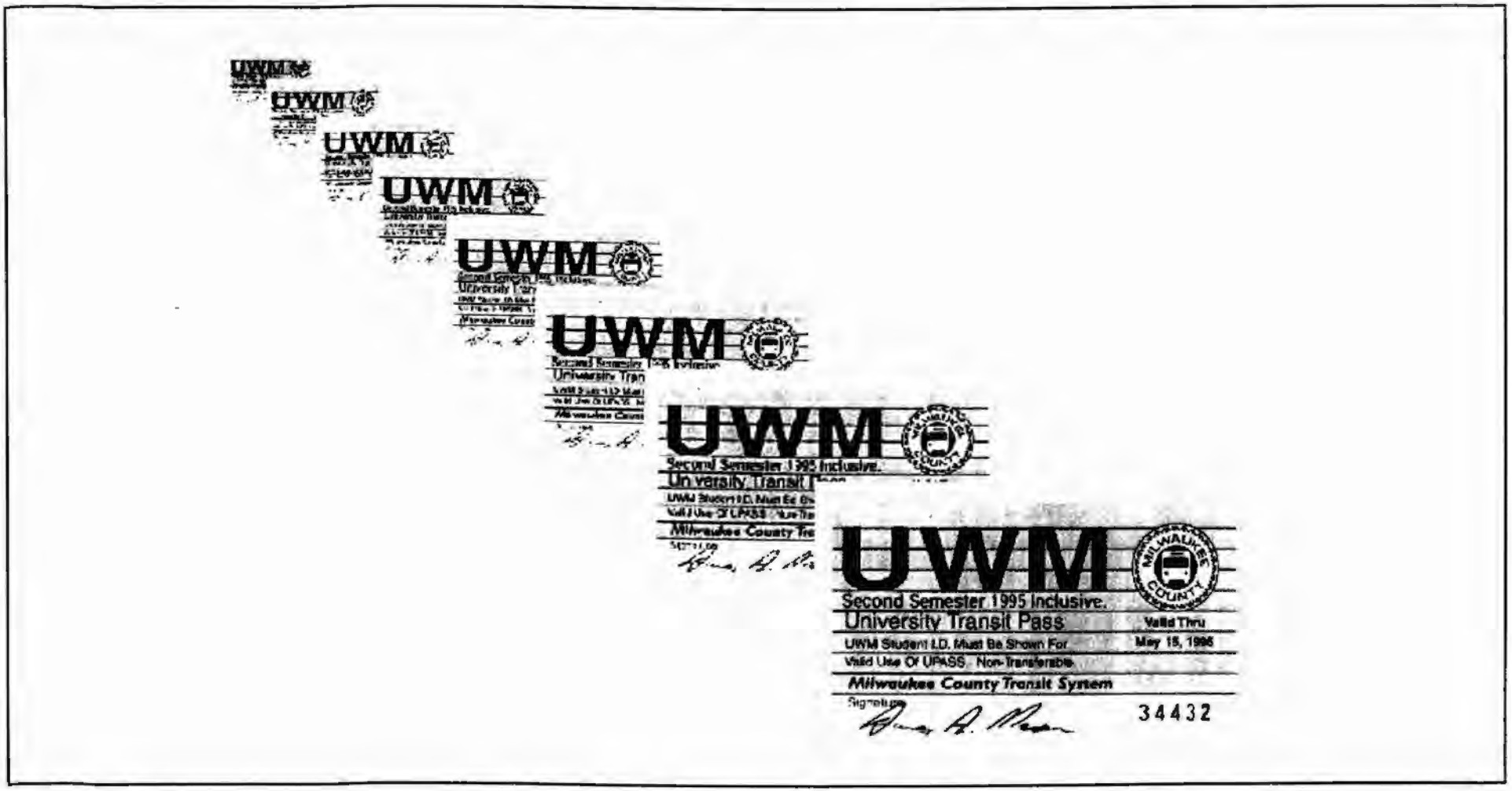
U.S. Department of Transportation

An Evaluation of an Innovative Transit Pass Program: The UPASS

March 1996



An Evaluation of an Innovative Transit Pass Program: The UPASS

Final Report
March 1996

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Executive Summary

This report evaluates the UPASS transit pass program at The University of Wisconsin-Milwaukee (UWM). UPASS is an innovative transit program developed by the University and the Milwaukee County Transit System (MCTS) in which all UWM students receive an unlimited transit pass as part of their tuition. The pass can be used anytime, anywhere, for any trip purpose throughout Milwaukee County without any additional fare required.

The UPASS program has the potential to serve as model for other Universities as well as large employers as a possible Transportation Demand Management (TDM) strategy. The program could have significant impact on transit usage and ultimately lead to changes in land use patterns. The findings indicate that UPASS has been effective in reducing vehicle trips, increasing transit ridership, and reducing the impact of the automobile on the environment. The main findings of this research include the following.

UPASS

Use it...

- **ANYWHERE**
- **ANYTIME**
- **ANY TRIP PURPOSE**

1. The UPASS program has influenced modal shifts.

    - Students who drive to UWM declined from a rate of 54% prior to UPASS to a rate between 38% to 41% after the implementation of UPASS. Students choosing to ride MCTS increased from 12% prior to UPASS to a rate of 25% to 26% since the implementation of UPASS.

2. The UPASS program has increased transit ridership to UWM.

    - MCTS on-board counts show between a 31% and 45% increase in transit ridership compared to counts conducted prior to the implementation of the UPASS. Survey findings show approximately a 35% increase in ridership.

3. The UPASS program has increased transit ridership for trips to work, to shopping, and to other locations.

    - Transit mode split for work trips by survey respondents showed nearly a doubling over pre-UPASS semesters from a rate of 8% to approximately 15%. Surveys indicate a 17% to 18% increase in transit ridership for these trip purposes compared to pre-UPASS ridership.

4. The UPASS program has attracted new riders to transit and increased ridership levels of regular transit users.

    - Approximately 13% to 14% of students riding transit to UWM after the implementation of UPASS were new transit users. Approximately 9% to 10% of students using UPASS for work trips were new users.

5. Express transit routes serving UWM experienced the majority of the increase in transit ridership.

    - MCTS on-board ridership counts indicate express service to UWM showed a 75% to 136% increase compared to ridership counts conducted prior to the UPASS program.

6. Close proximity to transit service appears to be an important factor in a persons decision to use transit.

    - Approximately 57% of students living near transit indicated using transit as their normal mode of transportation to UWM compared to only 12% for students who did not live near transit.

7. Freshman students in particular showed high rates of transit usage compared to other students.

    - 44% of freshman indicate using UPASS at least one or more times per week for trips to UWM during the Fall 1994. Nearly 48% indicate using the pass one or more times per week during the Spring 1995. Freshman living in Milwaukee County in particular showed the highest transit usage rate at 70% during the Spring 1995 semester.

8. The UPASS had a minimal immediate affect on housing locations and job access.

    - Approximately 5% of Fall 1994 survey respondents indicated UPASS allowed them to find less expensive housing while 5% of Spring 1995 survey respondents indicated they planned to move to a location with better transit service. Another 5% of survey respondents indicate UPASS allowed them to find employment.

9. The UPASS program reduced vehicle trips to the university which resulted in a reduction in emissions, fuel consumption, and resulted in a dollar savings to students.

    - The UPASS program resulted in 221,055 fewer vehicle trips made to UWM during the 1994-95 academic school year. This resulted in a reduction of 5,084,265 VMT for trips to UWM, a savings of 242,108 gallons of fuel, and a savings of $295,371.76 in fuel costs. The program also reduced emissions by 20% for trips to UWM and by approximately one-tenth of one percent for the entire Southeastern Wisconsin region.

10. Students perceive the parking situation at the university has improved since the implementation of the UPASS program.

    - 19% of students indicated parking on-campus was easier since the implementation of UPASS while 16% indicated parking off-campus was easier. 24% of students who drove prior to the implementation of UPASS, and who continue to drive, indicate they find it easier to locate parking near campus.

11. Student support for UPASS was extremely high during the first year of the program.

    - 90.4% of students from the Fall 1994 survey and 86.9% from the Spring 1995 survey indicated they either favor or strongly favor the UPASS program. Frequent users of UPASS, as well as non-users, indicated the program should continue in future semesters. Over 90% of survey respondents from the Fall 1994 and Spring 1995 survey said the program should continue.

12. Focus group discussions and survey results show that UPASS has the ability to attract and retain students at UWM.

    - Participants in focus group discussions mentioned the UPASS could attract potential students to UWM. In particular, participants felt freshman would find the pass the most beneficial since they often do not have access to an automobile. Spring 1995 survey results indicate 15% of respondents said the UPASS would have a major impact on their decision to attend UWM in future semesters while 21% indicated the UPASS would have a minor impact.

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Acknowledgments

This project was conducted under the sponsorship of a research contract from the Wisconsin Department of Transportation. The opinions expressed are those of the authors and not necessarily those of the project sponsor.

Many organizations and people provided useful input into this report, either directly or through review of our work. We would like to thank Sue Hill and Toya Nelson from the Wisconsin Department of Transportation, Anita Gulotta-Connelly and Joe Caruso of the Milwaukee County Transit System, and Jim Marsho from the University of Wisconsin-Milwaukee Parking and Transit Office. We would also like to acknowledge Jim Champley of Guidepath Research who was instrumental in preparing and conducting focus group discussion sessions. We would also like to thank Linda Rupp for her assistance throughout the duration of this project.

Chapter I

INTRODUCTION

Introduction. In recent years public transit systems throughout the United States have been faced with numerous problems including reductions in Federal and State funding and a continuing decline in transit ridership. Specifically, transit companies face the challenge of trying to reverse the trend of declining ridership while avoiding the need to raise fares and cut service. In order for public transit to remain a vital component of our transportation systems, it is necessary for transit systems to explore new solutions which keep public transit a viable and competitive mode of transportation compared to the automobile.

Federal requirements, such as the Clean Air Act Amendment of 1990 (CAAA) and the Intermodal Surface Transportation Efficiency Act (ISTEA), have placed an increased emphasis on public transit. Specifically, the CAAA requires large employers to examine alternate commuting methods for their employees through reducing the number of single occupancy vehicles (SOV) traveling to the work place. Faced with this burden, employers should consider public transit as an alternative to solving their commuting problems.

"Its' a free bus pass you can use all semester...anywhere, anytime."

- a frequent UPASS user describing the program

One innovative technique which has the potential to help both the transit system and large employers is the implementation of transit pass programs. The employer based transit pass offers users a deeply discounted fare while providing the transit system with guaranteed revenue. This technique of offering deeply discounted transit pass programs may provide a way to offset problems facing both transit systems and large employers.

This report examines a deeply discounted transit program at The University of Wisconsin-Milwaukee, the UPASS. While this is an university based program, the concept has the potential to serve as a model for other universities, institutions, and employers who are considering a transit pass program. This report examines the impact the UPASS program had on mode choice, transit ridership, and on other travel related issues. The report also includes a chapter which discusses issues which could be beneficial in transferring the UPASS concept to an employer based setting.

Project Statement. The University of Wisconsin-Milwaukee (UWM), along with the Milwaukee County Transit System (MCTS), have developed an innovative transit pass program which provides UWM students with unlimited use of the County transit system. The UPASS program, implemented in the Fall 1994 semester, provides students an alternate mode of transportation to the University as well as any other location within the transit service boundaries. Students who attend class on the Kenwood campus, are registered for at least one credit, and pay segregated fees receive the UPASS.

The UPASS program provides students with unlimited travel on any MCTS route at anytime, anywhere, for any trip purpose with no additional fare. Transit service to UWM was also expanded during the first semester of the program with the addition of two express transit routes. It is the hope of University administration that the transit pass program will encourage students to leave their automobiles at home and take advantage of the free transit service.

The program has the potential to provide community-wide advantages of reducing traffic congestion, improving air quality, and reducing tax dollars spent on the construction of parking lots and garages. Such a transit program could be applied to a variety of employers and institutions which could lead to significant changes in transit use.

Objectives of Study. The objectives of this study include the following:

1. Determine the impact of the UPASS program on transit ridership.

    - What has been the impact on transit ridership?
    - How has the program effected general transit use patterns of students?
    - Is the current transit service adequate or are service changes needed?
    - Is the $29 fee per student sufficient in covering the cost of the program?

2. Determine the impact on traffic congestion, parking, and other transportation related issues.

    - Has there been a reduction in vehicle trips to the university?
    - Has there been a reduction in parking demand around campus?
    - What has been the impact on travel patterns of students who live greater distances from the university?
    - What has been the impact on energy consumption and vehicle emissions?

3. Determine the reasons for shifts in travel behavior.

    - How has the program effected travel patterns of various segments of the student population?
    - Who has made a shift to transit?
    - What are the reasons for making the shift to transit?
    - What are the reasons students are not making a shift to transit?
    - What changes or improvements need to occur to increase transit ridership?

4. Determine whether the results can be transferred to other groups.

    - Can a program developed to serve a population of students be applied to employers, employees, and other groups?
    - How can the results from this study be used to develop similar programs elsewhere?

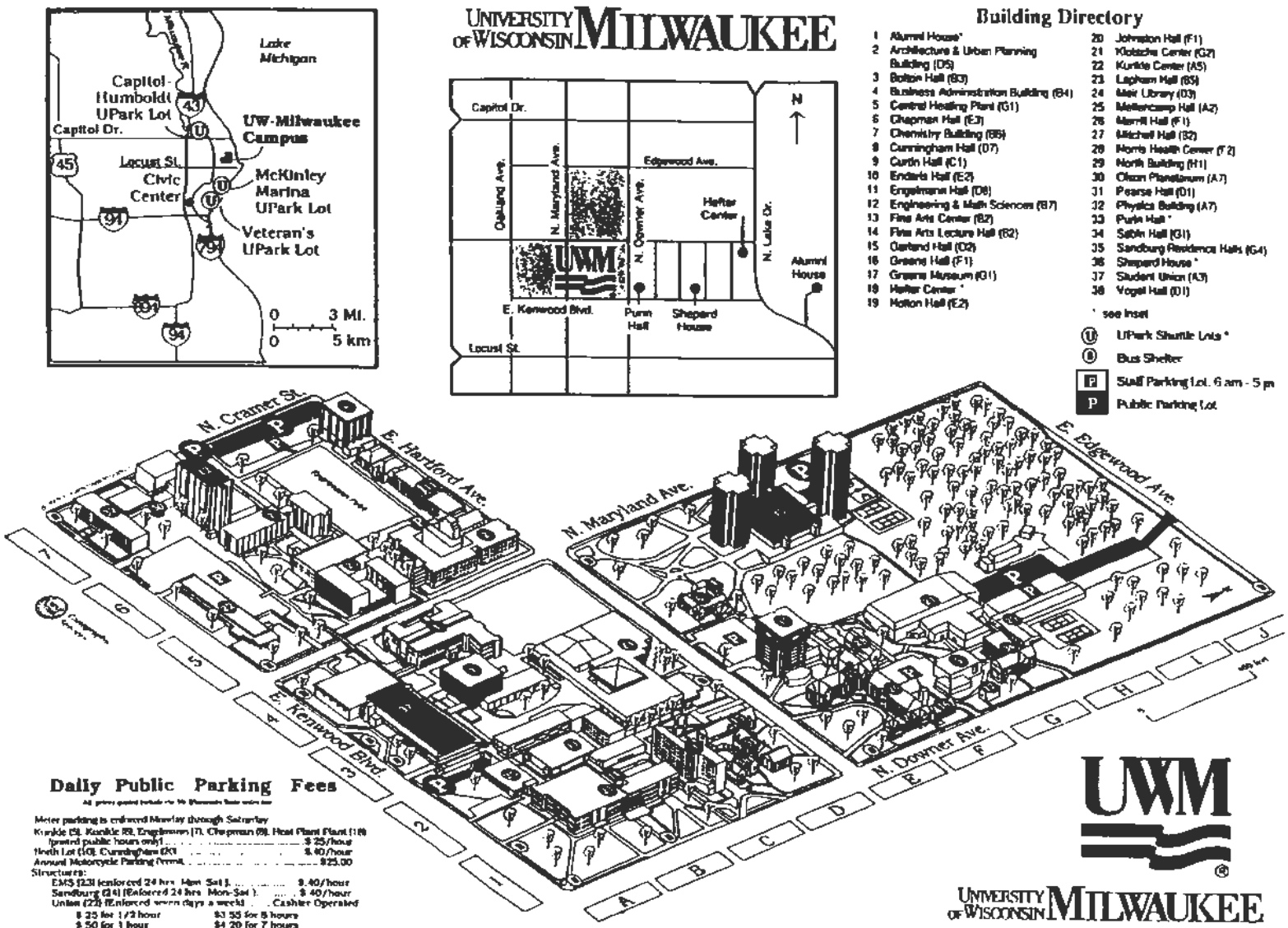
Campus Background. The University of Wisconsin-Milwaukee (UWM) is located in the eastern half of Milwaukee County within 1 mile of Lake Michigan (Figure 1-1). The campus is well serviced by transit including numerous MCTS routes and a University shuttlebus service. MCTS currently operates 11 routes serving the UWM campus with 5 routes providing express service. The majority of the MCTS service operates during the morning peak and mid-afternoon with express service ending at approximately 5:30 PM.

