TEMPORAL AND SPATIAL VARIATIONS IN TRIP GENERATION AND PARKING CHARACTERISTICS AT A SMALL URBAN COLLEGE

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ABSTRACT OF
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Trip generation and characteristic data was collected over a three week period in November 2002 at Texas Wesleyan School of Law in Fort Worth, Texas, a small urban commuter college. As a result of this study, trip generation rates for students, staff, and overall were calculated. In addition, hourly distributions of total daily trips were calculated for each weekday and a typical weekday, which was a synthesis of the daily distribution curves for each weekday. The typical day distribution was further stratified by student parking lot location. The results of these stratifications show that for two parking facilities that are equal with respect to cost, quality, size, security, and accessibility, a small difference in parking lot spatial distance can make a large difference in parking lot use and distribution patterns, as a difference on approximately 100 m in spatial difference resulted in the nearer lot being preferred twice as much. In addition, pricing may not have a substantial affect on parking lot utilization, as students were will to pay more to park in spaces only a few meters closer. Interviews conducted as part of this study reveal that perceived convenience and perceived safety heavily influence parking choices.

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INTRODUCTION

The Texas Wesleyan School of Law is a commuter school located on the southeastern side of downtown Fort Worth, Texas. Encompassing an entire city block, the Law School in the 2002-2003 academic year had an enrollment of 670 students with a staff of 70. Classes are offered Monday through Friday during the day, and Monday through Thursday during the evenings. Classes begin daily at 8:00 AM, and end between 9:00 PM and 10:00 PM. The Law School's total floor space is 11,148.36 m^2 (120,000 ft^2), with 1,486.45 m^2 (16,000 ft^2) used as classroom space.

The Law School owns three parking facilities for the exclusive use of students and staff. All three of these lots are located across a relatively low-volume one-way street (Calhoun Street) to the east of the Law School building, and every space on each of these lots is less than a five minute walk from the Law School building. Each of these lots encompasses an entire city block. Two of these lots are for the students, and one is for the faculty and staff. All three lots are of equal size, quality, security, accessibility, and proximity.

The nearer of the two student lots is across the street and diagonal to the Law School building; its closest space is 35 m (115 ft) from the entrance to the Law School, and all spaces are within 160 m (525 ft) of the entrance. The farther of the two student lots is located one block away and diagonal to the Law School; its closest space is 120 m (395 ft) from the Law School entrance, and all spaces in this lot are within 270 m (885 ft) of the entrance. The staff lot is the closest of the three lots to the Law School building. Located directly to the east of the Law School building, all spaces in this lot are located within 125 m (410 ft) of the building entrance. Using a conservative walking rate of 60 m/min (197 ft/min), all spaces in all three lots are within a 5 minute walking distance from the Law School entrance. *(1, p. 13-8)*

In addition to the Law School lots, there are approximately 150 metered spaces along the streets adjacent to the Law School. These spaces cost up to $1 per day to use, and are heavily used by students who elect not to park in one of the student parking lots provided. Across the street and to the north of the Law School building is a multilevel parking garage for the use of the Fort Worth Convention Center; this facility is not used by either the students or the faculty and staff. The configuration of the campus, parking facilities, and adjacent street network is shown in **Figure 1**.

GENESIS OF THIS STUDY

In 2002, after receiving numerous complaints from students about parking and pedestrian-vehicle encounters, the Student Bar Association, in conjunction with the Law School administration,

decided to undertake a study of pedestrian and vehicular activities to determine what solutions could be implemented to address student complaints. Originally, the focus was on the safety of pedestrians crossing Calhoun Street from the parking lots to the Law School, specifically how many pedestrians were crossing Calhoun and at what times, and what improvements, based on this data, could be justified to improve pedestrian safety. Because the time and labor required to collect the data were not available, it was decided that traffic counters would be placed in each of the three parking lots, and vehicle counts be used as a surrogate for pedestrians, as very few of the students carpooled (less than 5 percent) and the only pedestrians crossing Calhoun regularly were going to or from the Law School.

