air travel are highly decentralized on campus.

**Goal:** To reduce reliance on and impact of air travel for official University business through educational outreach, technological options to reduce travel needs, and offset purchases.



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### 1. ACTION PLAN:

#### Short-term Goal (1-2 years)

- *Provide educational opportunities to inform University departments about the impact of air travel on environment.*
- *Encourage-video and teleconferencing to make travel less frequently necessary.*

#### • Mid-term Goal (3-5 years)

- *Adopt a plan for offsetting University-sponsored air travel, in coordination with the larger plan, to be carbon neutral by 2030.*

## TRANSPORTATION SERVICES

In order to tackle transportation's current 31% contribution to Xavier University's overall carbon output, transportation must be addressed in a strategic and coordinated fashion. At this time, there is no University body that oversees, or takes responsibility for, setting transportation initiatives and policies in a comprehensive manner. The recommendation of this Plan is that a transportation services office, committee, or position be established to coordinate actions and activities in regard to transportation behavior and infrastructure from parking to commuting to air travel.

The University Parking Committee and Campus Police are the only two University bodies that plan and implement policies related to transportation. There is no central entity that coordinates transportation services at this time.

**Goal:** To establish a formal body or office to oversee transportation initiatives and infrastructure.

### 1. ACTION PLAN:

#### Short-term Goal (1-2 years)

- *Work with University administration and the parking committee to develop and to oversee comprehensive planning and implementation of sustainable transportation policies and strategies.*

#### Mid-term Goals (3-5 years)

- *Establish University office of transportation service.*
- *Hire full-time transportation services director.*



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## 2. CHALLENGES AND FUNDING

- Overcoming the aversion to travel by any means other than cars - Trying to get people to change behavior is extremely difficult. Our city has had little in the way of accessible and reliable public transport, and bicycle commuting has not been embraced by this region.
- Given the hilly topography and the weather, a bike-to-campus program may have only limited impact. Those most likely to take advantage of this type of program are those living close to campus (e.g., less than 5 miles), those who are already reasonably fit, and those who own adequate bike transportation.
- Bike safety is an important issue. Many of the feeder roads coming into campus are dangerous for cyclists during peak travel times. Further improvements in the city to support bicycle commuting will go a long way toward making cycling to campus a safer and more impactful transportation option.
- A significant investment in human resources is required to initiate and sustain the programs designed to achieve the goals mentioned above. Educational efforts and promotional campaigns will require a sustained and coordinated effort as opposed to ad-hoc approaches that have been used in the past. Some of the important mid-term initiatives will require dedicated human resources.
- Administrative actions are needed - The Parking Committee is the sole means of enacting transportation policy on campus. While parking related issues are certainly important, a new administrative structure must be developed that takes into account a comprehensive transportation policy for the Xavier community.
- Several mid-term strategies require building relationships with governmental entities, community groups and private businesses, as well as University departments, divisions, and campus groups. The ultimate success of these efforts relies on collaboration with groups with potentially divergent interests and, therefore, the challenge cannot be overlooked.
- In terms of financial outlay for equipment and infrastructure, there will be costs associated with nearly all goals outlined in this Plan from short-term to long-term; some long-term strategies will incur significant costs. While some savings may be realized from reductions in air travel, it is likely that the purchase of carbon offsets may be necessary to realize a significant decrease in CO<sub>2</sub> emissions. Also, increasing faculty, staff and student use of public transportation may require investment in support infrastructure (e.g., a transportation hub, covered bus stops, etc.), as well as financial support for a bus ridership program. Identifying and converting underutilized campus space into centralized bike and/or two-wheeled vehicle parking will not require significant expenditure, but is still worth mentioning here.

