

**UMKC Parking and Transportation Task Force**  
**Report and Recommendations**  
**August 5, 2009**

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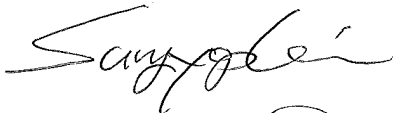
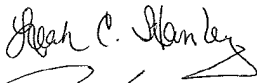
## I. Abstract

The University of Missouri Kansas City has roughly 17, 500 commuters coming to campus daily. According to a recent parking survey conducted in Spring 2009 84.4% of individuals travel to campus in a single occupancy vehicle. The UMKC Parking Services supplies 4,602 parking spaces on campus to serve those automobiles. With increasing demand on campus parking there are constant questions on whether or not it is prudent to add more parking spaces. Questions as to whether UMKC should build more parking infrastructure continue to arise. Debates on the economic and environmental impacts of building new parking structures have lead to the creation of a UMKC Parking and Transportation Task Force to look at the options available with current local infrastructure, University resources and the willingness of commuters to change their behavior to less favor single occupancy vehicles. This report is an overview of months of dialog, meetings and research on the current status of parking and transportation on campus, options available at other campuses nationally, what the current infrastructure of the region provides and the environmental and social impacts of our choices.

### With signatory of members



K. Batt Baker



Bonnie L. Panter



## **Introduction**

The University of Missouri Kansas City is an urban campus located in metropolitan Kansas City, Missouri, in the center of the city proximately 4.5 miles from the city center. Of the 15,000 students pursuing degrees, approximately 94% live off campus or commute to UMKC. Additionally, many employees commute to campus from within the seven county metro regions. Although opportunities for students, faculty, and staff to take public transportation to campus have improved over the past few years, the infrequency of shuttles or buses and the unavailability of these rides during off-peak hours mean that many people continue to drive when they need to come to campus.

Early in 2008 three events occurred that made a quest for options to reduce trips to campus a priority for the campus community. In April, 2008 UMKC became the first major Missouri public university to sign the American College & University Presidents Climate Commitment with an ultimate goal of becoming climate neutral. Secondly and more immediately pressing on a personal level, gas prices began to soar. Thirdly, the replacement of 32N, a deteriorating parking garage located on the west side of campus on Oak Street, demanded attention as cars were being damaged by rust flow. Following these events, the campus became more focused on finding green alternatives to driving. This report recommends how the UMKC campus community can take steps to reduce strain on fuel budgets and support a larger university goal in becoming carbon neutral and determine the needs of future parking structures for the campus. Included are challenges anyone may face in implementing a new paradigm for alternative transportation on their campus as well as opportunities and strategies for future parking and implementing alternatives to parking.

In fall 2008 semester, UMKC convened a Parking and Transportation Task Force to evaluate its parking and transportation options to provide access and parking on the campus to meet faculty, staff, students and visitors needs while considering the environmental impact on the area. The Task Force determined the best way to get information from individuals traveling to campus was to conduct a survey to find out what the current travel behaviors are and what people are willing to do to reduce the number of single passenger vehicles brought to campus daily. The findings and recommendations in this report represent an initial, baseline assessment regarding the future plans for the 32N garage and for encouraging sustainable commuting practices.

If the number of responses from the Parking and Transportation survey conducted in spring semester 2009 are any indicator, the topic of campus parking is one of the major “hot button” issues for faculty, staff and students at this time. The perceptions regarding limited availability and current cost for parking were consistently expressed as areas of importance. What is the current status of individual perceptions regarding parking and what, if any, alternative choices are individuals willing to engage in to reduce the need for available parking space on campus? And lastly, do people coming to campus make choices for travel based upon the environmental impact?

There is a diverse population of over 15,000 students, 2500 faculty and staff, who are served by UMKC Parking Operations. Additionally, the community also uses parking facilities on

campus when coming to special events on campus. There are currently around 4,800 spaces on the Volker Campus and approximately 1709 spaces on the Health Sciences Campus of Hospital Hill campus. UMKC is an urban campus surrounded by neighborhoods and the available space for expansion is limited. It is important to utilize space available by encouraging multi modal travel to and within the campus by (1) creating incentives through options in parking fee schedules, and (2) making public transportation options more attractive to staff, faculty and students through reduced fee passes, as well as (3) an education program focused on the use of other options, including ride share, bicycles, walking, etc.

Other options are currently being explored such as a student bus pass program, a Clean Commute loaner bicycle program and Ride Share.

#### **IV. Methodology**

The Task Force met weekly in its first month to discuss concerns about the 32 North parking garage, which is an antiquated structure that damages cars during heavy rains because of rust flows. The Task Force used reports and studies of past and current parking conditions provided by Parking Services, complemented by explanations from the administrators for parking, Michelle Cone and Dennis Cesari. These documents (see XII) gave a good baseline for the group to recommend that the garage should be “patched” in order to be serviceable for another five years. The Task Force also noted that this was really a maintenance decision for Parking Operations rather than a part of the Task Force’s mission.

The Task Force subsequently met twice to decide on specific areas of concentration to research regarding future options for parking and transportation on campus, and to decide on tools for gathering information that would contribute to a recommendation. The Task Force identified two main areas of inquiry: to find out what motivates current parking practices for students, faculty and staff on campus; and to develop alternatives that could reduce the need for on-campus parking in the future. All members thought that a survey would solicit this kind of information.

The second meeting narrowed the kinds of information the survey should generate and developed preliminary questions through group brainstorming. The survey was intended to find out three kinds of things. First, it solicited basic demographic information about the students, staff and faculty surveyed as well as their current parking and transportation habits. Secondly, it elicited the influencing factors on those habits such as expense, convenience, safety, etc. And thirdly, to survey the factors that would encourage more environmentally conscious modes of transportation including a bus pass program, bicycle program, Ride Share, etc.

The draft categories and questions for the survey that came out of this meeting were refined by Gina Gill and resubmitted to the committee members. With their comments and suggestions, the final draft from the Task Force was sent to Larry Bunce in Campus Research Services and honed further by his staff in consultation with Kaye Johnston, Scott

Baker and Dennis Cesari. Johnston then acted as a coordinator between Bunce's staff and members of the Task Force as the survey was given its final shape.

**V. Survey Results As Reported by Dr. Larry Bunce**

Attached are multiple tables detailing results of the recent survey of students, faculty and staff regarding their opinions of transportation and parking options at UMKC. The survey was sent to one-third of the total on-campus population of students (5,075), faculty (337), and staff (710). A total of 761 surveys were completed by students; 112 surveys were completed by faculty; and 284 surveys were completed by staff. Table 1 displays the characteristics of the survey respondents. As seen in Table 2, the gender and age of the survey respondents did not differ greatly from those of the UMKC population; though for staff there were a higher percentage of female and older respondents. Table 3 indicates which campus location each group of respondents primarily works or attends school at. Table 4 breaks the distance from campus down by respondent affiliation, and Table 5 portrays the distance from campus for each location.