The University also offers a shuttlebus service which allows students to park at any one of three satellite parking locations approximately 3 to 5 miles from campus. Students may park at these locations free of charge and ride a shuttlebus to campus. The service operates during weekdays with buses running from 5:30 AM to approximately 9:30 PM.

Enrollment over recent years has ranged between 20,000 to 24,000 students. Approximately 2,100 students live in the on-campus dormitories while a large percentage of the student population live in the surrounding neighborhood. A high percentage of students commute to campus daily with the primary mode of transportation being driving alone.

Due to the large number of commuters the campus and surrounding neighborhood has constantly been faced with severe parking problems. Commuters traveling to campus often spend considerable time searching for parking and at times find it difficult to locate spaces within a few blocks from campus. Other students choose to wait in line as long as 20 to 30 minutes for a parking space to open in the Union parking structure. It is the hope of University officials that the UPASS program will encourage students to forego the hassles of driving to UWM and shift to transit as their primary mode of transportation. Should this shift occur, it could result in fewer vehicle trips traveling to the area and thus alleviate parking problems in the surrounding neighborhood.

Figure 1-1 The University of Wisconsin-Milwaukee



Background Information. Similar transit pass programs have been implemented previously at other universities and corporations. One of the more recent university programs was implemented in 1991 at the University of Washington. The program offered reduced transit prices to all students and faculty. After one year of operation, vehicle trips to the university were down by 16% over the previous year while transit ridership showed an increase of 35%. During this period, parking lot use on the campus decreased from 91% capacity to 78% capacity.[1]

Another successful transit program is the ECO pass program implemented by the Denver Regional Transportation District. The ECO pass program is an employer based program which also includes students at the University of Colorado. Employers may purchase transit passes for their employees as a tax-free benefit. The cost of the passes varies based upon the company size and the level of transit service required. Estimates show a typical transit commuter may save as much as $1200 in cash fare annually while helping to reduce traffic congestion, air pollution, and vehicle miles traveled.[2]

Finally, the concept of offering discounted or reduced fares at UWM is not new. In 1974, the University implemented the UBUS program which offered students reduced fares on transit routes serving the University. The program also increased transit service by providing more direct routes to UWM. The program was highly successful in its first years of operation until the late 1970's when increasing costs and a reduction in State subsidy forced the University to cut back on the services provided. Today, it is hoped the UPASS program will be as successful as the UBUS program and reduce vehicle trips to UWM, increase student transit ridership, and improve the parking situation in the surrounding neighborhood.

History of the UPASS Program. The concept of the UPASS program grew out of a meeting in the Spring 1991 between the MCTS Director of Operations and the UWM

[1] Transportation Research Record 1404, "U-PASS: A Model Transportation Management Program That Works," Michael E. Williams and Kathleen L. Petrait.
[2] Case Study of the Denver Regional Transportation District ECO Pass Program, Office of Mobility Enhancement, November 1993.

Director of Parking and Transit. The purpose of the meeting was to discuss the declining trend in transit ridership among UWM students and what might be done to reverse this trend. Both individuals were familiar with the positive effects that deeply discounted bus fares and improved (express) bus services had on UWM student transit use in the mid-70's.

1991 - 1993
Discussion about the UPASS concept between the University and MCTS.

Out of these discussions came the idea of instituting a semester-long transit pass. Both MCTS and UWM officials were familiar with other universities in the Country that had instituted similar "UPASS" programs for their students namely, the University of Illinois and the University of Washington.

One of the basic features of the UWM UPASS program they envisioned was a program that required all students to pay whether they intended to use the UPASS or not. It was felt that this would provide a major incentive for maximizing the most number of users while keeping the fee required to fund the program from each student to a minimum. Another important feature was the addition of two new bus routes and expanded bus schedules (service improvements) where service deficiencies were found. A simple method of easily and quickly distributing the UPASS to all eligible students was also an important element of the program.

1993
Student referendums which show significant support for the UPASS program.

1994
Implementation of UPASS in the Fall 1994 semester.

As the concept of the UPASS program was being fully developed, discussions were held with upper level University administrators and the leaders of Student Government. These discussions were quite complicated and sensitive and spanned a couple of years. Eventually, student government leadership adopted the transit program as a means to deal with the persistent parking problems facing UWM. University administration also signaled they would support what student leaders could demonstrate the student body was willing to support.

At least two separate referendums were held showing significant general student support for the UPASS program. Finally, after a great deal of effort, the UPASS program was implemented for the 1994-95 academic school year--three years after the idea was first considered.

CONTENTS OF REPORT

Contents of Report. This report contains eleven chapters. Chapter 1 has provided a background regarding the University and the UPASS program. Chapter 2 presents an overview of the study which was conducted to evaluate the program. Following Chapters 1 and 2, a summary of findings is provided highlighting the main points of each chapter.

Chapter 3 of this report contains general background data regarding student classification, student class time, student credit load, and student employment. Survey findings are compared to the UWM student population to determine the validity of the survey samples to see if they are representative of the UWM population.

Chapter 4 contains information regarding student travel patterns. Included in this chapter is origin and destination data, trip making patterns, parking data, and student arrival/departure times on-campus.

Chapter 5 examines student attitudes and opinions regarding various transportation services. Survey respondents were asked to rate general attributes of a transportation system, MCTS, UPASS, parking at UWM, and the UPARK shuttlebus service.

Chapter 6 examines the issue of student mode choice for trips to UWM, to work, to shopping, and to other locations. Mode choice prior to the UPASS program is compared to mode choice after the implementation of UPASS. The chapter also examines the issue of market segmentation and identifies frequent users of UPASS.

Chapter 7 examines how students felt about a transit pass prior to the implementation of UPASS. The chapter examines the anticipated impact of a transit pass on transit ridership by gender, student classification, class time, credit load, employment status, and distance students live from UWM.

Chapter 8 examines the impact of UPASS on transit ridership. MCTS ridership counts are presented and compared to University survey results. Analysis of who is using the UPASS and for what trip purposes is also examined.

Chapter 9 builds upon data from previous chapters to measure the UPASS impact on diverting vehicle trips away from campus, reducing vehicle miles traveled (VMT), and

reducing emission rates. The chapter also examines the savings in fuel consumption and the dollar savings to students.

Chapter 10 examines the transferability issue of UPASS to employers and institutions. The chapter identifies the benefits and disbenefits associated with a transit pass, identifies keys to the success of the program, and examines the characteristics of a person most likely to use a transit pass.

Chapter 11 concludes the report by summarizing the major findings, providing comments regarding the future of the program, and providing recommendations for potential future studies.

The appendix includes copies of all surveys, focus group material, calculations for determining the impact of UPASS, advertising material, and newspaper articles.

Chapter II

METHODOLOGY

Description of Project. The purpose of this report is to evaluate the impact of the UPASS program at The University of Wisconsin-Milwaukee and to provide insight on how the program can be transferred to employers. To accomplish this, a number of student surveys were conducted which concentrated on student travel patterns, attitudes and opinions regarding transportation services, mode choice, transit ridership, and other transportation related issues.

The majority of data contained in this report relies on information obtained from surveys conducted during the Spring 1994, Fall 1994, and Spring 1995. A random sampling of UWM students were mailed surveys during these semesters. Along with these surveys, an on-board survey of UPARK shuttlebus users was also conducted. In theory, UPARK shuttlebus users are potential users of UPASS since they are currently using a form of transit.

Student focus group discussion sessions were also conducted. The findings from the discussion sessions provided valuable insight into the attitudes and opinions of various market segments of UWM students. A complete report of focus group discussion findings is provided in the appendix of this report along with a section containing guidelines on conducting a focus group discussion.

MCTS ridership counts of the eleven transit routes serving UWM were also analyzed. Ridership counts prior to the implementation of UPASS were compared to counts taken after the implementation of UPASS (Fall 1994 and Spring 1995). These ridership counts were verified by comparing the results to the surveys.

The methodology used for the surveys and focus group discussions is described in greater detail in this chapter.

Spring 1994 Survey. The first survey of this study was conducted during April 1994 prior to the implementation of the UPASS program. The purpose of this survey was to provide a picture of student travel patterns and characteristics before the UPASS was implemented in order to provide a basis for comparison for later surveys conducted after implementation.

A 1 in 10 random sample of UWM students enrolled in classes during the Spring 1994 semester was conducted. In all, 2,446 surveys were mailed to students with respondents being able to return the surveys by postage paid mail or by returning the survey to the UWM Parking and Transit office. In all, 528 surveys were returned for a return rate of 21.6%.

Surveys

- Mail surveys
- 1 in 10 random sample of the UWM student population
- Surveys conducted both before and after the implementation of UPASS

The Spring 1994 survey concentrated upon the following areas.

- General student demographics
- Student arrival and departure times
- Mode choice to UWM, to work, to shopping, and to other locations
- Ratings of general transportation attributes
- Anticipated usage of a transit pass
- Parking characteristics

A copy of the Spring 1994 survey, along with a copy of the cover letter, is included in Appendix A.

Fall 1994 Survey. The Fall survey was conducted in late October 1994 with 2,158 surveys mailed to students. Of the 2,158 surveys mailed, 490 were returned for a return rate of 22.7%. Similar to the Spring 1994 survey, a 1 in 10 random sample of UWM students was selected. However, this survey concentrated specifically on students who pay segregated fees since these are the only UWM students eligible to receive UPASS.

In addition, a telephone follow-up survey of 103 students who had not completed the survey form was conducted. A random selection of students who had been mailed the survey were selected and called by telephone to determine whether the individual had completed the survey. If the survey had not been completed, the student was asked to answer a few select questions from the survey over the telephone. The telephone follow-up survey was done in an effort to correct for any bias which might have resulted in the mail survey from a higher response rate of UPASS users compared to non-users. With the addition of the 103 phone surveys, the total number of surveys returned increased to 593 surveys for a overall return rate of 27.5%.

The areas of concentration for the Fall 1994 survey included.

- General student demographics
- Mode choice to UWM, to work, to shopping, and to other locations
- Ratings of the Milwaukee County Transit System
- UPASS transit usage during the Fall 1994
- Transit usage during the Spring 1994
- UPASS impact on school related issues
- Student opinion regarding the UPASS program
- Comments and suggestions relating to the program

The Fall survey was used to form a pool of potential focus group participants. Students were asked to take part in a discussion session relating to the UPASS program and other transportation related issues. A copy of the Fall 1994 survey, along with a copy of the cover letter, is included in Appendix B.

Spring 1995 Survey. The third survey of this study was conduced during April 1995. Unlike previous surveys, the Spring 1995 survey concentrated on separating the responses of Milwaukee County residents verses out-of-county residents. A 1 in 10 random sample of students living in Milwaukee County (1374 surveys) and a 1 in 5 random sample of out-of-county students (1217 surveys) was conducted. The same survey was mailed to all students with different colored survey forms used to identify whether the student lived in Milwaukee County or out-of-county. The higher sampling rate of out-of-county residents was used to obtain a better picture of transit usage by students living outside the transit market area.

In all, 651 surveys were returned for a return rate of 25.1%. Milwaukee County residents returned 366 surveys for a 26.6% return rate while 285 out-of-county survey forms were returned for a 23.4% return rate. Further analysis indicated 23% of out-of-county respondents were students who actually live within Milwaukee County but had not provided the University with a change of address.

Return rates for the three surveys conducted of the UWM student population were between 21% and 27%.

When comparisons are made between Milwaukee County and out-of-county residents, the out-of-county category consists of only those respondents who actually live outside of Milwaukee County. Milwaukee County responses include only Milwaukee County survey responses. The Spring 1995 survey concentrated on the following areas.

- General student demographics
- Mode choice to UWM, to work, to shopping, and to other locations
- Rating of UWM parking attributes
- Student parking locations at UWM and work
- UPASS transit usage during the Spring 1995
- Transit usage during the Spring 1994
- Important variables in choosing to use UPASS
- Student opinion regarding the UPASS program
- Comments and suggestions regarding UPASS

A copy of the Spring 1995 survey, along with a copy of the cover letter, is included in Appendix C.

UPARK Shuttlebus Survey. The UPARK shuttlebus program consists of satellite parking lots located approximately 3 to 5 miles from campus. Three lots are available to students to park at including the Capitol/Humboldt lot, the McKinley Marina, and the Veterans Park lot. Students may park at these locations free of charge, with no time restrictions, and ride a shuttlebus to the Kenwood campus. The service operates Monday through Thursday from 5:30 AM to 9:30 PM and on Friday from 5:30 AM to 8:30 PM.

The UPARK shuttlebus survey was conducted on Monday March 27, 1995, beginning at approximately 7:30 AM. On-board survey forms were printed for distribution on 8 1/2" x 14" size paper. The surveys were distributed by the bus drivers as students boarded the shuttlebus. Upon arriving at campus, students returned the completed survey form to a box located near the front of the bus. A total of 750 surveys were handed out and 612 were returned for a return rate of 81%.

The main purpose of the UPARK shuttlebus survey was to obtain a pool of potential focus group participants. The survey also provided information regarding characteristics of individuals who use the UPARK service. In theory, these students are potential users of UPASS since they are currently using a form of transit to arrive at campus.