Because of the unique homogenous characteristics of the Law School students and facilities with respect to age and overall physical condition, the data collected lent itself readily to an expansion of the original pedestrian study to both a trip generation and a parking characteristics study, as the number of external variables were minimized.

STUDY METHODOLOGY

For each lot, there are only two entrances; thus, a counter placed at each entrance will capture all vehicular traffic into and out a particular parking lot. At the 120 m Student Lot, both entrances are located on the north side of the lot on 16th Street, as shown in **Figure 1**. At the Faculty and Staff Lot and the 35 m Student Lot, the entrances are located on the south side of the lot, on 15th and 14th Streets, respectively, as shown in **Figure 1**. Each lot is surrounded by a chain link fence, thus preventing access to the lots at other locations by off-road or four-wheel drive vehicles. The driveways to each lot are gated from approximately 11 PM to 6 AM.

Data was collected over three weeks beginning the last week of October. This period was chosen for two primary reasons. First, the class schedule during this time period is the same from week to week, thereby eliminating variation in the traffic data due to variations in class schedule, which would make it substantially more difficult, if not impossible, to make any reasonable inferences about the data. Second, the ambient lighting during this time period was consistent, as the data collection began after the reversion from Daylight Savings Time to Standard Time, thus minimizing the effect of variation in ambient light on trip patterns and characteristics.

Because of the consistency of the trip patterns and characteristics among each of the weeks during the study period, it was decided that data would be collected over the three week period for each lot separately and then added together to determine the typical week, rather than simultaneously collecting data for all lots for one week to determine the typical week. There were several advantages to this approach. First, data collection was easier, as only two mechanical counting devices were required. Second, this approach enhanced quality control, as bad data for any given lot could be isolated and would not necessitate the recounting of the other lots. Finally, by spreading out the counting over three weeks, date specific fluctuations are mitigated, as such variations can only impact one third of the data collected instead of the entire dataset as would occur under a simultaneous count strategy.

TRIP GENERATION

General

On a typical weekday, 2799 trips either began or terminated in one of the three parking lots. Because of the lack of student housing accommodations within walking distance of the campus and the poor quality of public transportation, the number of students and staff traveling to and from the campus by means of transport other than private motor vehicle is negligible. Furthermore, because of the geographic, employment, and chronological diversity of those traveling to or from campus, the opportunity to carpool is practically nonexistent. Finally, although many students park on the adjacent streets, this is characteristically not the preferred parking location; in other words, the typical student parking on the street will first enter and exit on of the parking lots in search of a spot. The result then, is that, for the most part, the trips counted at the parking lots include the vehicles parking both in the parking lots and on-street. Because of these unique trip characteristics, the number of trips entering and exiting the parking lots is, for all practical purposes, the same as the actual number of trips going to and coming from the campus, and the number of trip-ends at the parking lots is a viable and practical surrogate for the actual number of trip-ends. *(2)*

As mentioned previously, the parking lots are gated and locked between 11 PM and 6 AM. It is reasonable to conclude, then, that there will be no trips into or out of the parking lots during these hours, and that the trips counted between 6 AM and 11 PM when the lots are open and accessible represent all of the daily trips. Thus, for the purposes of this study, a day was considered to be from 6 AM to 11 PM.