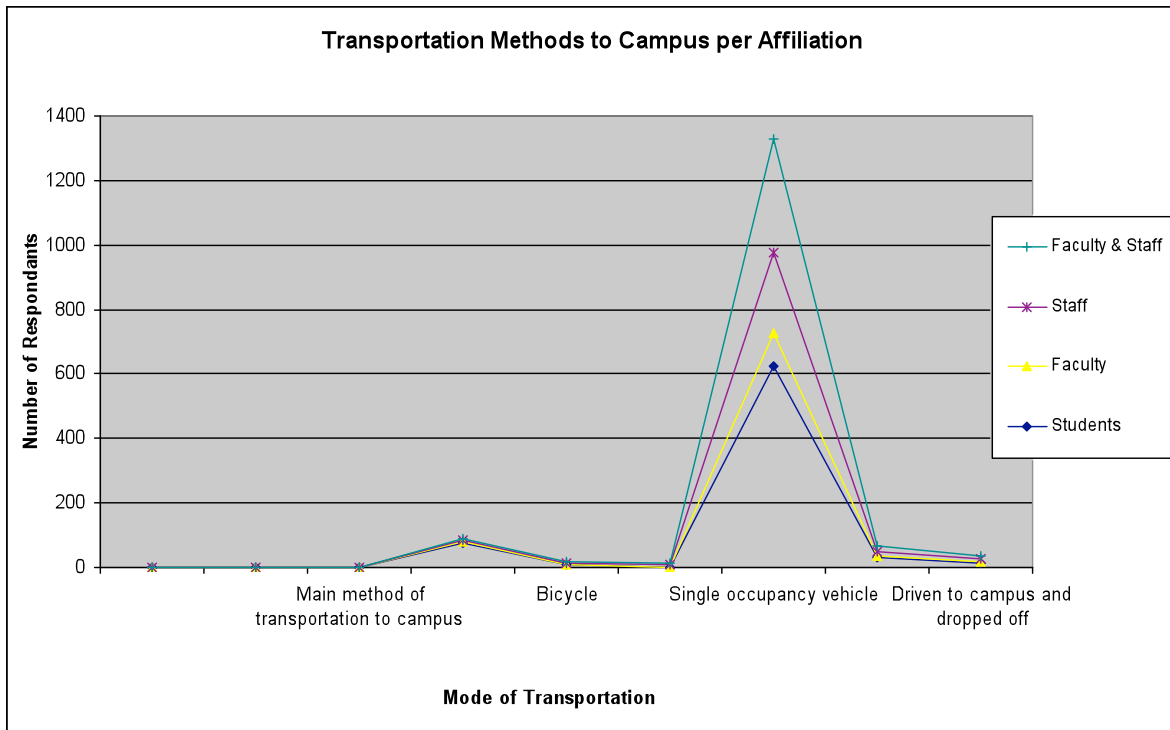


Table 6 shows a large majority of the respondents (84%) drive a single occupancy vehicle to campus. This is especially true for faculty members (see Table 7) and for respondents that live more than 5 miles away from campus (see Table 10). Overall, relatively few respondents indicated they rode the bus or a bicycle to campus. In terms of how people get around while on campus, Table 6 shows that nearly three-fourths of the respondents indicated they walk. However, nearly a quarter of the respondents indicated they drive an automobile or motorcycle to get around on campus, and this was especially true for staff from the Troost location. Less than 10 total respondents indicated they bike across campus or use the shuttle.

Respondents that indicated they drove a single occupancy vehicle or carpooled to campus were asked a series of questions regarding where they parked and what factors influenced their parking decisions. As seen in Table 11, nine out of ten people who drive to campus, park on campus, especially on the Volker campus (see Table 13). A large majority of the people who park on campus have purchased a parking permit. In fact, nearly all faculty and staff that drive to campus park in permit parking, and unfortunately, half of them indicated they have difficulty finding a parking space on campus. Students were much more likely to use metered parking, but regardless of whether they used metered or permit parking, approximately three-fourths of them indicated they had some difficulty finding a parking space on campus. Difficulties finding available parking on campus seemed to be worst for individuals trying to find parking between 2:00 p.m. and 5:00 p.m. (see Table 14).

Participants were asked to rank four factors in terms of the importance they had on deciding where to park. As Table 15 shows, “*convenience*” was selected as the most important factor overall, followed closely by “*Personal Safety*.” However, when you start to drill down into the data you find several interesting differences. For example, convenience was particularly important to faculty members (see Table 16). As one might imagine, personal safety was the most important factor for female respondents (see Table 18). Price was by far the most important factor for individuals parking off campus (see Table 19).

Participants were asked to indicate how much impact protecting the environment had on selecting their main mode of transportation to and from UMKC. As Table 20 shows, protecting the environment had at least some impact on the decision to choose some alternative to driving a single occupancy vehicle. However, driving a single occupancy vehicle is again the main mode of transportation for a large majority of the respondents, and protecting the environment has no impact on their decision for four out of ten of these drivers. As one might imagine, environmental impact has less influence the further away an individual lives from campus (see Table 24).

Table 25 shows three-fourths or more of the respondents arrive on campus before 11:00 a.m. each day of the week. This is especially true for faculty and staff (see Table 29). Conversely, students are more likely to remain on campus until after 8:00 p.m. As seen in Tables 30-32, people are more likely to arrive after 11:00 a.m. and leave after 5:00 p.m. on the Volker campus. Furthermore, at least half of the respondents indicated they did not leave and return to campus on any day of the week, and approximately one-third indicated they only left and returned one time each day (see Table 35). In terms of campus to campus travel, again the majority of respondents indicated they did not leave their main campus to travel to one of the other locations, though it does appear that individuals on the Health Sciences Campus of Hospital Hill and Troost campuses are more likely to engage in such activity (see Table 38).

Participants were asked to indicate how important six specific issues were to them. As Table 39 shows, convenient parking, driving to campus, and walkability on campus were the three most important issues. This is not surprising considering the large number of respondents that drive to campus and walk on campus. Conversely, only about three out of ten respondents considered access to public transportation, bike infrastructure, or carpooling

as being important. It does appear though those respondents who were already using alternative modes of transportation were more likely to view these issues as important (see Tables 41-43).

As Table 46 shows, only about three out of ten respondents indicated they would be likely to use a remote parking lot as an alternative to parking on campus. When you drill down by affiliation with the university, you find that the likelihood of using remote parking is even lower for faculty and staff (see Table 47). When respondents were told that the remote lot might be a 10-minute shuttle ride from campus, the percent indicating they would likely use the service dropped considerably, and when they were told the shuttle might arrive to the lot every 30 minutes, the percent who would likely use the service dropped even further. However, the percent who indicated they would likely use the service increased to 42% when the cost was reduced to 30% of current permit fees, especially for faculty.

Participants were asked to indicate how likely they would be to purchase a reduced cost bus pass if one was made available through the university. As Table 51 shows, fully two-thirds of the respondents were not interested in riding the bus, even at a reduced rate. However, interest in this option was higher for individuals who lived within 5 miles from campus and also for individuals who lived within a 10 minute walk of a bus stop. Table 52 displays the arrival and departure times of respondents who indicated they might be interested in purchasing a bus pass.