The UPARK shuttlebus survey examined the following.

- General student demographics
- Arrival and departure times at the UPARK parking locations
- Alternate modes of travel used to UWM
- UPASS usage for trips to UWM, to work, to shopping, and to other locations
- Variables influencing students decision to use the UPARK service
- Willingness to participate in a student focus group discussion

A copy of the UPARK survey is included in Appendix D.

Student Focus Group Discussions. Student focus group discussion sessions were held during the Spring 1995 to provide insight into student attitudes regarding the UPASS program. Potential participants were identified through the Fall 1994 survey and the UPARK survey. Students were contacted by telephone to confirm their participation in the discussion session. Five discussion groups took place between March 1, and April 5, 1995. The groups selected for the discussion sessions were:

Focus Groups

- Videotaped
- Impartial Facilitator
- 5 Discussions conducted

Discussion Groups

1. Frequent users of UPASS
2. Non-Users of UPASS
3. Freshman only group
4. UPARK/UPASS users
5. UPARK/UPASS non-users

1. *Frequent users of UPASS.*

    - Respondents to the Fall 1994 survey who indicated using UPASS at least 3 or more times per week for various trip purposes.

2. *Non-users of UPASS.*

    - Respondents to the Fall 1994 survey who reported not using UPASS at all for any trip purpose. Many participants indicated driving for all trip purposes.

3. *Freshman only group.*

    - Freshman respondents to the Fall 1994 survey.

4. *UPARK and UPASS users.*

    - Respondents to the UPARK survey, primarily Milwaukee County residents, who normally drive to a UPARK location and ride the shuttlebus to campus. Some respondents indicated using UPASS on occasion.

5. *UPARK users but UPASS non-users.*

    - Respondents to the UPARK survey, primarily out-of-county residents, who normally drive to a UPARK location and ride the shuttlebus to campus. Most respondents indicated rarely using UPASS, if at all.

The focus group sessions followed a discussion guide prepared by Jim Champley of Guidepath Research, with input from members of the Center for Urban Transportation Studies (CUTS), MCTS, and the UWM Parking and Transit office. Mr. Champley also moderated the five discussion groups and assisted in the editing of the final report of the focus group findings.

The focus group discussion sessions were videotaped and reviewed by the authors of this report. Comments and quotes obtained through out the discussion sessions are used as marginal notes in this report. A copy of the discussion guide, consent form, focus group findings, and guidelines for conducting a focus group discussion are included in Appendix E.

Milwaukee County Transit System Ridership Counts. MCTS conducts ridership counts on a regular basis for routes throughout their system including the eleven routes serving UWM. Ridership counts prior to the implementation of UPASS are compared against counts conducted after the implementation of UPASS for trips to UWM.

MCTS conducts the ridership counts in one of two ways. First, there are on-board counts conducted by the bus drivers. This method involves the driver counting the passengers as persons board the bus. The second method of determining ridership is by bus stop counts. With this method, the transit company places employees at bus stops to count the number of passengers boarding a bus, as well as the number of passengers who exit the bus. The results presented in this report are on-board counts.

The results provided by MCTS are also compared to the University survey results obtained from the Fall 1994 and Spring 1995. The surveys were used as a way to verify the on-board ridership counts provided by MCTS. The impact of UPASS on transit ridership is discussed in Chapter 8-UPASS Usage.

Chapter III

BACKGROUND DATA

Summary of Findings

This chapter provides an overview of the student survey respondents while providing a basis to measure the validity of the surveys. This chapter includes information regarding student classification, gender, class time, credit load, college or school enrolled in, and student employment. The information presented in this chapter compares survey results with data for the UWM population.

The following are the significant findings of this chapter.

- All surveys were found to be representative of the UWM population by using statistical tests.
- Response rates by student classification for the surveys were fairly representative of the UWM population. Graduate students tended to have higher return rates compared to the UWM population while freshman students tended to have lower return rates for all surveys conducted.
- Female students had a higher response rate compared to male respondents for all surveys conducted. Further analysis shows there was not a significant difference between female and male responses to other questions on the surveys.
- Nearly 80% of survey respondents report being employed while being enrolled in classes at UWM. The majority of respondents indicate working on average 20 or more hours per week.
- Survey results indicate during the Spring 1994 semester, 75% to 80% of the student population was on-campus Monday through Thursday. Only 50% of the student population was on-campus on Fridays.

Survey Validity. Statistical analysis was performed on all surveys to determine if the survey samples were representative of the UWM population. Using a t-test analysis, the results verified the survey samples were representative of the UWM population at a 95% confidence level.

Throughout this report results are presented using student classification as a common market segmentation analysis. A category contained within this breakdown is a group identified as 'special' students. While this category fits an identifiable pattern, it is not statistically significant due to a small sample size. This category should be viewed with caution since the data presented may not accurately represent the opinions of this group.

All surveys were found to be representative of the UWM population by using statistical tests.

Student Classification. Table 3-1 shows the percentage breakdown of survey respondents by student classification for the three surveys conducted. The table displays the survey results compared to the UWM population for the respective semester.

Table 3-1 Survey Response Rate by Student Classification (%)

Student Classification	**Spring 1994**		**Fall 1994**		**Spring 1995**	
	Survey	*UWM*	*Survey*	*UWM*	*Survey*	*UWM*
Freshman	6.3	12.3	10.8	13.9	9.1	11.8
Sophomores	12.7	20.2	17.8	19.5	16.7	18.6
Juniors	19.1	14.1	13.1	13.2	16.7	14.0
Seniors	24.2	25.3	24.9	23.4	26.3	26.5
Graduates	29.2	20.1	25.3	20.6	25.2	21.1
Special *	6.6	8.0	6.3	9.4	4.5	8.1
Other	1.9	-	1.8	-	1.5	-

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

NOTE: The University classifies students based on credits completed rather then year in school. Some differences between the surveys and University data may occur for this reason.

Graduate students had an overall higher response rate compared to the University population. In general, graduate students comprise approximately 20% of the student population during a given semester. Survey responses indicate return rates for graduate students between 25% to 29%. The majority of other student classification categories were fairly consistent with the UWM population with the exception of freshman respondents.

Freshman students showed lower survey response rates for all three surveys compared to their University population. With the exception of the Spring 1994 survey, the remaining student classification categories were fairly consistent and representative of the UWM population.

Gender. The breakdown between male and female students at the University is approximately a 45/55 ratio of males to females. Survey response rates for the Spring 1995, were very close to this ratio while response rates for the Spring 1994 and Fall 1994 surveys had lower response rates for males as compared to University totals.

Table 3-2 Survey Response Rate by Gender (%)

Gender	**Spring 1994**		**Fall 1994 ***		**Spring 1995**	
	Survey	*UWM*	*Survey*	*UWM*	*Survey*	*UWM*
Male	34.5	46.6	46.0	45.4	43.3	46.0
Female	65.0	53.4	52.0	54.6	56.5	54.0

* Percentages include telephone survey results.
NOTE: Survey results may not equal 100% as a small number of respondents did not indicate their gender.

The Fall 1994 survey showed a split of 38/62 ratio of male to female students. When the telephone follow-up survey values are added to this, the ratio between males and females becomes a 46/52 split. Two percent of respondents did not indicate their gender resulting in the percentages not adding to 100%. Table 3-2 shows the split between males and females for the respective surveys. While the surveys over represented women, later analysis indicated this was not a problem since the responses given to other questions by males and females were nearly identical.

College or School Enrollment. The University of Wisconsin-Milwaukee consists of 10 different schools, or colleges. The majority of students are classified as Letters and Science majors. Table 3-3 shows the response rate for each school by survey respondents as well as the UWM population.

Table 3-3 Survey Response Rate by School or College Enrollment (%)

School or College	**Spring 1994**		**Fall 1994**		**Spring 1995**	
	Survey	*UWM*	*Survey*	*UWM*	*Survey*	*UWM*
Allied Health	1.5	4.7	4.7	4.5	4.5	4.9
Architecture	4.0	3.0	2.9	3.3	4.6	3.3
Business Admin.	16.7	7.5	13.7	8.2	17.4	14.6
Education	14.4	9.0	14.3	8.7	12.6	8.7
Engineering	7.2	6.8	8.0	6.6	8.3	6.7
Fine Arts	4.2	5.0	3.5	4.9	4.8	5.0
Letters and Science	35.0	46.8	38.0	44.7	29.3	39.0
Library and Info Sci.	0.8	1.2	1.8	1.3	2.9	1.3
Nursing	6.8	5.1	4.1	4.9	6.0	4.7
Social Welfare	6.8	5.5	5.9	6.0	8.1	6.1

For the most part, the survey response rates were fairly representative of the UWM population. Letters and Science students comprised the majority of survey responses but were still slightly under represented compared to the UWM population. Business Administration and Education departments were two departments over represented compared to the UWM population.

Class Time. The University classifies students into the following three categories based upon class time: day only students, evening only students, and day/evening students. A day only student is defined as any person enrolled in classes that begin before 4:30 PM. An evening only student is a person enrolled in classes which begin after 4:30 PM while a day/evening student is someone having classes both before and after 4:30.

Table 3-4 shows that approximately 18% to 25% of UWM students fall under the category of evening only students. As a person advances in their student classification, the likelihood of that person taking evening only classes increases. Graduate students comprise the majority of evening only students.

Nearly 18 to 25% of all UWM students are registered as evening only students for a given semester.

Table 3-4 Survey Response Rate by Class Time (%)

Class Time	**Spring 1994**		**Fall 1994**		**Spring 1995**	
	Survey	*UWM*	*Survey*	*UWM*	*Survey*	*UWM*
Day Only	36.6	*	37.8	*	36.4	*
Evening Only	24.6	17.1	19.6	18.2	18.1	16.4
Day/Evening	37.1	*	42.2	*	44.2	*

* Information regarding day only and day/evening students was not available for the UWM student population.

Credit Load. The University classifies students into full-time or part-time based upon credit load. For undergraduates, 12 or more credits is considered a full-time student while 9 or more credits for a graduate student is considered full-time. Any student registering for fewer credits for their respective student classification is considered a part-time student.

Table 3-5 displays the average number of credits for survey respondents compared to the UWM population. The results indicate that the credit load of survey respondents compared to the UWM population is fairly representative.

Table 3-6 shows the survey results broken-down by full-time and part-time students. The results obtained from the three surveys were fairly consistent throughout the study with a slight variation among lower student classifications. Sophomores and juniors in particular had the most variation among part-time and full-time students for the three surveys.

Table 3-5 Average Number of Credits by Student Classification

Student Classification	**Spring 1994**		**Fall 1994**		**Spring 1995**	
	Survey	*UWM*	*Survey*	*UWM*	*Survey*	*UWM*
Freshman	12.3	11.3	11.6	11.3	12.8	11.6
Sophomores	11.4	11.4	11.5	11.7	12.4	11.6
Juniors	11.3	11.7	12.0	11.9	12.1	11.9
Seniors	11.3	11.2	11.4	11.3	11.9	11.4
Graduates	6.2	5.4	5.7	5.5	6.2	5.5
Special *	3.9	5.3	5.0	5.2	5.6	5.1

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Table 3-6 Analysis of Full-time and Part-time Students by Student Classification (%)

Student Classification	**Spring 1994**		**Fall 1994**		**Spring 1995**	
	Full-time	*Part-time*	*Full-time*	*Part-time*	*Full-time*	*Part-time*
Freshman	81.8	18.2	71.7	26.4	81.4	18.6
Sophomores	67.2	32.8	72.4	27.6	76.1	23.9
Juniors	68.3	31.7	71.9	26.6	74.3	25.7
Seniors	64.1	35.9	64.8	34.4	68.4	31.6
Graduates	33.8	66.2	21.8	75.8	31.7	68.3
Special *	2.9	97.1	6.5	93.5	13.8	86.2

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Percentage of Students On-campus. Each survey conducted contained questions regarding the number of students on-campus by weekday. Table 3-7 displays the percentage of survey respondents who indicated they attend the University on the respective day. The results show approximately 75% to 80% students enrolled during a given semester are registered for and attend classes at the University Monday through Thursday. Approximately 50% of the student population are registered for classes on Fridays.

Table 3-7 Students On-campus by Weekday (%)

Survey	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**
Spring 1994	74.4	71.8	71.8	68.2	42.0
Fall 1994 *	76.9	81.2	75.5	75.1	54.9
Spring 1995	79.4	79.6	77.7	77.3	50.4

* Mail survey results only.

The Spring 1995 survey also contained a question asking students to indicate their travel to campus on weekends. The results indicate nearly 10% of survey respondents report coming to UWM on Saturdays while another 8% said they come to campus on Sundays.

Student Employment. Survey results indicate a high percentage of students are employed while being enrolled in classes at UWM. Results indicate 75% to 90% of survey

respondents were employed with the exception of freshman students. Freshman respondents indicated a range of employment between 57% and 70%. Table 3-8 shows an analysis of student employment broken-down by student classification for the respective surveys.

For the purpose of this report, any respondent working 20 or more hours per week is considered a full-time employee. Any respondent working less than 20 hours per week is considered a part-time employee. Table 3-9 indicates a high percentage of UWM students were working 20 or more hours per week while being enrolled in classes. The results show roughly over 70% of students are employed full-time.

Survey results indicate nearly 80% of respondents reported working while being enrolled in classes at UWM.

Table 3-10 shows the average number of hours respondents reported working per week. Graduate and special students reported working on average 30 plus hours per week. Freshman students worked the least amount of time reporting an average slightly over 20 hours per week.

Table 3-8 Student Employment (%)

Survey	FROSH	SOPH	JUNIOR	SENIOR	GRAD	SPECIAL*
Spring 1994	57.6	85.1	84.2	82.0	77.3	85.7
Fall 1994	67.9	73.6	82.8	86.9	91.1	96.8
Spring 1995	69.5	77.1	77.1	82.5	87.8	89.7

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Table 3-9 Full-time Employed Students (%) (20 or more hours per week)

Survey	FROSH	SOPH	JUNIOR	SENIOR	GRAD	SPECIAL*
Spring 1994	52.6	70.2	69.4	65.7	79.8	86.7
Fall 1994	77.8	79.7	69.8	77.4	81.6	96.7
Spring 1995	76.3	75.2	79.8	75.4	89.0	93.1

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Table 3-10 Average Number of Hours Worked (Hours/Week)

Survey	FROSH	SOPH	JUNIOR	SENIOR	GRAD	SPECIAL*
Spring 1994	22.5	25.7	25.4	24.4	31.3	35.1
Fall 1994	23.0	25.0	24.0	25.0	30.0	34.0
Spring 1995	20.7	22.6	24.7	24.1	30.9	34.1

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Chapter IV

STUDENT TRAVEL PATTERNS

Summary of Findings

This chapter examines student travel patterns and other transportation related issues including the availability of an automobile, the number of students living in the transit market, origin and destinations of trips, parking characteristics, and arrival and departure times at campus.

The following are the main findings of this chapter.

- The majority of survey respondents indicate they have access to an automobile which they could use for trips to UWM. 85% of graduate students indicate they have an automobile available compared to 57% of freshman who have an automobile available.

- Over 80% of all survey respondents report they own the automobile they drive to UWM.