Overall trip generation factors were calculated for the following known unit parameters: per student; per faculty/staff; per square meter (foot) of gross building space; per square meter (foot) of classroom space. Because faculty and staff trips are easily discernable from student trips due to the segregated parking lot configuration, trip generation factors for each of the known unit parameters were also calculated for students and for faculty and staff. Thus, for any given known unit parameter, one can calculate the number of trips generated by only the students, only the faculty and staff, or for the entire Law School. These trip generation factors are shown in **Table 1.**

Hourly Distribution of Daily Trips – Variation By Day of the Week

In order to understand how the trips generated by a particular land use interacts with the local roadway network, it is important to know how the generated trips are distributed throughout the day. The understanding of this interaction can be further refined with the knowledge of the trip generation distribution for a particular day of the week, as traffic patterns and characteristics typically vary by day of the week. In other words, traffic characteristics and patterns observed on a Tuesday will be more similar to those observed on another Tuesday of an entirely different week than on a Friday of the same week, as particular traffic characteristics tend to follow a seven-day cyclical pattern rather than a 24-hour one. The hourly distributions of daily trips generated for each of the three categories (overall, faculty/staff, students) stated as a percentage of total daily trips for each weekday are shown in **Table 2**.

Hourly Distribution of Daily Trips on Average Weekday and Spatial Stratification

The hourly distribution of daily trips for an average weekday is shown in **Table 3**. As can be seen from the table, the hourly distribution of daily trips for the average weekday were stratified beyond the stratifications for which trip generation rates were calculated with student trips being stratified by spatial distance. Because the typical student is under the age of 40, healthy, and not handicapped, the physical limitations of the typical student should not affect this student's choice of where to park. In other words, because of the fitness of the typical Texas Wesleyan law student, physical limitations have a minimal impact on where a student chooses to park. Given two equal parking facilities that are only different in their spatial distance to the facility that they serve, and no limitations on the ability of those using these two equal lots, then if spatial distance does not make a difference in parking preference, the trip generation rates for these two facilities will be the same. Thus, this additional stratification provides insight into whether or not spatial distance does make a difference in parking preference, by illuminating whether or not the trip generation rates and trip distribution patterns for the two identical student lots is the same or different.

OBSERVATIONS

Trip Generation

If one is only concerned about traffic volumes and traffic flow, then the best-case scenario for a commuter campus like Texas Wesleyan School of Law is a trip generation rate of 2.00 trips per capita. Under this scenario, every person arrives, conducts his or her business, and leaves only when all business is completed. In other words, every person arrives only once and leaves only once.

Of the three per capita stratifications for which trip generation rates were calculated (**Table 1**), the per student rate, 2.73, is closest to the ideal of 2.0. The low value of the student trip generation rate indicates that most of the students arrive on campus and stay on campus until all activities (classes, homework, research, meetings, etc.) are finished. This, however, is not unexpected for a campus such as Texas Wesleyan School of Law where the overwhelming majority of students must travel in excess of 20 minutes to get to the campus, as such long trip lengths discourage multiple trips. First hand observations reveal that a large number of students stay on campus during non-class periods, even lunch breaks.

In contrast to the relatively low per capita student trip generation rate is the per capita faculty and staff trip generation rate of 13.843, which is more than quintuple the student rate. Unlike the students, the faculty and staff do not stay on campus all day; rather, the typical faculty member tends to make multiple trips to and from campus throughout the day. Thus, although this number at first blush this rate seems high, given the facts that many of the faculty are practicing attorneys who must attend to clients when not teaching and that the Law School campus of Texas Wesleyan University is several miles away from the main campus of the University, it is reasonable that the typical faculty or staff member would arrive at and leave from the Law School frequently.

Stratified Daily Trip Distribution by Day of Week

The daily distribution for all three per capita stratifications varies by the day of the week, as can be seen in **Table 2**. For students, the peak hour on Monday, Wednesday, and Friday occurs at 8 AM and represents over 20% of all daily trips; on Tuesday and Thursday, the peak hour occurs at 9 AM and represents over 10 % of all daily trips. On Monday and Wednesday trips are more concentrated than on Tuesday and Thursday, when trips are more evenly distributed throughout the day. For example, on Monday, 42% of all trips occur between 6 AM and 12 PM; on Tuesday, only 36% percent of trips occur during this time period. On Friday, the student trips are even more concentrated, as 69% of all student trips occur during this time period. This is logical given that few activities are conducted on Friday afternoon or evening.