Approximately one-fourth of the respondents indicated they would be likely to utilize carpooling as an alternative to parking on campus (see Table 54). Interest was highest for student respondents, as shown in Table 55, especially if alternative transportation would be made available for individual use on campus (see Table 58).

Interestingly, the option of carpooling seems to be the least appealing to individuals who are currently driving single occupancy vehicles to campus, which would likely be the group the university would want to see utilize carpooling the most.

As Table 59 shows, approximately one-fourth of the respondents who had access to a bicycle indicated they would likely ride a bicycle as an alternative to parking on campus. Interestingly, a noticeably higher percentage of students and faculty indicated interest in this option than staff (see Table 60). Furthermore, this option was more likely to be used by individuals at the Troost and the Volker campuses (see Table 61). As one would expect, the further an individual lives from campus, the less likely he/she would utilize biking as an alternative mode of transportation (see Table 62). Finally, this option appears to be most appealing to individuals who are currently walking to campus (see Table 63).

Finally, Table 64 shows that riding a motorcycle to campus as a main mode of transportation was likely for nearly two-thirds of the respondents who currently own a motorcycle. As shown in Table 66, nearly each of these individuals currently drives a single occupancy vehicle to campus already, which may include riding their motorcycle.

**Survey Report-**

**a) Actual Survey Questions PDF (see separate file)**

**b) Report PDF (see separate file)**

**c) Graphs and Tables of results (see separate file)**

## VI. Recommendations from the Task Force

### a) **Parking**

The following data regarding current parking on the Volker campus is excerpted from a UMKC Parking Study conducted in October 2008. (UMKC Parking Study 2008) This report details the analysis, findings and conclusions of a parking evaluation for the UMKC Master Plan update. As part of the update, HNTB conducted a study to examine parking needs for UMKC's Volker campus. The study includes analysis of the existing parking conditions, a review of the current Master Plan build-out scenario, and an evaluation of future parking needs. This study is based on and builds upon other parking studies completed for the campus including the UMKC 1995 Parking/Traffic Master Plan and UMKC 2003 Parking and Traffic Master Plan Update.

Parking demand was determined by counting the open or empty spaces in the parking lots. These counts were taken on an hourly basis, from 8:00 AM until 5:00 PM daily over a one week period during the semester. Then, the average of these totals was subtracted from the parking lots capacities. Based on information provided by UMKC, Fall 2007 enrollment was 12,578 on-campus students with a faculty/staff population of 2,576. Enrollment data provided for Fall 2004 and Fall 2005 also indicated that student enrollment has remained relatively unchanged for several years. Projections for 2009-2010 indicate that enrollment will also remain about the same.

Existing parking supply and demand information is summarized in Table 2.

Table 2: 2008 Parking Conditions <sup>1</sup>

Designation	Existing Demand	No of Spaces	Effective Supply <sup>2</sup>	Surplus/Shortage
Students	2,338	2,677	2,409	71
Faculty/Staff	1,059	1,252	1,127	68
Visitors <sup>3</sup>	325	442	398	73
Handicap/Special Use	- <sup>4</sup>	231	-	-
<b>Total</b>	<b>3,723</b>	<b>4,602</b>	<b>3,934</b>	<b>212</b>

1 Number of existing spaces and occupancy collected by UMKC staff in Spring 2008.

2 Effective supply equal Existing Supply times 90% occupancy as the theoretical capacity.

3 Metered spaces

4 Existing Demand for Handicapped and Special Use parking was not assessed as part of this study.

As shown in Table 2, UMKC currently provides 2,677 parking spaces for use by students and 1,252 spaces for faculty/staff and 442 for visitors. The remaining 231 spaces are handicapped or special use spaces. The student parking has approximately 71 spaces in excess of demand, the student/faculty and visitor parking has approximately 68 spaces in excess of the current demand, and 73 excess visitor spaces exist, based on the effective supply.

The parking analysis conducted for the UMKC Volker Campus indicates that the existing parking demand is adequately serviced by the existing parking facilities throughout campus. Parking is also effectively balanced among the three major parking designations – students,

faculty/staff, and visitors. However, many of the existing parking facilities are operating at a high occupancy level, indicating that there is not a lot of excess capacity available to support an increase in demand.

As part of this analysis, increases in parking demand and/or redistribution of parking demand to other parts of the Volker campus were assessed based on planned changes in campus facilities and overall increases in enrollment as outlined in the 2008 UMKC Master Plan Update. Based on this assessment, the following observations and recommendations are noted:

- Significant parking deficiencies are expected throughout campus, especially in Zones 1 (West Campus), 2 (North Campus) and 3 (South Campus). As individual redevelopment projects are implemented across campus, parking needs should also be incrementally assessed to appropriately and economically plan for the parking needs in each area of campus.
- Based on the UMKC 2008 Master Plan Update and discussions with UMKC staff, Zone 1 has been identified as having the most immediate need for parking improvements. The existing Oak Street Parking Structure is reaching the end of its useful life and is in need of replacement. A sensitivity analysis was conducted for Zone 1 to assess parking needs and to determine the number of spaces that should be provided as part of the new Oak Street Parking Structure. As a result of this analysis, it was determined that the new parking structure should accommodate parking for between 1,430 and 2,040 vehicles. A final determination of the number of spaces should be made in consideration of the overall cost of the structure and in close consultation with UMKC staff.

In addition to the data from this report, there are some important perspectives to keep in mind. Parking on campus has changed significantly and relatively rapidly in the recent past. Historically parking at UMKC mainly utilized traditional surface parking lots with the Oak Street parking structure as an exception. Parking fees at that time were minimal because UMKC carried no debt for parking structures. During the 1990's the university sold off property north of Brush Creek that was formerly used as surface parking. While at the same time we grew our enrollment. As a result the Rockhill Parking structure was needed to satisfy growing parking needs at UMKC. Since the university has a position that all funds supporting parking needs must come from revenue collected from the parking pool, the cost of parking at UMKC was increased to service the debt for the new structure. During the early 2000's expansion on the Health Sciences Campus of Hospital Hill eliminated much of the existing surface parking creating a need for yet another parking structure, again parking fees have had to increase to service this debt. Over the last 10 years parking fees have had to be increased by 200% to keep pace with our current debt.

While our current parking fee of \$44.00 is very comparable to many urban universities and to current parking costs in Kansas City it is apparent that many in the parking pool feel that this price is out of line, especially for staff members on the lower end of the pay scale (based on the 2008 Parking Study and the fact that Faculty Senate and Staff Council approved measures to tier parking fees to give relief to these employees).

We also need to encompass the transportation and parking needs of visitors, and plan for future increases in use. Although we currently have sufficient parking here on campus, we foresee a future need for expansion to maintain adequate space for the parking pool (unless we are able to reduce the volume of vehicles parking on campus through sustainability efforts). We also see the need for special use parking to accommodate the new soccer facility and the soon to be expanded performing arts center.