- 66% of respondents living in Milwaukee County indicate they live close to a transit route which provides direct service to UWM. 16% of respondents living out-of-county said they live in close proximity to a transit route with direct service to campus.

- Over 80% of all respondents trips to UWM originate at home. Another 80% of respondents report returning home after leaving UWM.

- Approximately 22% of trips to UWM by out-of-county respondents originate at a place of employment. In comparison, only 10% of trips to UWM by Milwaukee County respondents originate at a place of employment.

- Survey results indicate the peak arrival time for students arriving on-campus is between 8 and 10 AM. The majority of respondents indicate arriving at approximately 9:30 AM.

Availability of an Automobile. The majority of respondents from all student classifications indicated having an automobile available for UWM trips. The lowest response rate appeared on the Fall 1994 survey in which only 51% of freshman reported having an automobile available. Graduate students had the highest percentage of access to an automobile ranging between 83% to 90%. Results for other student classifications were fairly consistent with percentages ranging between 70% to 85%. Table 4-1 shows the percentage breakdown of students with access to an automobile for the respective surveys conducted.

Table 4-1 Availability of an Automobile (%)

Survey	FROSH	SOPH	JUNIOR	SENIOR	GRAD	SPECIAL*
Spring 1994	57.6	74.6	85.1	85.2	90.3	82.9
Fall 1994	50.9	71.3	79.7	77.0	83.1	87.1
Spring 1995	67.8	60.6	71.6	71.3	87.2	86.2

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Table 4-2 Auto Ownership (%)

Survey	FROSH	SOPH	JUNIOR	SENIOR	GRAD	SPECIAL*
Spring 1994	84.2	88.0	95.3	89.9	98.6	100.0
Fall 1994	96.3	93.5	82.4	89.4	96.1	92.6
Spring 1995	75.0	78.8	88.5	85.2	97.9	96.0

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Table 4-2 shows that of respondents who had an automobile available over 80% reported owning their automobile. The only exception occurred on the Spring 1995 survey in which only 75% of freshman respondents indicated they own their automobile. Graduate students had the highest percentage of auto ownership among the student classifications at 96%, or greater.

Transit Route Close to Trip Origin. The Spring 1995 survey asked students to indicate if they live close to a transit route which they could take directly to UWM without having to transfer buses. The following question appeared on the survey form.

3. Is there a bus route and stop close to this location that you could use to travel to UWM without transferring buses?

_____ YES _____ NO _____ DON'T KNOW

66% of students in Milwaukee County live in close proximity to a transit route they can take directly to UWM without having to transfer.

Figure 4-1 Milwaukee County Respondents with Direct Transit Service to UWM

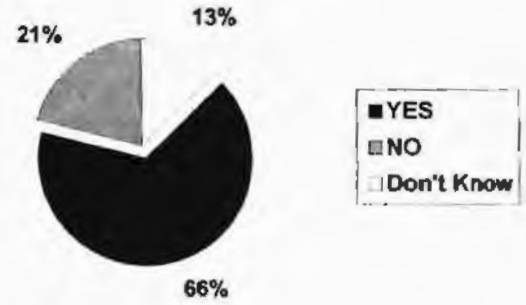


Figure 4-2 Out-of-county Respondents with Direct Transit Service to UWM

As might be expected, Milwaukee County respondents had greater access to transit service to UWM compared to out-of-county respondents. Sixty-six percent of Milwaukee County respondents indicated they had direct transit access to UWM compared to only 16% of out-of-county respondents. Furthermore, 68% of out-of-county respondents and 21% of Milwaukee County respondents indicated they were not close to a bus route with direct access to UWM.

Students Served by Transit. Using the previous percentages of students who live in close proximity to a transit route, the number of students who live in the transit market was estimated using the Spring 1995 University figures.

- Total enrollment = 20,776 students
- Milwaukee County residents = 11,071 students
- Out-of-county residents = 9,655 students

From the previous section, we know approximately 66% of students living in Milwaukee County live close to a transit route with direct non-transferable service to UWM. In addition, 11,071 students resided in Milwaukee County during the Spring 1995 semester. By calculating 66% times 11,071 students, we find approximately 7,307 students living in Milwaukee County live close to a transit route.

Nearly 43% of the University student population lives in close proximity to a transit route with direct non-transferable access to UWM.

Using the same calculation for out-of-county residents, we find that 16% indicated living near a transit route while 9,655 students live out-of-county. This works out to 1,545 students who live close to a transit route. If we combine the out-of-county students and Milwaukee County students who live near a transit route we arrive at the following:

- Number of Milwaukee County Students near transit route = 7,307
- Number of Out-of-county Students near transit route = 1,545
- Total UWM Students living near a transit route = 8,852

Approximately 8,852 students, or 42.7% of the student population, live near direct non-transferable transit service to UWM.

Origin and Destinations. Students were asked to indicate where their trip to UWM normally originates along with their normal destination after leaving the University. Nearly 80% of respondents indicate their trip to UWM originates at their home. Approximately the same percentage of respondents reported returning to their home after leaving UWM. Table 4-3 shows the percentage breakdown of the origin of trips to UWM while Table 4-4 shows the breakdown for destinations for the respective surveys.

Table 4-3 Trip Origin Before Attending UWM (%)

Origin	**Spring 1994**	**Fall 1994**	**Spring 1995**
Home (Off-Campus)	82.0	78.2	76.0
On-Campus Dorm	2.7	4.5	8.0
Place of Work	13.3	15.1	13.2
Child Care Location	0.8	0.4	0.5
Shopping / Other	1.2	1.8	2.3

Table 4-4 Trip Destination After Attending UWM (%)

Destination	**Spring 1994**	**Fall 1994**	**Spring 1995**
Home (Off-Campus)	80.3	84.5	80.2
On-Campus Dorm	2.8	3.9	7.1
Place of Work	12.1	8.2	8.1
Child Care Location	0.8	0.8	0.5
Shopping / Other	4.0	2.6	4.0

Further analysis of trip origin shows approximately 14% of all respondents come to UWM from their place of employment. When broken-down by Milwaukee County and out-of-county respondents, survey results show 10.1% of Milwaukee County respondents and 22.4% of out-of-county respondents come to UWM from their place of employment. Table 4-4 shows approximately 80% of respondents return home after attending UWM. Approximately 10% of respondents indicate they go to their place of employment upon leaving UWM.

Trip Patterns. The surveys provide information as to the complexity of student travel patterns. For the purpose of this report, a simple trip pattern is defined as a person leaving from their home before attending UWM and returning home immediately after leaving UWM. A complex trip pattern is defined as any trip that originates or ends at a location other then a persons home.

Table 4-5 shows approximately 71% to 73% of respondents indicate they have simple trip patterns. Analysis of respondents with complex trip patterns showed approximately 6% to 11% come to UWM from their home and then travel to work upon leaving the University. Approximately 12% to 14% of respondents indicate their trip to UWM originates at a place of employment and then ends at their home after leaving campus. Approximately 2% of respondents said their trip to UWM starts and a place of employment as well as returning to their place of employment upon leaving UWM. Nearly 5% of respondents indicated their trip to UWM either originated or ended at a location such as shopping center or child care location.

Focus group results indicate complex trip patterns play a major factor in deciding whether or not to use transit. Students not using UPASS often commented they needed to be places, such as work, immediately after attending UWM

Figure 4-3 indicates 36% of out-of-county respondents had complex trip patterns compared to 22% of Milwaukee County respondents. Seventy-eight percent of Milwaukee County respondents had simple trip patterns compared to 64% of out-of-county respondents. One significant difference between Milwaukee County respondents and out-of-county respondents is found in the number of commuters who come to UWM from their place of employment. One out of every five out-of-county students report having a trip pattern consisting of traveling from work to campus and then returning home compared to only 1 out of 10 Milwaukee County students.

Focus group results indicate complex travel patterns play a major factor in deciding whether or not to use transit. Students not using UPASS often commented they needed to be places, such as work, immediately after attending UWM and they could not afford to wait for the bus.

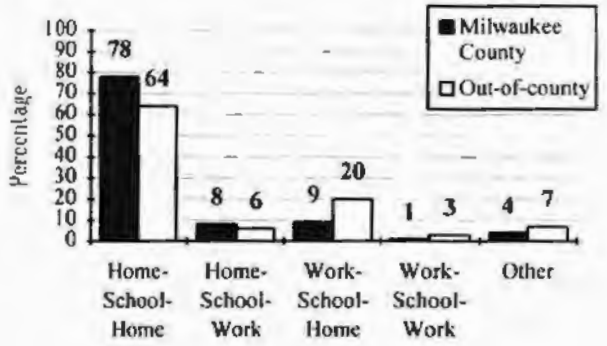
Table 4-5 Student Trip Patterns (%)

Trip Pattern	Spring 1994	Fall 1994	Spring 1995
SIMPLE			
Home - School - Home	71.4	73.3	73.4
COMPLEX			
Home - School - Work	10.7	6.6	7.2
Work - School - Home	11.8	14.3	13.0
Work - School - Work	1.6	1.5	1.5
Other *	4.5	4.3	4.9

* Includes trips to locations other then home or work (i.e. shopping, child care)

Spring 1995 survey results indicate approximately 36% of out-of-county respondents have complex trip patterns compared to 22% of Milwaukee County respondents.

Figure 4-3 UWM Student Trip Patterns (%)
Milwaukee County and Out-of-county Respondents



Source: Spring 1995 UWM Student survey

Student Arrival and Departure Times. Students were asked to indicate on the Spring 1994 survey their normal arrival and departure times for University trips. Results indicate the peak arrival time of respondents was between 8 AM and 10 AM. The majority of students indicate their peak arrival time was 9:30 AM.

Results were fairly consistent Monday through Thursday with a few slight variations. Fridays have very different arrival and departure patterns as fewer students are traveling to campus. Furthermore, students tend not to stay on-campus as long as other weekdays. Figures 4-4 through 4-13 represent the arrival and departure times and the accumulation of students on-campus during a given weekday.

MONDAY

Figure 4-4 Student Arrival and Departure Times (%) - MONDAY

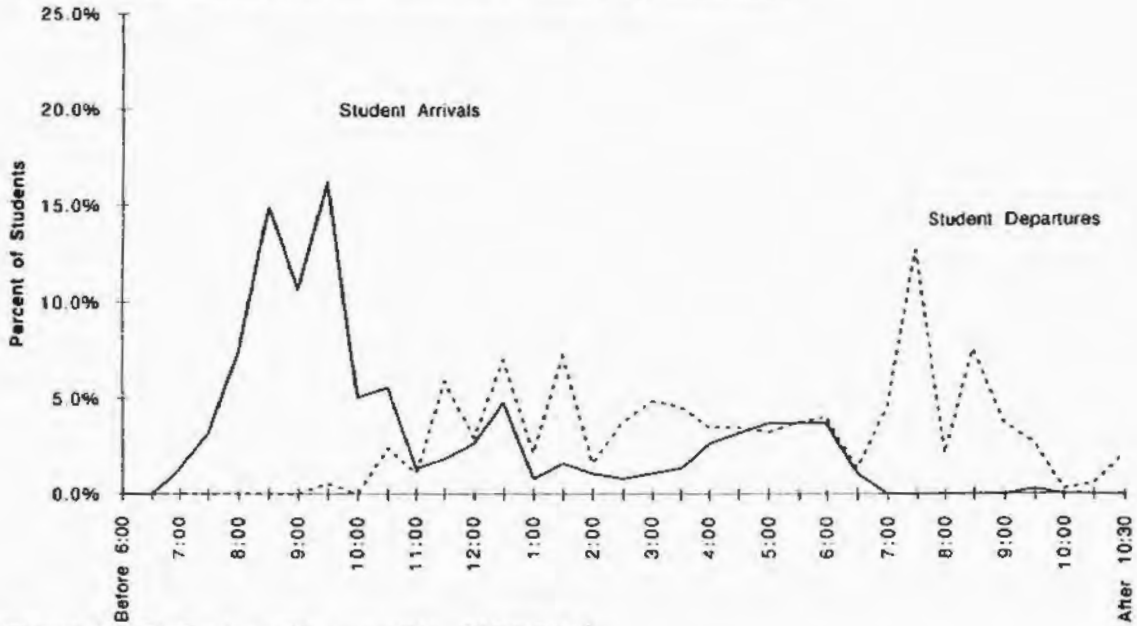
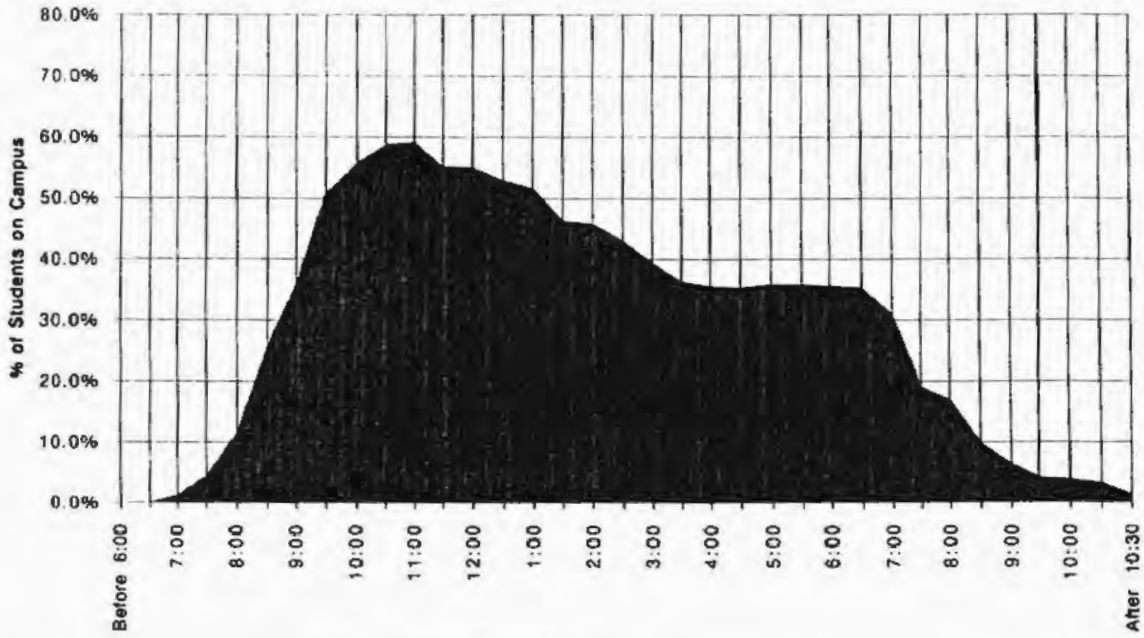