Staff and faculty daily trip distribution patterns exhibit some of the same characteristics as the student ones. Like student trips, faculty and staff trip distributions are more concentrated and have a higher magnitude peak hour (as a percentage of total daily trips) on Monday and Wednesday, and are more evenly distributed with peak hours of lesser magnitude on Tuesday and Thursday. Interestingly, these peak hours are not occurring simultaneous with the student peak hours on Monday through Thursday, occurring at 9 AM on Monday and Wednesday and at 5 PM on Tuesday and Thursday. Despite these similarities, the trips are consistently more evenly distributed throughout the day for faculty and staff than for students. This is most noticeable on Friday, when the peak hour, 8 AM, is less, as a percentage of total daily trips, than the peak hour on Monday, Tuesday, and Wednesday, and when the percentage of daily trips occurring prior to 12 PM is, for all practical purposes, the same as it is on Monday and Wednesday.

Although the overall daily trip distribution is a synthesis of the student daily trip distribution and the faculty and staff trip distribution, the overall distribution tends to follow the student distribution closer. On Thursday and Friday, the top five daily distribution hours and the order of their magnitude for the overall and student daily distributions are the same. On Tuesday, although the top five hours for the overall and student distributions are the same, the order of magnitude is not, with 9 AM being the highest for students and the second highest overall, and 5 PM being the highest overall and the fourth highest for students. This change in order of magnitude of the five highest hours between the overall distribution and the student distribution is the result of the influence of the faculty and staff distribution, which like the overall distribution, has its peak at 5 PM. The influences of the student and faculty and staff distributions are the most balanced on Monday and Wednesday. On both days, the top five distribution hours are not the same as all of the top five hours for either student distribution or faculty and staff distribution, even though they coincide with a top five hour from either. For example, on Monday four of the overall peak hours (8 AM, 9 AM, 11 AM, and 5 PM) coincide with student peaks, while three coincide with faculty and staff peaks (8 AM, 9 AM, and 9 PM); on Wednesday, on the other hand, the situation is reversed and four of the overall peak hours coincide with faculty and staff peak hours (8 AM, 9 AM, 5 PM, and 7 PM), and three coincide with student peak hours (8 AM, 9 AM, and 11 AM).

Stratified Daily Trip Distribution for Average Weekday

Because of the stronger influence of student trip distribution, especially on Thursdays and Friday, the overall synthesized trip distribution for the typical average weekday more closely resembles the student distribution than the faculty and staff distribution. In fact, the top five distribution hours overall (8 AM, 9 AM, 5 PM, 2 PM, and 11 AM) coincide with the top five distribution hours for students (8 AM, 9 AM, 2 PM, 11 AM, and 5 PM), although not in the same magnitude order. The difference in the magnitude order is the influence of the faculty and staff distribution, where 5 PM is the second highest hour and neither 2 PM nor 11 AM are in the top five faculty hours.

An interesting phenomenon that can be readily observed from **Table 3** is the significant variation in daily trip distribution between the two student lots. The peak hours for the two lots do not generally correspond, with respect to both when they occur during the day and their magnitude. Whereas for the 35 m lot the five peak hours occur throughout the day (the earliest at 8 AM; the latest at 9 PM), for the 120 m lot all five peak hours occur during a much more abbreviated period, between 8 AM and 2 PM. For the 35 m lot, the five peak hours constitute just under 49% of all daily trips; for the 120 m lot, these peak hours constitute just over 72% of all daily trips. The most striking contrast occurs after 4 PM. In the 35 m lot, just under 40% of all daily trips occur after 4 PM; in contrast, only 11% of daily trips in the 120 m lot occur during this time period. Because of these stark differences, it is important to take into account parking facility location in order to get the most accurate trip generation simulation.