The Conservatory of Music and Dance now is raising funds to build an extension to the James C. Olsen Performing Arts Center in the parking lot east of the building. Kansas City Repertory Theatre has gained prominence nationally, and this heightened awareness of the Rep helps strengthen UMKC's position locally as the campus for the arts. As programming at the Conservatory and the Rep continues to grow bigger and better, attendance at events will also grow. Lot 32N is centrally located to the Performing Arts Center, the new soccer field, Swinney Recreation Center and the new student union, now under construction. It is the parking lot of choice for campus visitors attending events at these university structures.

Those of us who occupy the James C. Olsen Performing Arts Center support the building of a new structure at 32N and believe that patrons and other visitors, including parents and perspective students, need and will appreciate a safe, clean, convenient place to park. The quality of their total experience on campus can only have a positive outcome for all of us. Although we are moving forward with maintenance of the outdated Oak Street parking facility, we realize that this is just a stop gap for an aging structure that has been labeled an eye-sore. It is inevitable that the university will have to replace this structure in the future and that this will most likely create the need to raise parking fees again to accommodate the new debt.

#### **b) Remote Lot**

One alternative to building a new parking structure on campus would be to create remote parking and provide a shuttle service between campus and the lot. When asked generally about the likelihood of using remote parking on the survey, around a third of respondents indicated they would likely use this option. However, this number rose to almost 50% if the cost of using remote parking would be 30% of parking fees for campus. Both student and staff respondents indicated strong interest in this option, that is the two largest population groups at UMKC.

The option of obtaining remote parking and shuttling employees and students to/from the Volker campus was investigated in October 2008. A search of all properties on the market for sale or lease within a 30 block radius of the Volker campus was conducted. Unfortunately, there are limited opportunities for UMKC to acquire or lease remote parking lots within this radius that would also provide a reasonable level of security for vehicles and individuals. One site that is available and would have the potential to provide some surface parking is the now vacated Nazarene campus at 64<sup>th</sup> and Paseo. This site would also offer office space in addition to land for parking. The estimated purchase price for the property is \$4 million.

Of the 192,000 square feet of developable land, it is estimated that approximately 70% could be parking, or 134,000 sf. As each parking space requires 286 sf, and entrance drives each require 300 sf, the proposed land could accommodate 450 spaces. The estimated cost per parking space is \$5,000, so that the cost of constructing this parking lot would be \$2,250,000, or \$2.2 million. These parking spaces could enable the current Oak Street Parking Structure to be razed and replaced with a surface lot rather than a new parking garage. The cost to raze the garage and construct a 300 vehicle parking lot is estimated at \$1.8 million. The total project cost would thus be \$8 million, with Parking Operations responsible for covering acquisition of the land and construction of the parking lot. It should be noted that these estimates do not include the cost of renovations and furnishing to move UMKC offices from the Volker Campus to this site. This alternative also does not address the anticipated increased demand for parking on the west side of campus (Zone 1) due to shifting usage as the new student union opens and the Cherry Street dorms are converted to office space. This demand is estimated to be an increase of 700 spaces above the 709 spaces in the current 32N garage.

Assuming Parking Operations will fund this project, \$2.5 million from the capital pool would be used as a down payment. This leaves \$5.5 million to debt finance. \$5.5 million at 5% interest over 20 years equals an annual debt payment of \$420,300. It will also be required to operate a shuttle between the Volker and Nazarene campuses, estimated to cost \$100,000 per year. The parking fee rate at the Nazarene campus would be less than on campus, estimated at 31% of the Volker campus rates. This would result in a reduction in revenue for parking of approximately \$48,600 per year. Factoring all these assumptions into the Parking Operations Budget, this proposal could be financed by Parking Operations with additional parking fee increases. If additional parking is still needed on campus beyond the remote lot, however, increases would be greater due to the incurred costs of the remote lot and depletion of the capital pool.

### **c) Reduced Fee Bus Pass**

Another way to reduce parking demand on campus is to encourage the use of mass transit. Universities in larger cities typically provide discounted or free bus passes for students, faculty and staff; two-thirds of UMKC's comparator institutions have such programs. The programs often distinguish student passes from faculty/staff programs, with the latter being discount rates while students more generally receive free passes or larger discounts. These programs involve partnerships between the universities and the local transportation authorities, but there are other incentive programs as well. In 2009 the federal government created a pre-tax allowance for using mass transit. The Kansas City Area Transportation Authority (KCATA) also has a program in which employers and employees share the cost of monthly bus passes.

Although the perception of the KCATA is commonly that routes and frequency are inadequate, the UMKC campus has very good services. This remains true even after service reductions in June 2009 eliminated a route that ran from the Oak Street dorms to downtown and reduced frequency on many routes, including the 155 which runs between Blue Parkway and Westport. The MAX bus line that runs between Waldo and downtown still runs at least every half hour, more frequently during rush hour. A new MAX line is scheduled to begin

service on Troost in 2010, another connection between south Kansas City and downtown. From downtown there are routes that spread throughout the greater metropolitan area, including to Liberty and Independence. There is also transfer options downtown to the JO, the bus service of Johnson County, Kansas.

For students, the KCATA has offered a program where all students could ride any KCATA bus anytime. This program would replace the current Hospital Hill shuttle, and instead students would use the new Troost Max bus line for access to and from the Health Sciences Campus of Hospital Hill. In addition, UMKC would provide a Volker Campus shuttle that would loop from Brookside to Troost through the campus. The cost of this program would be approximately \$1.50/credit hour for every student attending UMKC. It is anticipated the students will vote on a referendum in the fall of 2009 for this program with an implementation date of January 2011 to coincide with the start of the new Troost Max line.

In order for a bus pass program to impact parking on campus, there need to be strong incentives for people to switch to the bus. The survey indicates that only 7 of the over 1,000 respondents (0.6%) currently use the bus to commute to campus. Moreover, less than 25% responded that they would be likely to consider using the bus if discounted bus passes were available; among faculty, this number was less than 20%. A successful bus pass program would need to offer a significant subsidy in order to attract users. It would also best encompass the widest coverage, including Metro and JO busses as well as future expansion into commuter rail or light rail, if these initiatives come to fruition. It would also require a significant education program to inform all campus communities about the bus network and benefits of using mass transit.

#### **d) Bicycling**

*Clean Commute* is a two-year pilot program managed by Bridging The Gap and funded by a grant from the Missouri Department of Transportation. The new University of Missouri, Kansas City (UMKC) Clean Commute program will challenge the student, staff, and faculty to reduce single occupancy vehicle trips to and from campus by using alternative modes of transportation such as bicycles, walking and mass transit. The Clean Commute program has 52 bikes it loans out on a semester long basis on both Volker and Health Sciences Campus of Hospital Hill campuses.