Figure 4-5 Students on Campus (%) - MONDAY



TUESDAY

Figure 4-6 Student Arrival and Departure Times (%) - TUESDAY

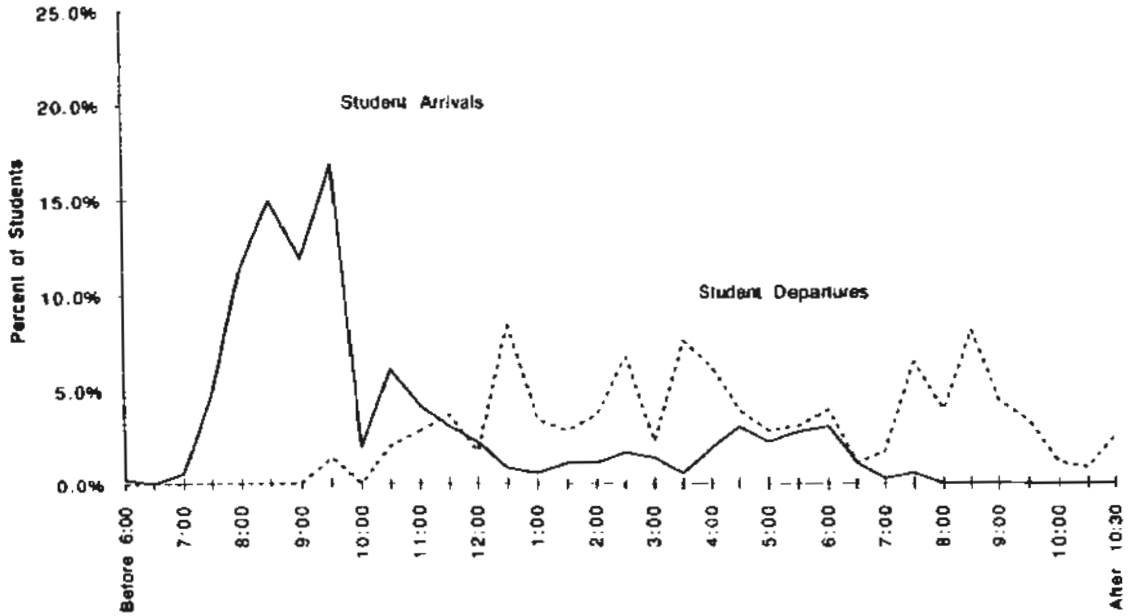
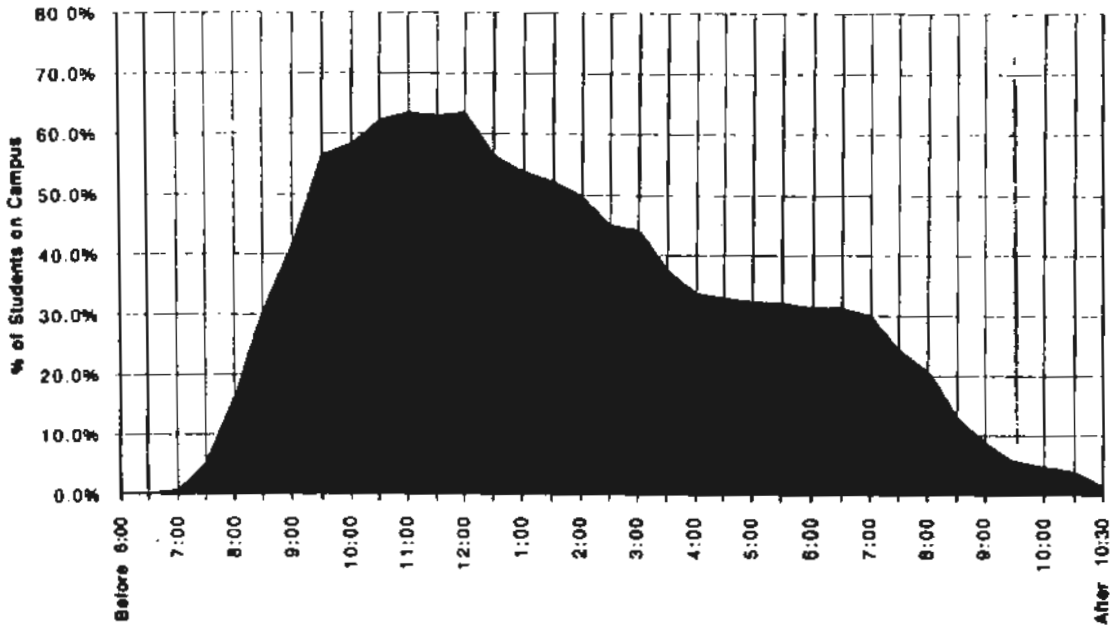


Figure 4-7 Students on Campus (%) - TUESDAY



WEDNESDAY

Figure 4-8 Student Arrival and Departure Times (%) - WEDNESDAY

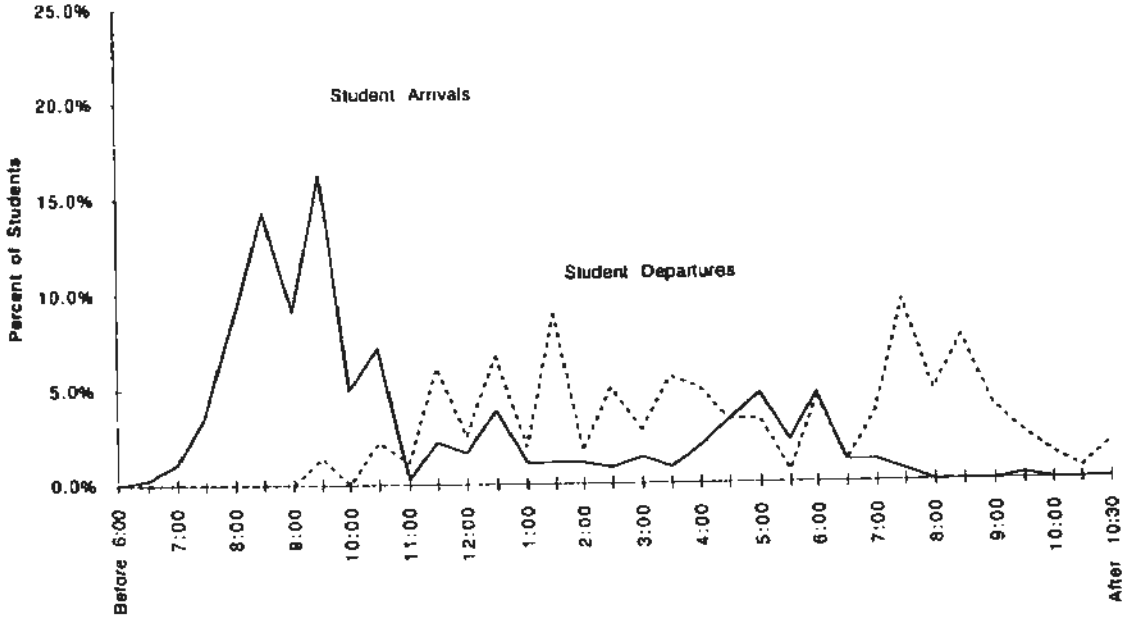
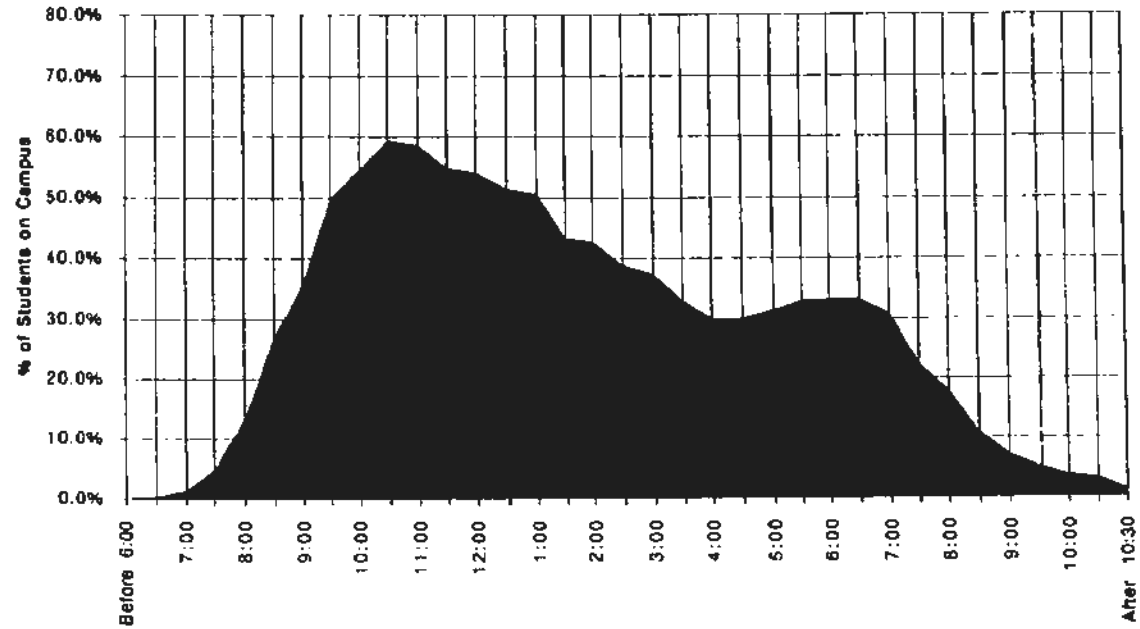


Figure 4-9 Students on Campus (%) - WEDNESDAY



THURSDAY

Figure 4-10 Student Arrival and Departure Times (%) - THURSDAY

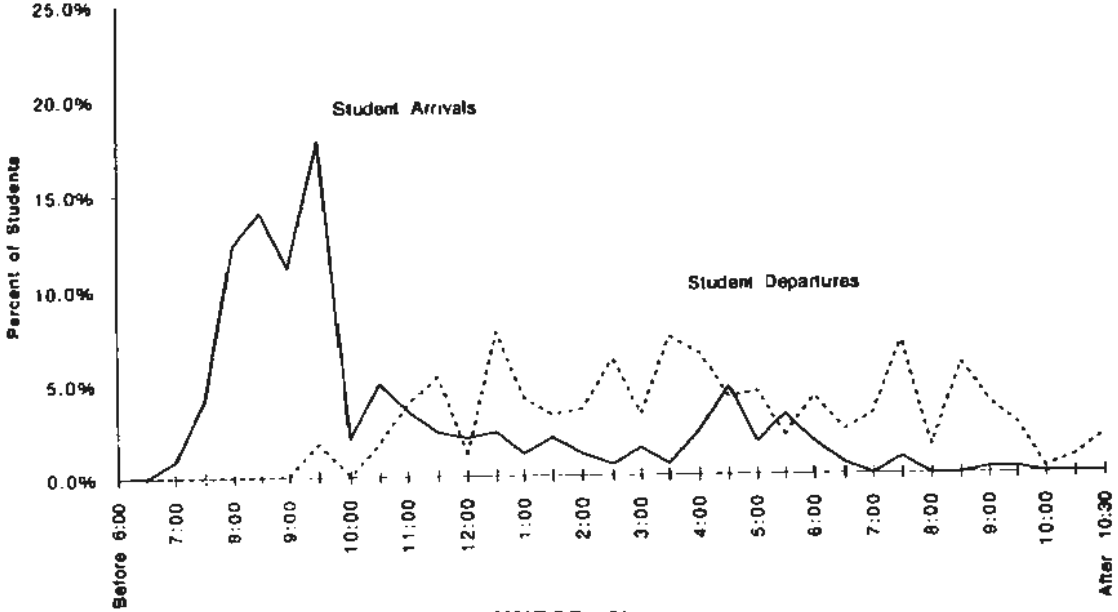
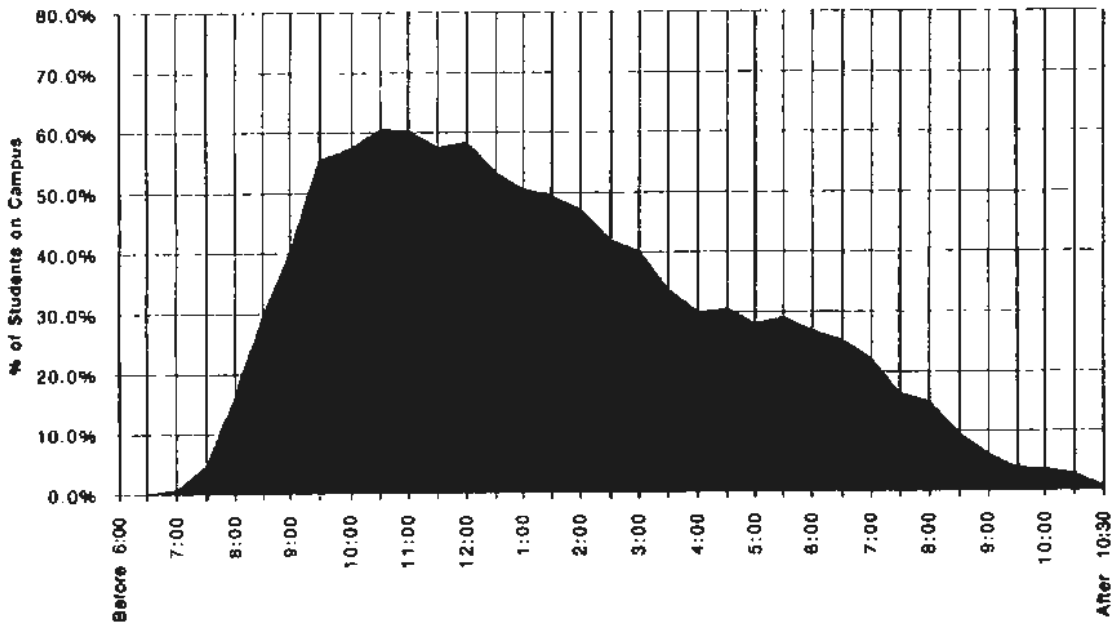