Spatial Stratification and Parking Preferences

As stated previously, because of the homogeneity of the student population (healthy and under 40) and the physical characteristics of the student parking facilities (exclusive, free, proximate, and accessible), the data collected can provide some useful insight into parking preferences and parking demand assumptions. When analyzing parking demand and preference characteristics for a large development (such as a school), it has characteristically been reasonably assumed that all spaces with an approximately equal proximity, cost, and accessibility will be equally attractive to a motorist, and will have the same daily trip generation and time distribution characteristics. This data reveals that this assumption may not be correct.

Although all the student spaces on campus are free, easily accessible, and within a five-minute walk of the building, there is a preference for the closer lot, especially in the evening. Using the trip generation as a surrogate for demand, the demand to park in the 35 m lot is twice as much as the 120 m one. **Table 4** shows that with the exception of the 9 AM hour, the 35 m lot is always the preferred lot. Overall, twice as many students use the 35 m lot as use the 120 m one. In the evening, the disparity is much worse, with 90% of students choosing to park in the closer lot.

There are several explanations for these phenomena. Students interviewed indicated that they always go to the 35 m lot first, and if they are unable to find a space park on-street at a metered space, rather than park at the 120 m lot because they believe that it is more convenient and saves time. In actuality, these perceptions are false as more time is required to drive into and out of the 35 m lot and then search for an on-street metered space than to walk from the 120 m lot.

Perceived security is a significant issue, especially at night, and use of the 120 m lot results in an increased exposure, and thus vulnerability, to an attack on one's person. With respect to the 9 AM anomaly, at this time of the day the 35 m lot is, for all practical purposes, full, students are in a hurry to get to morning sessions, and these students know that the 35 m lot is full and choose to park in the 120 m lot and be on time rather than take their chances in the 35 m lot. However, it should be noted that when students perceived that the 35 m lot may not be full or did not have time constraints, they preferred to park in the closer lot.

CONCLUSIONS

Trip Generation

The trip generation factors generated are a useful planning tool for determining the overall traffic impact and daily distribution characteristics of a facility similar to this one, namely an urban commuter college. Although a school of law, Texas Wesleyan School of Law is more similar to an urban commuter college that offers both day and evening classes and which has no on- or near-campus student housing than to a traditional law school, as the latter is typically located on a larger campus that does have on- or near-campus student housing and does not offer evening classes. This information helps provide insight into the relationship between various physical (e.g., floor space) and non-physical parameters (e.g., student enrollment) and the impact of changing these parameters on the transportation network.

Although the average trip generation rates are useful for planning, they should be used judiciously. As the data clearly indicate that trip generation distribution patterns fluctuate greatly from day to day, these fluctuations should be considered when analyzing the impact of changes on the adjacent transportation network for a particular time period during the day, such as peak hour. By providing valuable insight into daily trip patterns, the daily trip distributions help in focusing a traffic operational study and impact analysis on the most critical periods.

Parking Preference

A study by *St. Jacques, Schrader, and Shahi (3)* of the parking characteristics on the campus of Baylor University revealed that for large spatial distances between parking facilities (over 500 m), parking utilization varies, with closer facilities being utilized much more extensively than farther ones. However, because of the size of the geographical area being studied, variations of utilization for small differences in spatial distance between facilities (100 m) could not be ascertained. This study, then, provides insight into the special sensitivity of parking preference and utilization. In this particular case, a spatial difference of less than 100 m yielded a noticeable and significant difference in parking demand and utilization. Thus, it is imperative that even small, seemingly inconsequential differences in parking lots must be considered when comparing the relative attractiveness of parking facilities. For estimating purposes, the results of this particular study suggest the following relationship:

Desirability of farther lot = 1/(Distance to farther lot/Distance to closer lot)

For this study, the ratio of the distance to the farther lot to the distance to the closer lot is 3.43, yielding a desirability for the farther lot of 29.2%, which is within 10% of the measured desirability of 32.3%, an acceptable deviation.