Modeled on successful programs across the country the Clean Commute program at UMKC will incorporate alternative transportation education while focusing on:

- Distributing of new loaner bicycles equipped with lights, locks and fenders.
- Installing bike parking racks
- Creating of a campus bike map
- Offering on-campus bike maintenance
- Hosting safety education workshops

UMKC sells as many as 8,000 parking permits per year. If you consider each of those permits to represent one single occupancy car trip per day that represents a potential 2.92 million car trips annually to campus! Involvement in an alternative commute program is the

first layer of shifting driving behaviors. The goal of UMKC Clean Commute is to set a regional example showing how safe and easy it is to choose alternative transportation and promote the positive health and air quality impacts of those choices.

July 1<sup>st</sup> was the kickoff of the Swinney Recreation Center Bicycle Check Out Program. The program is designed to give students and members of Swinney Recreation Center an opportunity to add biking to their fitness program. We currently have 2 bicycles that can be checked out from our service center located on the 1<sup>st</sup> floor of Swinney.

In 2009-2010 we will be adding a series of Outdoor Education Programs that will include backpacking, bike repair, and camping. Look for updates on the Swinney Recreation Center web site. Clean Commute and Swinney Recreation Center have been collaborating on programs during the 2008-2009 academic year. We will continue to work together to broaden the scope of the program to the UMKC community.

#### **e) Pedestrian walkability of campus**

Walkability is a major incentive for people on campus to walk to classes, meetings, lunch and other activities, rather than driving and incorporate walking as a part of their multi-modal commute. UMKC's Traffic Survey results showed that most students and staff walk around the Volker Campus even though most drive to the campus. According to the Kansas City Walkability Plan's Pedestrian Mobility Report Card, UMKC scored an A in categories of Directness\*; Completeness; Visual Interest and Amenities; and Security with a B in the category of Street Crossing due to high motor traffic volume. This is seen on all surrounding streets to the North, West and East as well as on the two interior streets, Rockhill and Oak. The plan notes that like other universities, the campus "was designed with the walking student in mind providing wide sidewalks, landscaping and visual amenities throughout."

Students, staff and visitors alike know that the greatest challenge is crossing streets to the adjacent areas of campus, except to the south which is more residential and has less motor traffic. The KC Plan proposes UMKC "study ways to make problematic intersections along Volker Boulevard more pedestrian friendly and minimize the divide (updated crosswalks, pedestrian refuges, pedestrian signage on roadway etc.)" within three years short term, "incorporate walkability into their Rockhill Road improvement plans.", mid-term and long term work to "provide pedestrian refuges along Volker Boulevard at Brookside Boulevard, Rockhill Road, and Troost Avenue." Also, it is suggested that UMKC create a better defined connection to the Brush Creek Trail System from the campus along Volker Boulevard at the Oak Street, Rockhill Road, and Troost Avenue intersections. These areas are always of great concern to campus planners in an effort to provide safety to students, staff and visitors to the campus, but because the campus is bound by city streets, planners are tied to city laws and regulations as to what can be done and how quickly safety issues can be addressed.

\*The Kansas City Walkability Plan states, "Directness is better in this pedestrian zone than any other in Kansas City, with numerous paths across campus that connect the classrooms and other activities. . . with sidewalks that are attached and on both sides of the street throughout most of the zone."

The campus has been limited by the city to specific signage and existing stop and caution lights on Troost, Rockhill and Oak Street for pedestrian crossings and have not been successful in securing additional stop lights with crossing signals in areas that pedestrian accidents and even a fatality has occurred. The UMKC survey also showed that over 75% of students and staff working at or utilizing services at the campus' Troost location drive to and from that northernmost area due to the difficulty in crossing Volker at Troost. However, a great improvement has been made with the reduction of four-lane traffic on Oak Street between Volker and 52<sup>nd</sup> to two lanes with a turning lane. With the new construction of campus residential housing on the west side of Oak Street, this was seen as a plus for the increased students who are crossing this busy street to access the rest of the campus. However, additional safety assessments should be ongoing to assure that UMKC and Kansas City are meeting the needs of pedestrians in this area.

As the campus continues to grow, the UMKC Master Plan is placing even more emphasis on pedestrian accessibility with plans to close street traffic on 51<sup>st</sup> Street between Troost and Cherry Street. This interior street closing would create a walking boulevard in the center of the campus with safer access for all pedestrians to the main library, recreation and new student facilities, as well as many of the halls/buildings where classes are held or business is conducted. Planners will continue to lobby the city to implement better safety measures for pedestrians and motorists alike on the surrounding and bisecting streets of the campus. Future negotiations may lead to streets being "closed hours" for auto traffic thereby allowing only pedestrian and necessary campus and delivery vehicles to access interior streets as has been incorporated at other universities. This could lead to even greater increased pedestrian and bicycle traffic throughout the campus making for a more walker-friendly campus.

#### **f) Motorcycle and mopeds**

More Americans than ever have motorcycles – the Federal Highway Administration estimated 6.2 million registered motorcycles were on the road in 2006. The Motorcycle Industry Council's latest survey found that the number of motorcycles owned and used in America has grown 19 percent since 2003, to a total of 10.4 million. Last year, 25 million people "swung a leg over a bike".

Commuters across the country, pushed by soaring gas prices and a sagging economy, increasingly are turning to alternate means of getting to and from work. While recreational riders have boosted motorcycle sales over the years, more recently riders have discovered that their motorcycle is a good alternative for travel to work - one which provides many benefits including access to restricted commuter lanes, easier and less expensive parking, and in many cases a faster commute.

Reasons to ride a two-wheeled vehicle to work include:

- Reduces traffic and parking congestion
- Uses less fuel than an automobile
- Results in less pollution than commuting in a larger vehicle
- Is less destructive to road surfaces and bridges (because of lighter weight)
- Gets riders to work and back home faster

With all of these benefits, it's surprising that more riders don't commute to work on their motorcycles. According to U.S. Census figures, about 150,000 motorcycles are ridden to work regularly. This means only 2.5 percent of all registered motorcycles are used for commuting. When compared to the total number of daily commuters in all types of vehicles, the ratio of motorcycle commuters falls to around one tenth of one percent. The low ratio of motorcycle commuters, particularly compared to much higher ratios in other highly populated countries, seems to be driven in the U.S. by: (1) the relatively low price of gas and (2) the lack of public policy and employer incentives encouraging motorcycle commuting.

Motorcycles are the most fuel-efficient form of transportation on the road and are likely to remain that way until electric cars hit the highways in significant numbers. In addition, once the motorcycles arrive at their commuting destination, they take up less space. A well-designed motorcycle parking lot can put 3-5 motorcycles in the same space it takes to park one automobile.

Traditionally, the incentives used to encourage two-wheeled commuting include access to restricted use commuter lanes, reduced parking fees, and protected parking. UMKC already provides a generous policy for motorcycle parking by providing a free motorcycle sticker to any employee who purchases a car sticker and subsequently requests one for a motorcycle. Based on the completely logical assumption that the employee cannot drive both a car and a motorcycle to campus on the same day, this policy encourages the use of a motorcycle whenever it is convenient, and makes motorcycle commuting practical even for those who may only be able to do so a few days a year.