Figure 4-11 Students on Campus (%) - THURSDAY



FRIDAY

Figure 4-12 Student Arrival and Departure Times (%) - FRIDAY

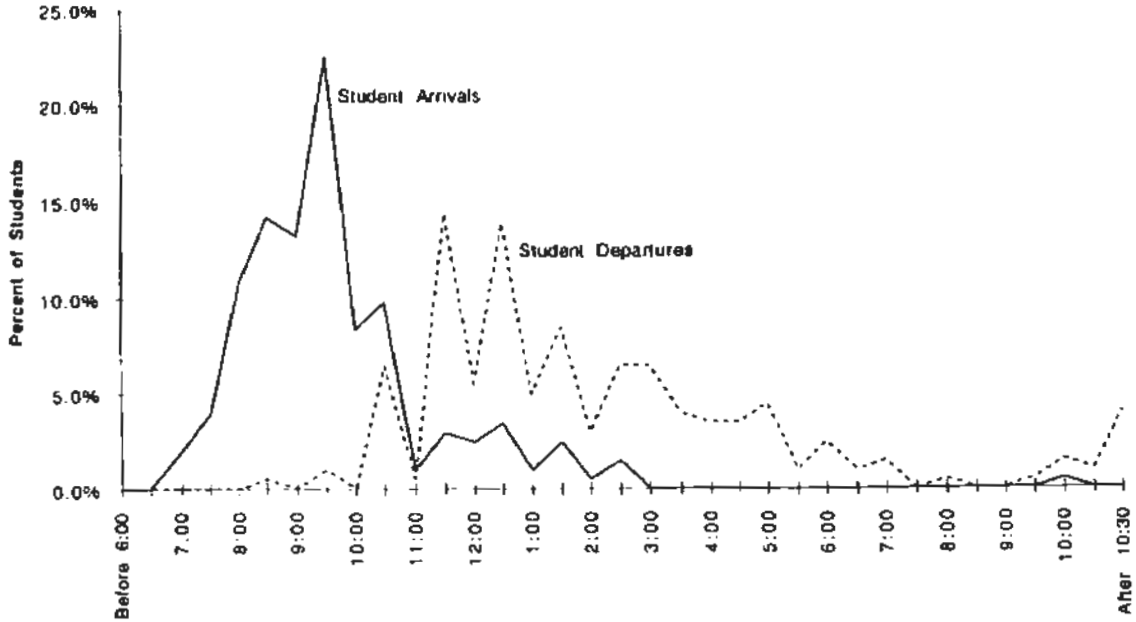
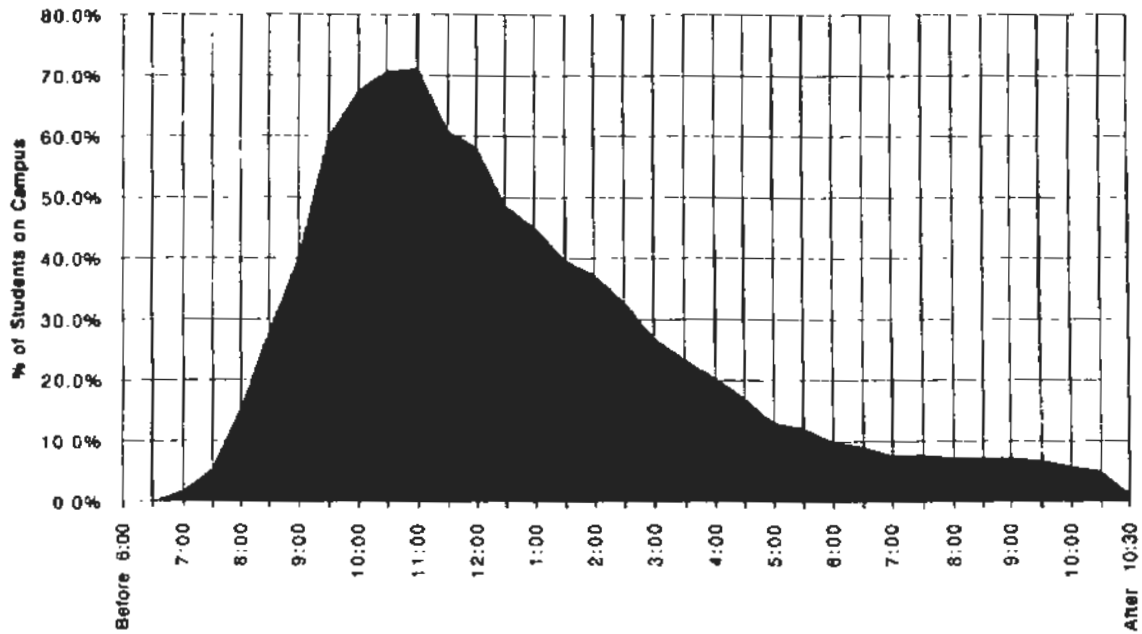


Figure 4-13 Students on Campus (%) - FRIDAY



Chapter V

ATTITUDES TOWARDS TRANSPORTATION SERVICES

Summary of Findings

This chapter examines student attitudes, opinions, and ratings of various transportation services. Students were asked to rate general attributes of a transportation system, MCTS, reasons for using UPASS, attitudes about UPASS, and the quality of parking at UWM.

The following are the main findings of this chapter.

- Time and dollar savings appear to be important factors in student mode choice.
- MCTS received overall high ratings with nearly all attributes receiving above average scores. The attribute 'a comfortable place to wait' was the only attribute receiving an average rating.
- 32% of respondents from the Spring 1994 survey who had stopped riding transit indicated the main reason was travel time.
- Students indicated that dollar savings was the major factor in choosing to use UPASS.
- Students rated parking at the University as poor. Safety and security received average scores while the remaining attributes of parking services received below average ratings.
- Survey results indicate 90.4% of respondents from the Fall 1994 survey and 86.9% of respondents from the Spring 1995 survey either strongly favor or favor the UPASS program.
- Survey results indicate over 90% of respondents felt the UPASS program should continue in future semesters. A high percent of respondents who did not even use UPASS indicated the program should continue.

Importance of Transportation Services. Prior to the implementation of UPASS, students were asked to rate the importance of general attributes of a transportation system. The following question appeared on the Spring 1994 survey.

17. Could you tell us how important the following characteristics of a transportation service are to you. Please put a number from 0 to 5 in the space beside the question.

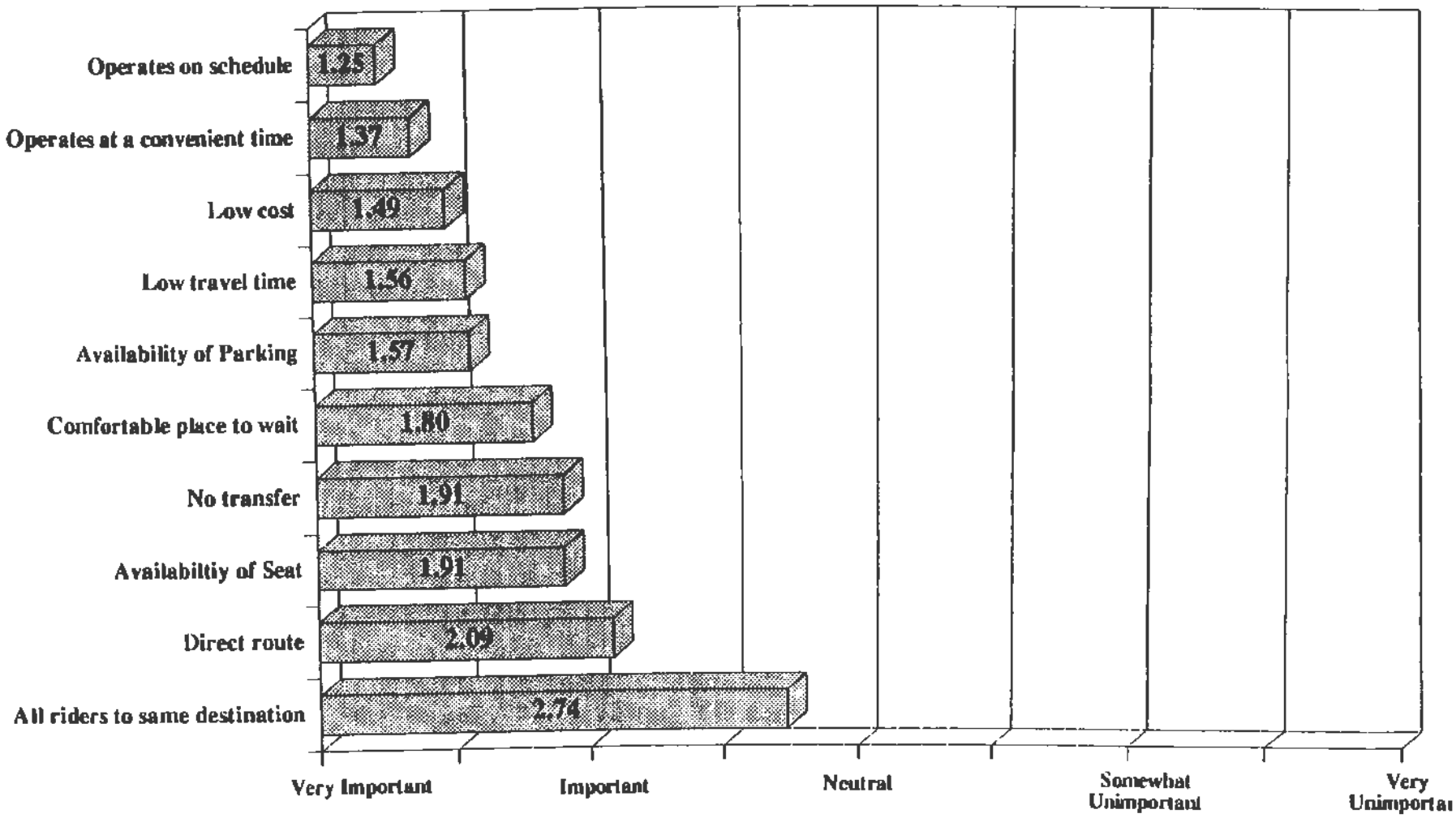
0 = DON'T KNOW
1 = VERY IMPORTANT
2 = SOMEWHAT IMPORTANT
3 = NEUTRAL
4 = SOMEWHAT UNIMPORTANT
5 = VERY UNIMPORTANT

(a) Low travel time _____
(b) Availability of a seat _____
(c) Low cost _____
(d) Not having to transfer vehicles _____
(e) A comfortable place to wait _____
(f) Operating on schedule _____
(g) Operating directly from my home to my destination _____
(h) Operating at a time convenient to me _____
(i) Easy availability of parking _____
(j) All riders in vehicle going to the same place _____

All attributes received a high level of importance rating with the most important attribute being that the service was on schedule. This attribute received an average rating of 1.25 on a scale of 1 (Very Important) to 5 (Very Unimportant). The second most important attribute was that the service must operate at a convenient time with a rating of 1.37. Low cost was the third highest rated attribute with low travel time closely following.

Respondents indicated it was not important that all the people in the vehicle were going to the same destination. This attribute received a score of 2.74, or close to a neutral rating. Figure 5-1 shows the importance level respondents placed upon each attribute.

Figure 5-1 Importance of Transportation Services



Attitudes Toward Milwaukee County Transit System. Students were asked to rate various attributes of MCTS on the Fall 1994 survey. The following question appeared on the survey form.

13. Could you please rate the following characteristics of the Milwaukee County Transit System. Please put a number from 0 to 5 in the space beside each question.

0 = DON'T KNOW
1 = EXCELLENT
2 = GOOD
3 = AVERAGE
4 = POOR
5 = VERY POOR

(a) Courteous and knowledgeable drivers _____
(b) Availability of a seat _____
(c) Frequency of buses _____
(d) Buses on time _____
(e) Total travel time _____
(f) Not having to transfer vehicles _____
(g) Availability of flyer or express service _____
(h) Convenient bus schedules _____
(i) Safety/Security _____
(j) Comfortable ride _____
(k) Ability to get good information _____
(l) Bus stop close to trip origin _____
(m) Bus stop close to destination _____
(n) Comfortable place to wait _____

"I just rate the buses in Milwaukee very high...I love them!"

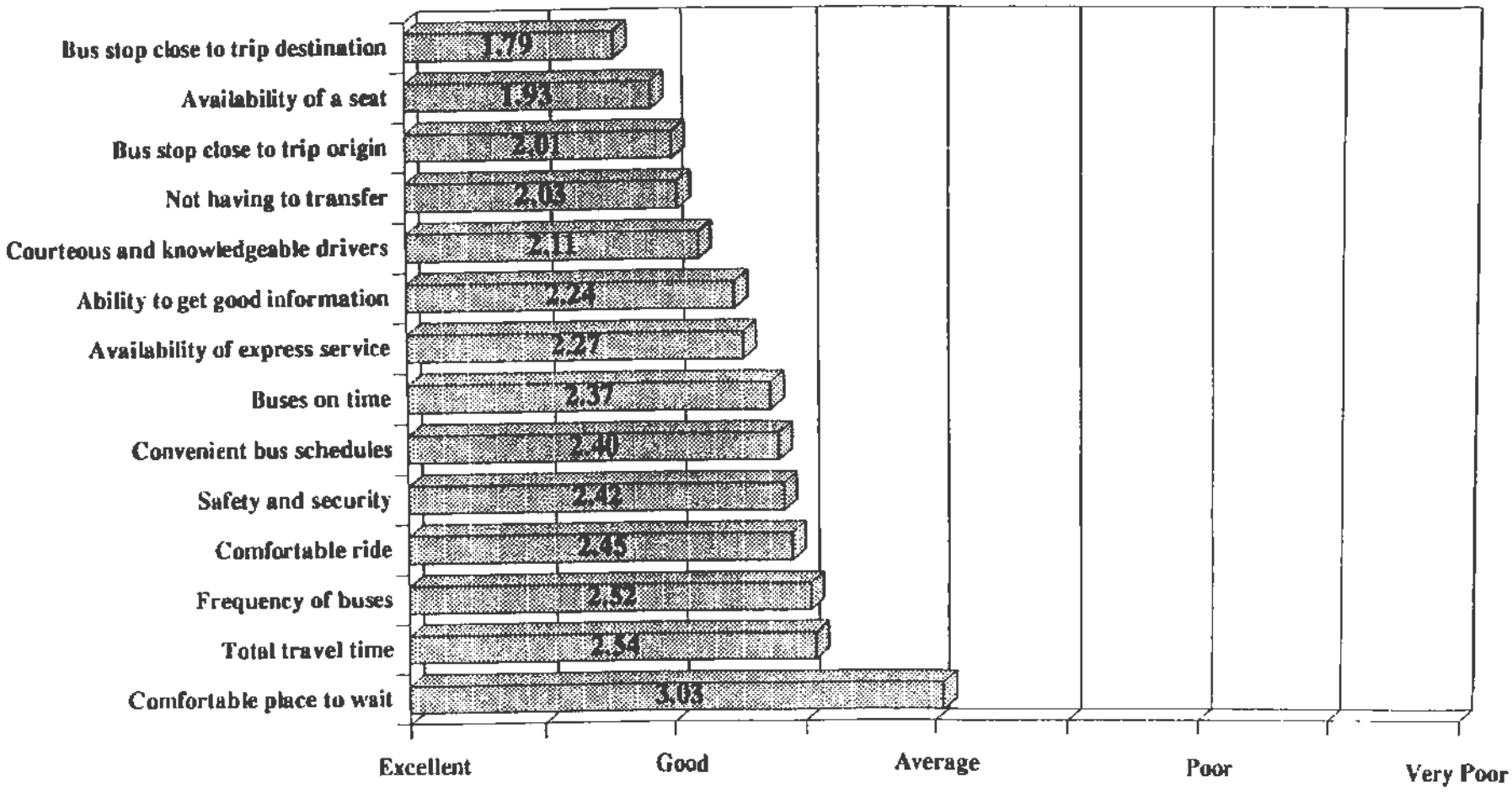
- A focus group participant

The results indicate respondents had a very positive attitude toward the transit system. A bus stop located close to a persons trip destination was rated as a very good aspect of the transit system receiving the highest rating of 1.79 on a scale of 1 (Very Good) to 5 (Very Poor). Availability of a seat was also a high rated attribute receiving a score of 1.93.

The attribute 'A comfortable place to wait' received the lowest score with a slightly below average score of 3.03. Total travel time and frequency of buses were also close to the bottom of the scale receiving ratings slightly over 2.50.

Respondents also indicated it was relatively easy to obtain information from MCTS. Respondents indicated MCTS bus drivers were very courteous and knowledgeable. This was confirmed during focus group discussion sessions in which participants indicated they felt MCTS operates a good service.