An interesting issue that arises from this study is the sensitivity of pricing on parking preference. *TCRP Report 95* states, "research appears to corroborate conventional wisdom that parking demand, as measured strictly by number of cars parking (parking facility entries), in inelastic with respect to price." *(4, p. 13-4)* The parking demand characteristics exhibited at the Law School concur with that conclusion. Rather than use the 120 m free lot, numerous law students were willing to periodically feed the meters at an approximate cost of a dollar a day, or approximately $100 a semester, to park only a few meters closer to the Law School building. The students interviewed expressed that the metered spaces were more desirable than the nearby free lot, despite the cost and the inconvenience of having to walk back to the space several times a day to feed the meter, because the metered spaces were perceived to be safer and more convenient. This perception is false, as the converse is true; by having to go out to a meter several times a day, a student parking at a meter in lieu of the farther free lot is actually spending more time exposed to external danger than if that same student would have parked at the farther free lot and only had to walk to and from the lot once. It could be reasonably concluded, then, that perceived safety and perceived convenience are a larger factor in parking preference than cost.

FURTHER STUDY

This is just one study of one urban campus, and while the information is useful in providing general insight into trip and parking characteristics, it should by no means used as a substitute for local data. Because of the noticeable differences in trip distribution characteristics depending on the day of the week, further research needs to be conducted into the sensitivity of trip generation with respect to class schedules, meetings, and other student activities, and if trip generation rates and daily trip distribution patterns can be altered through non-capital means, such as scheduling changes. With respect to parking preference and utilization, the relationship between spatial distance and parking preference needs to be further refined to yield greater precision and accuracy. Finally, the sensitivity of parking choice to cost and especially to perceived safety and convenience should be investigated in greater detail.