The most important thing UMKC could do to promote the use of two-wheeled vehicles for commuting, thereby taking advantage of all its inherent benefits, would be to provide dedicated parking. This would advance the goals of clean commuting with a minimum of expense and disruption. Removing as few as two car spots and converting them to motorcycle parking would allow perhaps as many as half a dozen motorcycles to park in the same space.

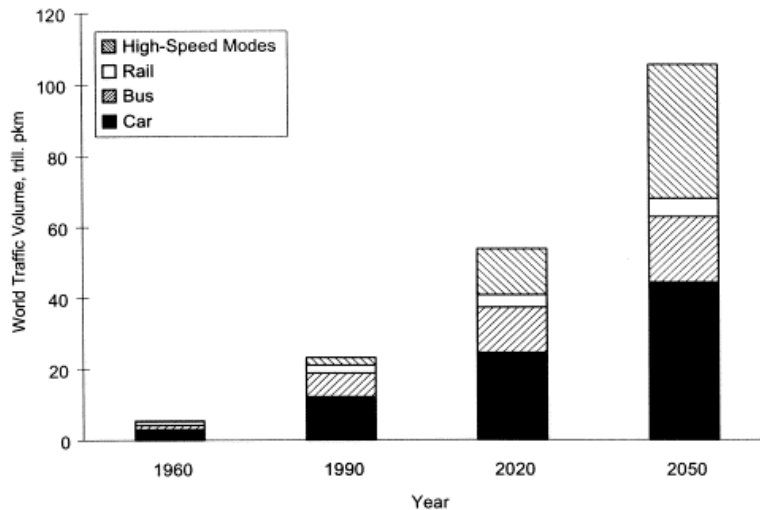
**g) Potential for 32N to be multi-use parking structure**

It is evident in this report, that issues of transportation and parking in the urban campus are multi-faceted issues. According to the survey conducted by UMKC Institutional Research, there is room to improve participation in a variety of transportation modes because it shows more than 8 out of 10 individuals commuting to campus daily use single occupancy vehicles as their mode of transportation. To support goals to increase use of methods such as cycling, mass transit, campus shuttles, pedestrian, carpooling and alternative fuel vehicles, UMKC visions would include a multi-modal transportation and parking structure if it rebuilds 32N.

There are examples around the nation of parking structures that are multi-functional to meet today's demands of a multi-modal society. Chicago and Portland are two examples with mixed use parking is increasing ridership between cyclers and mass transit. UMKC should carefully consider the option of creating a 21<sup>st</sup> century Transportation Hub at 32N that

would facilitate and encourage mass transit, pedestrian, cycling, carpooling and electrical car fueling.

The structure would be designed to be a bus and shuttle stop and transfer station, have space available for covered parking for bicycles, a charging station for electric vehicles, specially designated carpooling parking spaces as well as housing other amenities such as showers, lockers and bicycle mechanic to support the urban commuter. In addition, the space would be used for permit parking and special event parking.



(Lino Guzella illustrates the growth in multi-modal transportation trends through 2050)  
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#### **i. Electric Vehicle recharging stations**

To date, Carbon Day has donated a 120V electric charging station to UMKC to help promote electric vehicle use in KC, MO. The hope is that the charging station will expand and install more charging stations in Kansas City. The charging station is valued at \$3,000. Through the Clean Cities grant we have asked for funding to install the charging station – estimated cost \$2,783. The University’s commitment was a parking space valued at \$2,000.00 for a total value of the project at \$7,783. The charging station location has not been determined yet. To view the charging station visit - [www.mychargepoint.net/](http://www.mychargepoint.net/) Expanding our infrastructure to support alternative fuel vehicles should be a continued consideration in the UMKC Parking and Transportation planning process.

#### **ii. Mass Transit and campus shuttles**

There is currently a small covered bus stop on Oak, just north of 32N. While this bus stop is adjacent the street and part of The Metro facilities, 32N could have a covered space, information regarding bus transfers and routes, along with a kiosk where riders could purchase daily, weekly and monthly passes. Ridership at UMKC is currently .6% of the surveyed campus members, or roughly 105 people, and shows there is room to increase ridership. Increasing ridership on mass transit by an additional 3% within the next 10 years should be a goal of UMKC.

The campus shuttle is under utilized at this time according to the survey. Some of the reasons for low ridership may be the frequency of stops and time intervals between stops along with the lack of multi-modal coordination and planning. UMKC should consider the shuttle as part of its overall multi-modal transportation program and then align its schedule to fit better with that vision.

### **iii. Cycling**

There are a number of cyclists commuting to campus daily, including staff, faculty and students. The survey shows roughly 1% of commuter currently cycle to campus or somewhere in the number of 175 cyclists total. There is room for this number to grow as the infrastructure for cyclists improve. Many cyclists are in need of amenities such as showers, lockers and covered bicycle parking. Adding a bicycle mechanic also supports those commuting on campus in the event they have a flat tire or other type of challenge when riding to campus. Supporting cycling by having these resources in a multi-modal transportation hub would also support cyclist to ride the bus during inclement weather and be able to make decisions quickly when weather shifts during the course of the day. It should be a goal to support cycling as a mode of transportation to the campus and increase cycling by 5% within the next 10 years.

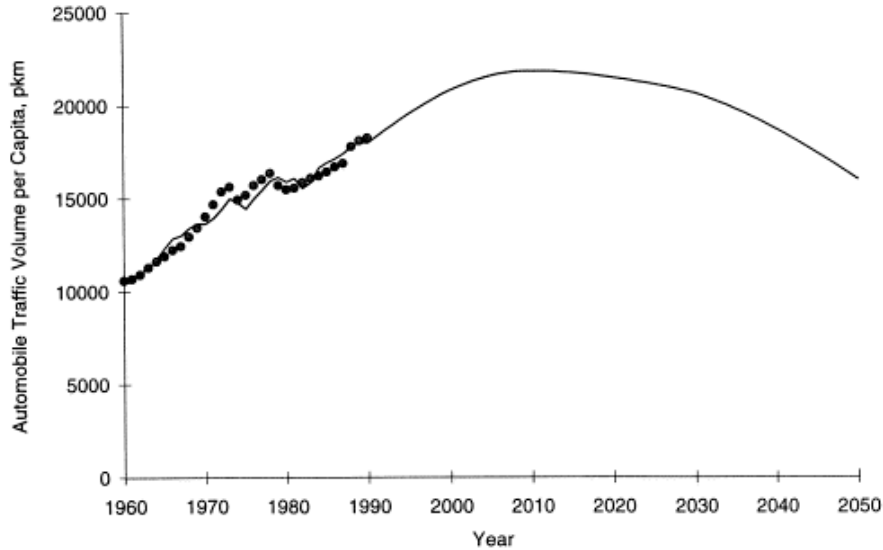
### **iv. Ride Share (Car Pooling)**

Currently, UMKC Human Resources participates in the Mid America Regional Council's Ride Share Program. Currently there are 235 active participants and that has grown tremendously since the summer of 2008 when gas prices soared over \$4 per gallon in the metro. Supporting Ride Share commuters, by reducing their parking permit costs and giving preferential parking space locations could increase the number of people participating. Long-term this would decrease the need for new parking spaces as well as encourage participation in the program.