Figure 5-2 Milwaukee County Transit System Attribute Ratings



Reasons Students Stop Riding Transit. While MCTS did receive high ratings on the Fall 1994 survey, some respondents indicated in a prior survey they had stopped riding transit. On the Spring 1994 survey, nearly one-third of these respondents stated travel time was the main reason they stopped riding transit. This finding was confirmed in student focus group discussions where out-of-county respondents felt the bus just took to long to arrive at their destination. Table 5-1 represents the responses students reported as the reason they stopped using transit.

The UPASS program addresses some of the main reasons students gave for no longer using transit. Travel time for one was addressed by adding express service along with extending service on some routes. Secondly, UPASS gave students options including whether or not to purchase a car and provided flexibility in housing options.

Nearly one-third of Spring 1994 survey respondents indicated travel time was the main reason they stopped riding transit.

Perhaps the greatest impact of the UPASS program is the dollar savings to students. It is interesting to note 10% of respondents indicated cost was a factor in their decision to no longer use transit. With the existence of the UPASS program, cost is no longer a deterrent to use transit. Students no longer need to pay each time they use transit, instead they use the semester long UPASS.

Table 5-1 Reasons Respondents Stopped Riding Transit (%)

Reason for No Longer Riding Transit	**Percentage**
Travel Time	31.8
Car Became Available	22.7
Moved to New Location	13.6
Schedule Conflict	10.9
Cost	10.0
Inconvenient	9.1
Safety/Security Issues	9.1
Quality of Service	8.2
Nice Weather	5.5
Not Enough Late Service	3.6
Waiting Time	1.8
Bus Stop to Far Away	1.8
Began Carpooling	0.9

NOTE: Based upon 110 respondents out of 528 surveys (20.8%), who indicated they had stopped using transit for one or more of these reasons.

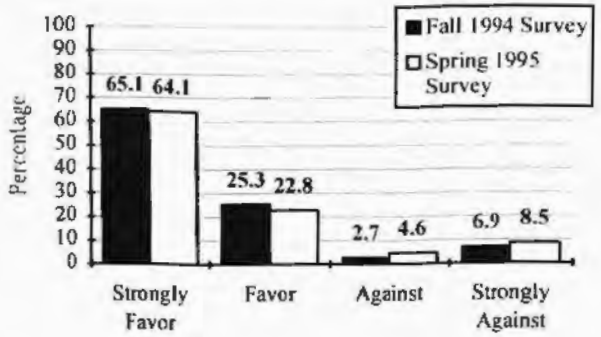
Source: Spring 1994 UWM Student Survey

Support for UPASS. Surveys conducted after the implementation of UPASS asked students their opinion of the program. Students were given five options to choose from including strongly favor, favor, against, strongly against, and no opinion. Results obtained from the Fall 1994 survey indicate nearly 94% of respondents expressing an opinion either favor or strongly favor the UPASS program. Spring 1995 survey results show approximately 87% of respondents either favor or strongly favor UPASS. Figure 5-3 represents the response rates of those students expressing an opinion regarding UPASS.

"One of the best things done for students and for parking problems around UWM."

- A student commenting on UPASS

Figure 5-3 Student Attitudes Regarding UPASS (%)



It should be noted while the percentage of students against and strongly against the program increased between the Fall 1994 and Spring 1995, one should consider that the Spring 1995 survey consisted of a higher sampling rate of out-of-county students. It is likely a number of respondents who were against the UPASS program were out-of-county students who could not use UPASS.

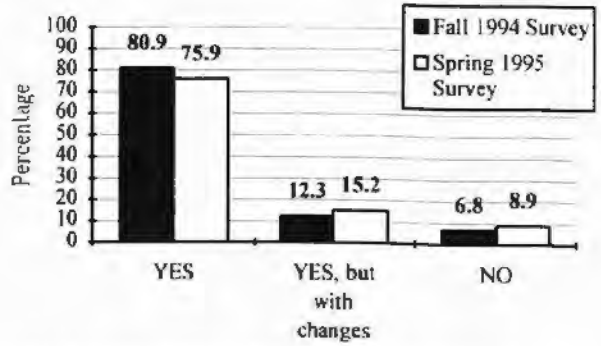
Focus group discussions showed students who don't even use UPASS still support the program. Students who don't use the program indicated they want to know if other students were using the UPASS. Focus group participants felt if students were using the program then the program was worth the cost and should continue in future semesters.

Opinions About the Future of UPASS. In addition to asking students about their attitudes regarding UPASS, students were asked if the program should continue in future semesters. An overwhelming percentage of respondents indicated UPASS should continue as over 90% of respondents on both surveys indicated the program should continue as is or with changes. A number of students who do not use UPASS even felt the program was a good idea and should remain intact. Figure 5-4 represents student responses from the Fall 1994 and Spring 1995 surveys.

"The UPASS has been a true blessing for me. I really didn't know how I was going to get to school everyday. This is a great program and I hope that it continues."

-A freshman focus group participant

Figure 5-4 Student Opinions on Whether UPASS Should Continue (%)



In all, 76% of students said the program should continue as it currently operates. Another 12% to 15% felt the program should continue but with changes. Among the most common changes students suggested was they wanted more express service. Several students living in outlying areas also wanted service extended so they could take greater advantage of the UPASS for trips to UWM. Another common suggestion students had was to make the program optional. A number of respondents felt if a student does not use the pass they should not have to pay for it.

Reasons for Using UPASS. Students were asked to rate various attributes regarding the UPASS program. The following question appeared on the Spring 1995 survey in which students were asked to rate the importance level of each attribute.

20. Rate how important the following characteristics are in your decision to use UPASS (Please complete even if you only use it once a month). Please put a number between 0 and 5 next to each characteristic:

0 = DON'T KNOW/DOESN'T APPLY
1 = VERY IMPORTANT
2 = SOMEWHAT IMPORTANT
3 = NEUTRAL
4 = SOMEWHAT UNIMPORTANT
5 = VERY UNIMPORTANT

(a) Save money	_____	(f) Environmental concerns	_____
(b) Avoid finding a parking space	_____	(g) Bad weather conditions	_____
(c) Avoid parking tickets	_____	(h) Convenience	_____
(d) Have no car	_____	(i) Bus stop close to my home	_____
(e) Have no license	_____	(j) Extra time to study on bus	_____
(f) Avoid driving in heavy traffic	_____	(k) Extra time to relax on bus	_____

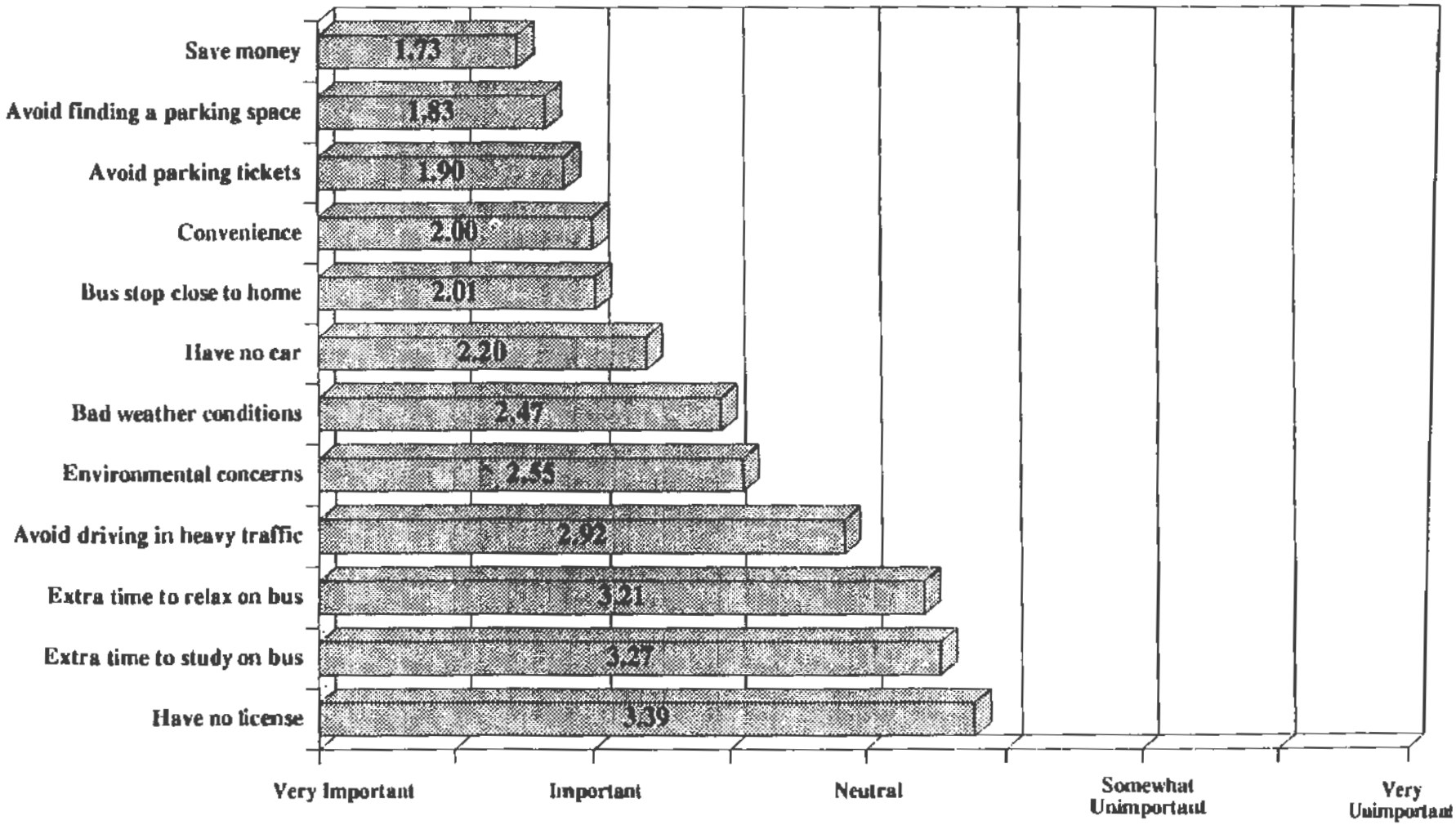
The most important reason for using UPASS was for the dollar savings.

The results indicate the most important reason for using UPASS was for the dollar savings. This attribute received a rating of 1.73 on a scale of 1 (Very Important) to 5 (Very Unimportant). Focus group discussion sessions confirmed that dollar savings was an important variable in choosing to use UPASS.

Parking was also an important consideration for using UPASS. The number two and three rated reasons for using UPASS were that it avoided finding a parking space as well as avoiding parking tickets.

Some students indicated weather played a role in their decision to use, or not use UPASS. Respondents indicated that during bad weather they would often opt for the bus over other modes of transportation.

Figure 5-5 UPASS Attribute Importance Ratings



Parking at UWM. Students were asked on the Spring 1995 survey to indicate their opinion regarding the parking situation at UWM. The following question appeared on the survey form.

14. Could you please rate the following characteristics regarding parking at UWM. Please put a number from 0 to 5 in the space beside each question.

0 = DONT KNOW
1 = EXCELLENT
2 = GOOD
3 = AVERAGE
4 = POOR
5 = VERY POOR

(a) Availability of a spot on-street _____
(b) Availability of a spot on-campus _____
(c) Ability to find a spot close to campus _____
(d) Spend little time finding a space _____
(h) Ability to keep cost low _____
(i) Ability to avoid parking tickets _____
(g) Safety/Security for on-street _____
(h) Safety/Security for on-campus _____

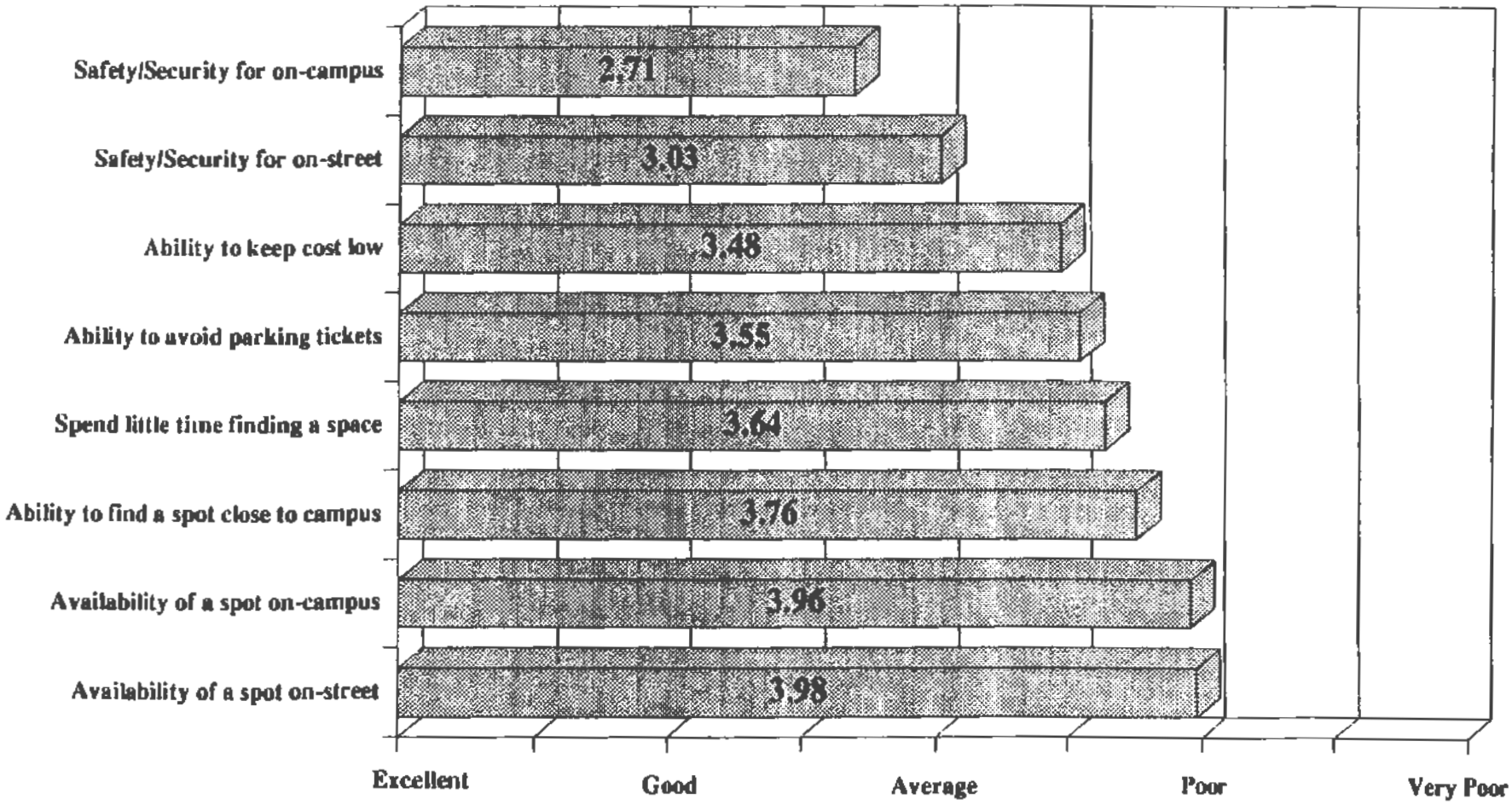
In general, respondents felt the parking situation at the University was a problem. All attributes received below average ratings except for Safety and Security on-campus

In general, respondents felt the parking situation at the University was a problem. All attributes received below average ratings except for Safety and Security on-campus which received a slightly above average rating of 2.71. Safety and security off-campus received the second highest rating at 3.03.