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FIGURES

TABLES

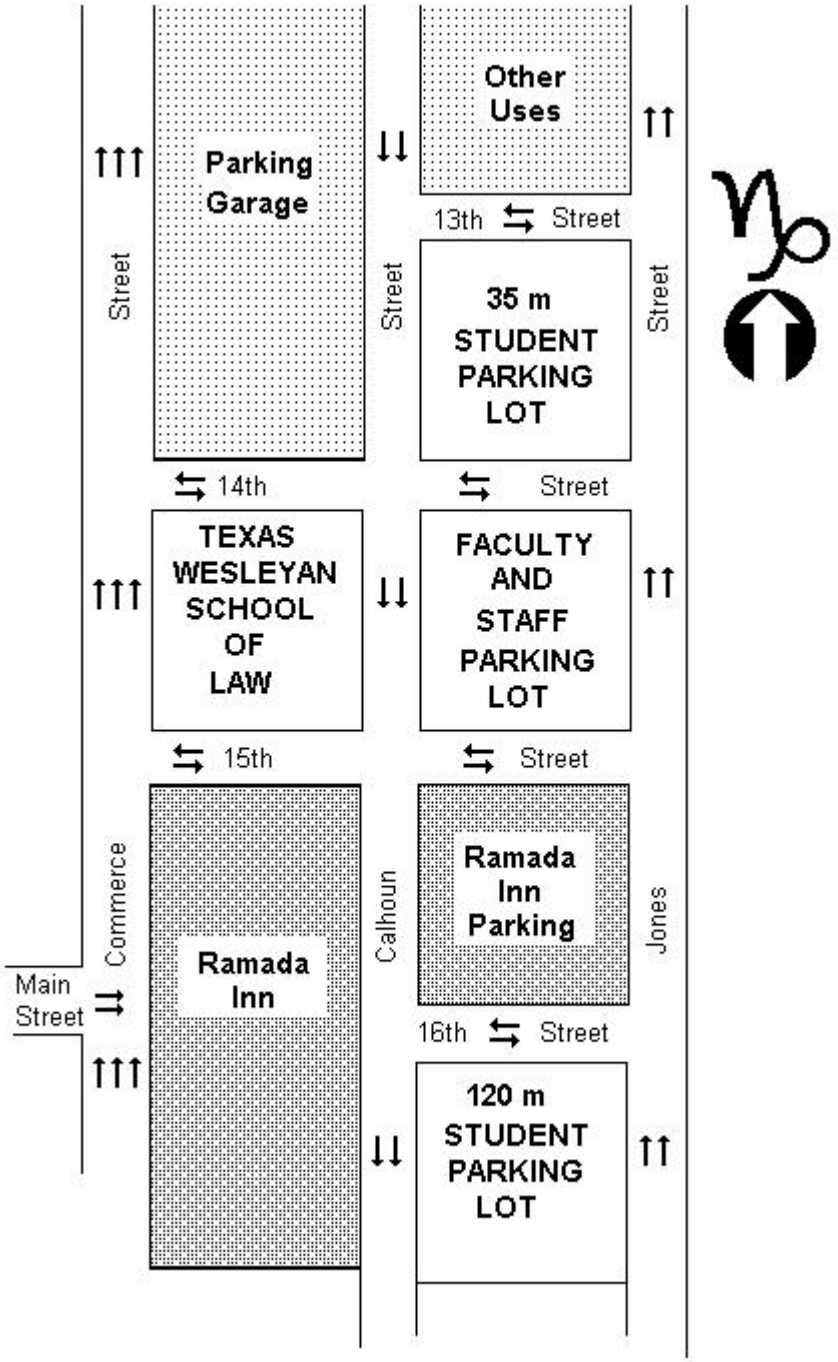

FIGURE 1 Configuration of parking lots and adjacent streets.

TABLE 1 Average Weekday Trip Generation Rates

	KNOWN CHARACTERISTIC UNIT (PARAMETER)			
DAILY TRIPS GENERATED BY	*PER STUDENT*	*PER STAFF*	*PER SQUARE METER (sq. ft.) GROSS FLOOR SPACE*	*PER SQUARE METER (sq. ft.) OF CLASSROOM*
Student	2.731	26.143	0.164 (0.015)	1.231 (0.114)
Staff	1.446	13.843	0.087 (0.008)	0.652 (0.061)
All	4.178	39.986	0.251 (0.023)	1.883 (0.175)

TABLE 2 Percentage of Daily Trips Occurring in Each Hour of the Day for Each Weekday

	MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY		
HOUR	*Fclty. and Staff*	*Stdnt.*	*All*	*Fclty. and Staff*	*Stdnt.*	*All*	*Fclty. and Staff*	*Stdnt.*	*All*	*Fclty. and Staff*	*Stdnt.*	*All*	*Fclty. and Staff*	*Stdnt.*	*All*
6 AM	1.6	0.2	0.7	0.2	0.3	0.3	0.5	0.5	0.5	0.4	0.6	0.5	1.5	1.9	1.8
7 AM	2.5	2.9	2.8	2.8	3.2	3.0	8.6	4.8	6.2	2.0	2.0	2.0	4.1	5.2	4.8
8 AM	8.1	21.6	16.7	9.4	10.7	10.3	8.0	22.6	17.1	9.6	9.2	9.3	15.0	29.6	24.9
9 AM	16.8	7.5	10.8	7.1	13.0	11.1	19.1	7.2	11.6	6.8	15.2	12.4	10.3	10.9	10.7
10 AM	6.0	1.5	3.1	4.4	4.6	4.6	5.4	4.0	4.5	4.7	6.8	6.1	6.2	5.0	5.4
11 AM	6.4	8.7	7.9	2.9	4.1	3.7	3.6	8.6	6.7	5.2	4.9	5.0	12.1	15.9	14.7
12 PM	4.8	7.1	6.2	4.2	4.0	4.1	3.2	6.6	5.3	8.3	6.9	7.4	8.4	5.6	6.5
1 PM	5.6	4.6	5.0	4.3	6.3	5.6	5.2	5.7	5.5	5.0	5.9	5.6	12.5	6.6	8.5
2 PM	5.8	6.3	6.1	6.1	9.9	8.6	4.9	6.7	6.0	5.9	13.4	10.9	7.9	6.2	6.8
3 PM	3.5	5.1	4.5	2.3	6.0	4.8	2.9	4.9	4.1	3.8	3.2	3.4	7.1	2.7	4.1
4 PM	4.2	7.8	6.5	7.6	7.8	7.7	4.8	5.4	5.2	6.7	6.5	6.6	3.4	2.9	3.1
5 PM	7.0	7.4	7.3	15.8	9.0	11.2	8.9	5.2	6.5	12.9	7.2	9.2	7.7	2.5	4.1
6 PM	9.6	4.6	6.4	12.9	5.0	7.6	5.7	4.6	5.0	10.2	5.4	7.0	2.1	1.0	1.3
7 PM	7.7	5.1	6.0	5.7	5.6	5.6	9.9	4.5	6.5	5.7	4.3	4.8	0.7	2.5	1.9
8 PM	1.5	1.6	1.5	2.3	0.9	1.3	1.9	2.0	1.9	3.5	1.7	2.3	0.7	0.6	0.7
9 PM	8.0	6.7	7.2	10.0	6.4	7.6	6.4	6.0	6.1	7.4	5.8	6.4	0.0	0.3	0.2
10 PM	0.8	1.6	1.3	2.1	3.3	2.9	1.0	1.2	1.1	1.8	0.9	1.2	0.4	0.5	0.5