### **v. Permit and Special Event Parking**

There is no evidence that single passenger vehicles will be completely eliminated in the coming years and there is much speculation that if by 2050 the rate of ridership will return to 1990 levels with an increase in multi-modal transport according to Lino Guzella, "Individual mobility is an indispensable component of any modern society. Automobiles will remain the main means by which this inexorably increasing demand will be satisfied in future." in his article entitled *Automobiles of the future and the role of automatic control in those systems from Science Direct*.

The following graph from the article by Guzella shows the projected trend in automobile use through 2050:



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It is important for UMKC to continue to monitor its parking usage, occupancy rates and amount of available parking in order to keep up with the demand. It is not unreasonable to plan for permit and special event parking when the decision to rebuild 32N is undertaken.

#### **h) Education**

The survey results indicate that there is a strong association between transportation mode choice to campus and environmental sensitivity among UMKC community members. The survey found that those who walk, bike, or take the bus to campus reported that their mode choice had “considerable impact” on the environment in substantially higher percents (31.3%, 50.5%, and 42.9%, respectively) than those who use single-occupancy vehicles or carpooling (10.9% and 9.8%) as shown in Table 20. These results indicate that concerns about the environment influence UMKC community members’ trip mode choice, and the UMKC community would potentially make changes to their mode choice for travel to campus if environmental concerns are raised and awareness promoted.

As society is increasingly paying more attention to sustainability, it is important to look at transportation with a sustainability perspective. The majority of UMKC’s community members use (single-occupied) personal automobiles for their trips to campus. Travel behavior is not easily changed. Part of the reason for this is that travel behavior has a habitual element in it even though convenience, trip chain (that is, multiple destinations in a person’s commute), and temporal and financial costs are major determinants (Kim and Ulfarsson, 2008). Appeals to environmental, health and economic benefits to promote sustainable transportation can be effective to increase awareness of the issue; however, long-term change in behavior hardly ever occurs with traditional information-only approach (Transport Canada, 2008).

As an alternative, Community-Based Social Marketing (CBSM) has been employed to promote sustainable transportation, and it has been proven to be effective (Transport Canada, 2008). CBSM is based on studies in social psychology that indicate “initiatives to

promote behavior change are often most effective when they are carried out at the community level and involve direct contact with people” (McKenzie-Mohr, 1999). CBSM involves the following steps: 1) identify desired behavior change(s); 2) identify potential barriers for the change(s); 3) design a program; 4) develop a pilot program; 5) evaluate and revise the program. In this process, a clearly defined community and direct contact with the members of the community are key components for success.

The survey shows that UMKC has strong potential to move toward more sustainable transportation within the community. The UMKC community’s choices in transportation have the ability to lead changes in the larger Kansas City community. How to make meaningful progress on sustainable transportation requires a communitywide consensus and leadership at UMKC. CBSM can provide a framework to launch the effort.

#### **i. Safety Concerns and Issues**

Reviewing the survey results, we see that a fairly significant percentage of respondents ranked personal safety as a factor in deciding where to park on campus (overall, more than 50% ranked it number 1 or 2, while female and Health Sciences Campus of Hospital Hill respondents were more likely to rank it as their number 1 factor).

Overall, the campus is reasonably safe, as the numbers in the safety reports published by the police demonstrate. The most common crimes committed on campus are burglary and motor vehicle theft, with violent crimes occurring fairly infrequently. This is not meant to downplay the fears people (especially women) have about parking on campus, but overall, the current parking structures seem to be fairly safe at the moment.

Planning for the future should continue to take safety into account, especially if a remote lot becomes an option. Parking areas (both local and remote) need to be well-lit, equipped with emergency phones and patrolled by police on a regular basis. A remote lot may require a continuous security presence, depending on the location.

### **VII. Environmental Impact of Parking and Transportation Choices**

During the Fall Semester 2008 Campus Facilities Management, working with a student intern conducted a carbon print using the Clean Air Cool Planet higher education calculator. The results of the calculator show the area of “Transportation” as being the largest contributor to carbon emissions on campus with 14,177.7 metric tons of CO<sub>2</sub> annually. In effect, 15,500 individuals commute to campus daily during the academic calendar to study, attend class, teach and work at the UMKC campus. Because transportation choices contribute significantly to carbon emissions and subsequently to the regions contribution to climate change, looking at how we commute to our urban campus is critical. How an individual makes daily transportation choices should be considered within the scope of this report. Cyclists current make up about 1% of daily commutes. That means around 150 individuals use cycling as their mode of transportation. How do we increase that amount to 3% which is the national average or 450 cyclists? The answer is to support cyclist by providing amenities such as covered bicycle parking, showers, lockers, bike safety lanes and providing easily assessable bicycles to students. Additionally, another mode of

transportation that is currently under utilized is mass transit. Providing reduced rate bus passes, or including bus passes for students would dramatically increase bus ridership and help support the infrastructure for mass transit. It should be a goal of UMKC to increase bus ridership from its current .6% to the national average of 2% or roughly 300 commuters daily. Add that to the current use of Ride Share on campus of 235, and we could effectively take nearly 1000 cars off the road through alternative means and with it nearly 900 metric tons of CO<sub>2</sub> annually. This is an aggressive strategy and goal there would need to be programs put in place on campus to facilitate such change, however, it could go a long way to reduce the amount of carbon in our community.

## **VIII. Conclusions**

The Parking and Transportation Task Force was convened to study the need for, and potential alternatives to, a new parking garage at the corner of 50<sup>th</sup> and Oak streets. We considered the perspectives of many campus and community constituencies, as reflected in the representatives on the Task Force. We achieved a broader perspective by conducting a survey to get a sense of campus members' attitudes and practices regarding commuting to campus and willingness to choose alternative modes of commuting other than single-occupancy vehicles. Both sources reflected a continuing and potentially increasing need for parking on campus. The survey indicated some willingness to consider environmental issues and switch to more sustainable modes of transportation. We have pointed out some ways to encourage this switch, both independently of a new garage as well as by including support facilities within a new garage. As we have noted, UMKC has already started developing programs aimed at encouraging sustainable commuting practices, and will undoubtedly continue and expand these programs.