TABLE 3 Hourly Distribution of Typical Weekday Daily Trips for All Stratifications

PERCENT OF AVERAGE (TYPICAL) WEEKDAY DAILY TRIPS

HOUR	*120 m Student Lot*	*35 m Student Lot*	**All Students**	*Faculty & Staff*	**ALL**
6 AM	0.5	0.7	**0.6**	0.8	**0.7**
7 AM	0.7	4.7	**3.4**	4.1	**3.7**
8 AM	19.0	16.6	**17.4**	9.5	**14.6**
9 AM	24.9	4.3	**11.0**	12.3	**11.4**
10 AM	5.6	3.9	**4.5**	5.2	**4.7**
11 AM	11.3	5.8	**7.6**	5.3	**6.8**
12 PM	7.5	5.4	**6.0**	5.5	**5.9**
1 PM	5.9	5.7	**5.8**	5.8	**5.8**
2 PM	10.2	8.3	**8.9**	5.9	**7.9**
3 PM	3.5	5.0	**4.5**	3.5	**4.2**
4 PM	3.2	7.8	**6.3**	5.6	**6.1**
5 PM	2.9	8.4	**6.6**	10.8	**8.1**
6 PM	1.6	5.8	**4.4**	8.6	**5.9**
7 PM	0.9	6.2	**4.5**	6.6	**5.2**
8 PM	0.3	1.9	**1.4**	2.1	**1.7**
9 PM	0.8	7.7	**5.5**	7.0	**6.0**
10 PM	1.3	1.7	**1.6**	1.3	**1.5**

TABLE 4 Student Parking Preference by Time of Day for Typical Weekday

	PERCENT OF STUDENTS PREFERRING LOT	
HOUR	*120 m Student Lot*	*35 m Student Lot*
6 AM	26.8	73.2
7 AM	7.0	93.0
8 AM	35.2	64.8
9 AM	73.3	26.7
10 AM	40.2	59.8
11 AM	48.1	51.9
12 AM	39.8	60.2
1 PM	32.8	67.2
2 PM	37.0	63.0
3 PM	25.0	75.0
4 PM	16.4	83.6
5 PM	14.2	85.8
6 PM	11.6	88.4
7 PM	6.7	93.3
8 PM	7.8	92.2
9 PM	4.6	95.4
10 PM	26.2	73.8
DAY	*32.3*	*67.7*