The 32N parking garage at 50<sup>th</sup> and Oak was intended as a short-term structure; similar structures at UMSL were replaced many years ago. The repair work in summer 2009 on the garage will reportedly extend its functionality another 5 years, although a plan for its replacement will need to precede this date. The garage has 709 parking spaces and is currently utilized at about 80% capacity. However, the new student union, the renovation of the Cherry Street dorm to become office space, the proposed expansion of the Performing Arts Center, and the increased profile of the KC Rep will impact parking on this site more than any other site on campus. Moreover, the entrance to the new soccer stadium faces Cherry Street, making this garage the primary parking place for all events at the stadium. At the very minimum, the garage needs to be replaced with a surface lot at the time it loses functionality and the loss of space made up with a remote parking option. This solution still does not allow for adequate event parking at the site nor for the growth of the campus population that the administration seeks, and does not encompass the environmental impact of constructing the remote parking lot on what is currently green space. The current level of commitment to using alternatives to single-occupancy cars is vastly insufficient to offset the loss of over 700 spaces, or even 400, not to mention the difficulties of requiring the larger community to use alternative transportation to attend events on campus. It seems probable that a new garage will be most adequate for the parking demands on this particular site. The size, facilities, and costs, however, can and should be modified to accord with sustainable commuting practices; if initiatives promoting mass transit, bicycles and carpooling can be

facilitated and the campus communities can be enticed to use these alternatives over the next five years, then a surface lot may become a more realistic possibility.

In addition to the central question of building a new garage at 32N, certain ancillary issues called for study as the Task Force explored parking and transportation policies of the university and the goal of increasing sustainable, environmentally-friendly practices. Currently, all costs for parking maintenance and development are confined to the parking pool, drawn primarily from permit fees. As replacement of the 32N structure will create more parking especially for special use events, and will dramatically improve the universities' first impression to visitors, we feel that this improvement will significantly add to university infrastructure. Based on these aspects we feel that it is reasonable to ask for the university to subsidize a percentage of this cost rather than have the parking pool bear the entire expense. UMKC should also consider revising the fee structure of its permit and special events parking to include an increase in parking permit fees, adding a special event parking permit, considering tier parking permits for special uses such as carpooling and two wheeled motorized vehicles as a mechanism to fund alternative transportation programs to move toward a more sustainable future as an urban campus. Possible models include Arizona State University and Colorado State University, which in 2009 implemented incremental parking fee increases to fund its overall transportation plan that includes alternative transportation programs with commuter options. ([http://uabf.asu.edu/parking\\_commuter](http://uabf.asu.edu/parking_commuter), <http://police.colostate.edu/parkingfees.pdf>).

Finally, UMKC should become more proactive about integrating with city programs, both to contribute to the direction and policies the city makes regarding transportation and sustainability as well as to better position the campus to take advantage of such developments. A representative on the Transportation 2040 committee, for example, appointed by the Faculty Senate and possibly drawn from the Parking and Transportation Committee, could facilitate UMKC's engagement with regional transportation planning.

**Resources**

**Use this space for all of the reports Dennis provided and additional resources used in the recommendations such as websites, reports, research etc.**

- a) UMKC Sustainability & Transportation Initiatives, October 21, 2008
- b) Permit Rates & Revenues
- c) Semester Permit Data
- d) Parking Budget
- e) Shuttle Ridership
- f) Urban Institution Permit Fees
- g) 2008 Parking Study
- h) 2009 Oak Street Garage Condition Update
- i) Remote Parking Lot Option, October 17, 2008
- j) KCATA Transportation Proposal
- k) University Center Data on Event Parking Volumes
- l) References from Narratives throughout the report
- m) Kansas City Walkability Plan

Most of these reports are available at <http://www.umkc.edu/adminfinance/parking/>

## University Center Event/Activity Report for 2004-2009

Submitted to Ron Aulet, Parking and Transportation Task Force

Calendar Year 2008-2009			Daily Avg.
	EVENTS	PARTICIPANTS	
Total	2,852	166,400	492
8:00 am - 5:00 pm	2,208	125,820	372
5:00 pm - 11:00 pm	1,079	75,225	223
Crossover Events	435	(Day to Evening)	
Calendar Year 2007-2008			
	EVENTS	PARTICIPANTS	
Total	2,844	170,496	504
8:00 am - 5:00 pm	2,179	123,097	364
5:00 pm - 11:00 pm	1,462	102,365	303
Crossover Events	797	(Day to Evening)	
Calendar Year 2006-2007			
	EVENTS	PARTICIPANTS	
Total	2,469	132,622	392
8:00 am - 5:00 pm	1,918	100,397	297
5:00 pm - 11:00 pm	1,310	77,768	230
Crossover Events	759	(Day to Evening)	
Calendar Year 2005-2006			
	EVENTS	PARTICIPANTS	
Total	2,472	136,327	403
8:00 am - 5:00 pm	1,753	98,024	290
5:00 pm - 11:00 pm	1,412	77,048	228
Crossover Events	693	(Day to Evening)	
Calendar Year 2004-2005			
	EVENTS	PARTICIPANTS	
Total	2,299	132,079	391
8:00 am - 5:00 pm	1,772	96,992	287
5:00 pm - 11:00 pm	1,203	76,960	228
Crossover Events	676	(Day to Evening)	

Five Year Average - Events	
	EVENTS
Total	2,587
8:00 am - 5:00 pm	1,966
5:00 pm - 11:00 pm	1,293

Five Year Average - Participants	
	PARTICIPANTS
Total	147,585
8:00 am - 5:00 pm	108,866
5:00 pm - 11:00 pm	81,873

Daily Average - Participants	
	PARTICIPANTS
2008-2009	492
2007-2008	504
2006-2007	392
2005-2006	403
2004-2005	391

## References

### Parking

([http://uabf.asu.edu/parking\\_commuter](http://uabf.asu.edu/parking_commuter), <http://police.colostate.edu/parkingfees.pdf>).

Retrieved by Kaye Johnston, June 18, 2009 at 12:15pm

### Education

Kim, S. and Ulfarsson, G.F. (2008) Curbing automobile use for sustainable transportation: analysis of mode choice on short home-based trips. *Transportation*, 35: 723-737.

McKenzie-Mohr, D. (1999) *Fostering sustainable behavior: Community-based social marketing*. McKenzie-Mohr & Associates, Inc., Fredericton, NB Canada.

<http://www.cbsm.com/pages/guide/preface>.

Transport Canada (2008) *The role of community-based social marketing in supporting active and sustainable transportation*. Case Studies in Sustainable Transportation, Issue Paper 60.

### Multimodal parking

Chicago, Illinois Bike 2015 Plan on Bicycle Parking

<http://www.bike2015plan.org/chapter3/index.html>

Retrieved by Kaye Johnston on 6/15/2009

Portland, Oregon Transportation Multi-Modal Options

<http://www.portlandonline.com/TRANSPORTATION/index.cfm?c=34768>

Retrieved by Kaye Johnston on 6/15/2009

### Permit and Special Event Parking

“Individual mobility is an indispensable component of any modern society. Automobiles will remain the main means by which this inexorably increasing demand will be satisfied in future.” Lino Guzzella “Automobiles of the future and the role of automatic control in those systems from Science Direct, Annual Reviews in Control

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### Parking

UMKC Parking Report October 2008

Parking Operations website at:

[http://web2.umkc.edu/adminfinance/parking/UMKC\\_ParkingStudy%20October%202%202008.pdf](http://web2.umkc.edu/adminfinance/parking/UMKC_ParkingStudy%20October%202%202008.pdf) Retrieved by Scott Baker 7/25/2009