The attributes receiving the lowest rating were availability of parking spaces on-campus and off-campus. The attribute 'availability of a spot on-street' was the lowest rated with a score of 3.98 while 'availability of a spot on-campus' was the second lowest rated attribute receiving a score of 3.96.

While survey respondents rated the parking situation as generally poor, some focus group discussion participants indicated they felt the parking situation was improving since the implementation of the UPASS program. A non-user of UPASS indicated he felt it was not as difficult to locate a parking spot around campus compared to previous semesters. As will be shown later, students indicated on the surveys that the parking situation at UWM was improving since the implementation of UPASS.

Figure 5-6 UWM Parking Attribute Ratings



Reasons Students use the UPARK Shuttlebus Service. Users of the UPARK shuttlebus service were asked to rate the importance of four variables in their decision to use the service. The following question appeared on the on-board survey conducted of over 600 students.

11. Please rate how important the following characteristics are in your decision to use the UPARK park and ride lot.

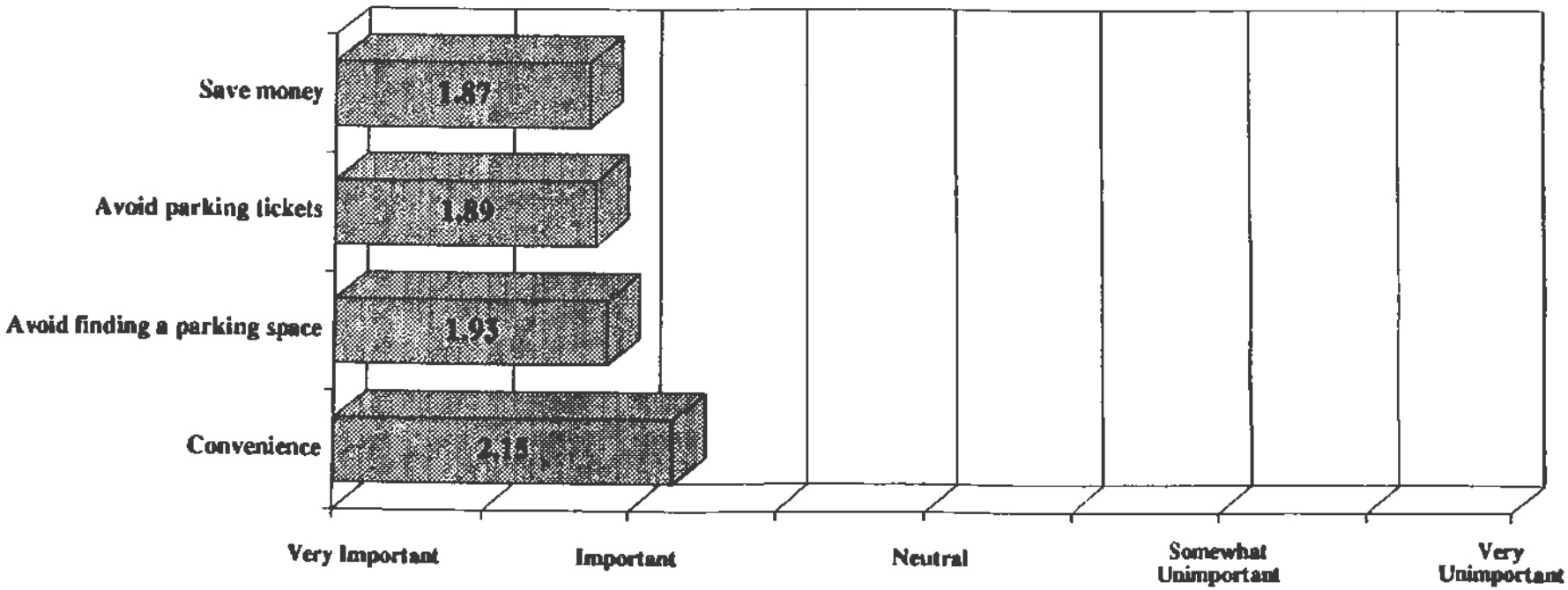
0= Don't Know
1= Very Important
2= Somewhat Important
3= Neutral
4= Somewhat Unimportant
5= Very Unimportant

a) Save money on parking ____
b) Avoid finding a parking space near campus ____
c) Avoid parking tickets ____
d) Convenience ____

All attributes received high ratings as all were very important factors in students decisions to use the UPARK service. The highest rated attribute was saving money which received a 1.87 on a scale of 1 (Very Important) to 5 (Very Unimportant). Avoiding parking tickets was the second rated concern of students at a rating of 1.89 and avoiding the difficulty of finding a space was rated third at 1.93

Convenience was the lowest rated variable receiving a high rating a rating of 2.15. It should be mentioned a number of students using the UPARK lots were students who indicated they live in on-campus dorms and leave their car parked at a UPARK location. For the most part, these students indicated the UPARK is inconvenient to them since they cannot park their automobile at the dorms.

Figure 5-7 UPARK Shuttlebus Attribute Ratings



Chapter VI

MODE CHOICE

Summary of Findings

This chapter examines student mode choice reported by survey respondents for trips to the university, to work, to shopping, and to other locations. The chapter discusses mode choice prior to the implementation of UPASS and after the implementation.

The following are the main findings of this chapter.

- Students who drive to UWM declined from a rate of 54% prior to UPASS to a rate of 38% to 41% after the implementation of UPASS.

- Students who ride MCTS to UWM increased from a rate 12% prior to the UPASS to a rate of 25% to 26% after the implementation of the program.

- One factor leading to transit use appears to be proximity to transit services. Nearly 57% of respondents living near a bus stop indicated using transit as their normal mode of transportation for trips to UWM during the Spring 1995.

- Transit usage by market segments with good transit access is very high. For example, 64% to 67% of students living near a transit stop, with some daytime classes, and simple travel patterns use transit as their normal mode for UWM trips.

- Nearly 40% of Milwaukee County respondents who drive alone to UWM on a regular basis indicate they would shift to transit if their automobile was unavailable. In comparison, only 11% of out-of-county respondents indicate they would shift to transit if their automobile was unavailable.

- 10% of survey respondents indicate they had made a shift from driving to MCTS after the implementation of UPASS. 17% of Milwaukee County respondents and 3% of out-of-county respondents indicate making this shift.

- Nearly one out of every three Milwaukee County respondents indicate shifting from walking to MCTS as their normal mode of transportation to UWM since the implementation of UPASS.

Mode Choice. Students were asked to indicate their normal method of travel to UWM, to work, to shopping, and to other locations by coding the various modes of transportation used. For example, a student who drives to a park-and-ride lot and then rides transit to the University has used two modes of transportation, the automobile and the bus. Of particular interest in this study is the mode of transportation used to arrive at campus to determine if UPASS has resulted in a reduction in vehicle trips. The following question appeared on the Spring 1994, Fall 1994, and Spring 1995 surveys in roughly the same format.

13. Answer the following questions using one or more of the coded answers below:

1 = DRIVE ALONE	*4* = CARPOOL,	*5* = MOTORCYCLE	*8* = WALK
2 = UPARK SHUTTLEBUS	RIDE WITH	*6* = BICYCLE	*9* = OTHER
3 = REGULAR BUS	SOMEONE	*7* = TAXI	*0* = DID NOT ATTEND

NOTE: If you normally use more than one method of transportation on your trip code them all. For example, if you drive to a regular bus route and then take the bus, code both methods of transportation on the same line – that is, 1 to 3 to ... etc.

(a) What has been your most often used method of travel to UWM this semester? _____ to _____ to _____

(b) If your normal method of travel to UWM were unavailable, how would you get there? _____ to _____ to _____

(c) What method of travel do you normally use during bad weather? _____ to _____ to _____

(d) A year ago, what method did you normally use to get to UWM (1994 Spring semester)? _____ to _____ to _____

(e) What method do you normally use for work trips? _____ to _____ to _____

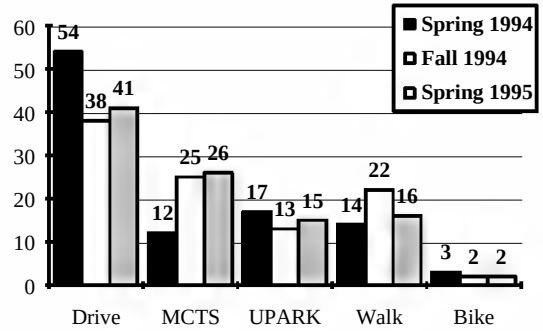
(f) What method do you normally use for shopping? _____ to _____ to _____

The following sections display five modes of transportation used for trips to UWM including drive, MCTS, UPARK, walk, and bike. The "Drive" mode includes respondents who indicated they drive alone, carpool, use a taxi, or ride a motorcycle to campus. The "MCTS" mode represents respondents who ride the Milwaukee County Transit System, including those who drive to a MCTS park-and-ride lot. The "UPARK" mode consists of students who drive to a University park-and-ride lot and ride a shuttlebus to campus. Students who walk and bike to the university are also included in the mode choice analysis since they comprise a large percentage of the UWM student population.

Mode Choice to UWM. Prior to the implementation of the UPASS program, the majority of students indicated they were driving to the University. Figure 6-1 shows 54% of survey respondents were driving to campus during the Spring 1994. Approximately 12% of respondents indicated using MCTS while another 17% used the UPARK shuttlebus service.

The percentage of students who indicated that they drive to UWM has decreased from a rate of 54% prior to the implementation of UPASS to a rate of 38% to 41%.

Figure 6-1 Comparison of Mode Choice to UWM (%)



NOTE: Spring 1994 survey results represent mode choice prior to the implementation of UPASS.

SOURCE: UWM Student Surveys

After the implementation of the UPASS program in the Fall 1994, the percentage of students who reported driving to UWM decreased to a rate of 38% and was at a rate of 41% in the Spring 1995. During this same period, student usage of MCTS doubled from 12% prior to the UPASS program to a rate of 25% in the Fall 1994 and 26% in Spring 1995.

The other modes including the UPARK shuttlebus, walk, and bike remained fairly consistent compared to pre-UPASS findings. The only mode showing a slight variation was an increase in the percentage of students who walk to campus. Prior to the

implementation of UPASS 14% of students indicated they walk to campus. This rate increased to 22% in the Fall 1994 and was at a rate of 16% in the Spring 1995.

Mode Choice to UWM- Milwaukee County and Out-of-county Respondents. The Spring 1995 survey examined mode choice by Milwaukee County and out-of-county respondents. Students were asked to indicate their mode of transportation used during the Spring 1995 as well as the mode used prior to the UPASS program in the Spring 1994.

Figure 6-2 indicates all respondents showed a decrease in driving to UWM from a rate of 48% in the Spring 1994 to a rate of 41% in Spring 1995. During this time, students riding MCTS increased from a rate of 16% prior to the implementation of UPASS to a rate of 26% in the Spring 1995.

Milwaukee County respondents showed a decline in driving to campus from a rate of 42% during the Spring 1994 to a rate of 34% during Spring 1995. In addition, 34% of Milwaukee County respondents indicate using MCTS as their normal mode of transportation to UWM during the Spring 1995 compared to a 21% usage rate prior to the implementation of UPASS. The other modes of transportation remained fairly consistent between the Spring 1994 and Spring 1995 with the exception of students who walk to campus. This category of students showed a decrease from a rate of 23% in the Spring 1994 to 19% in the Spring 1995.

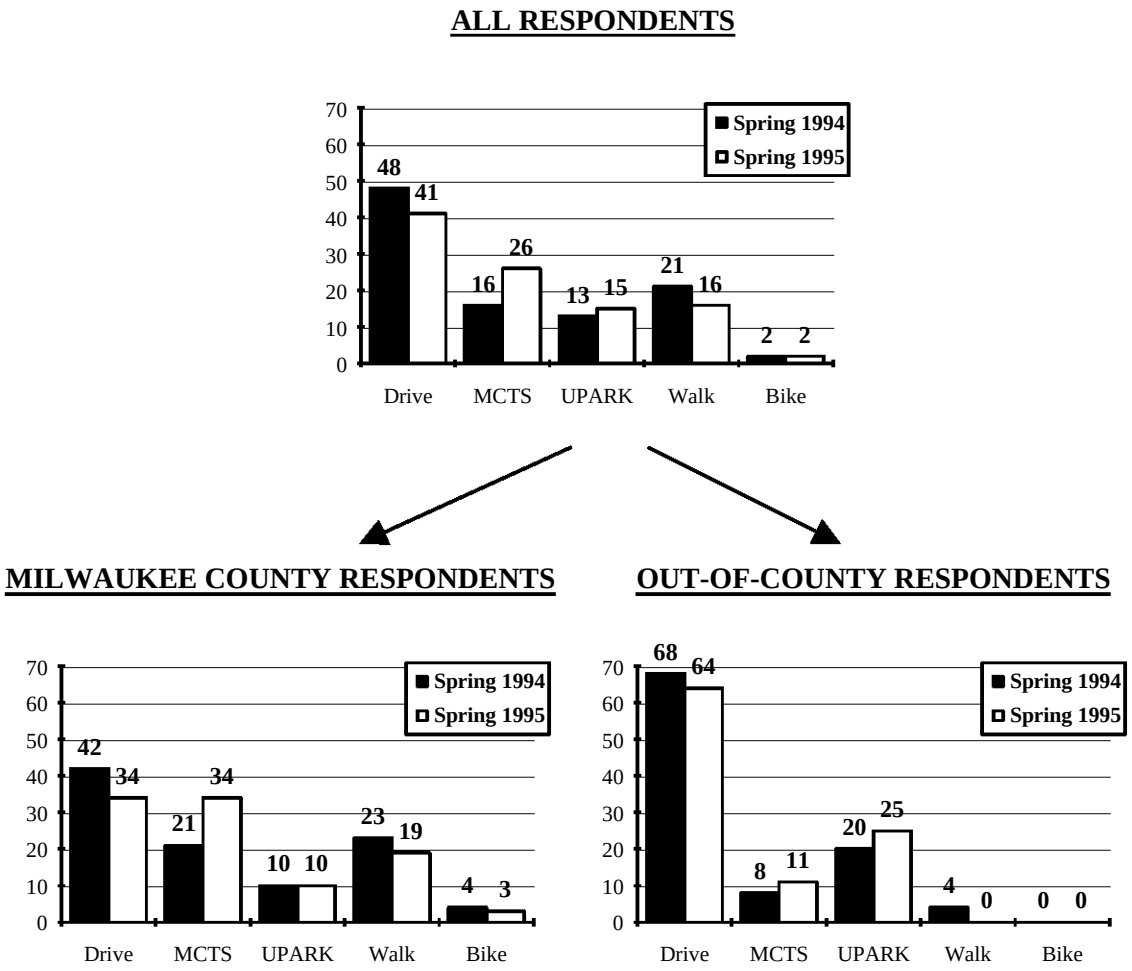
All respondents showed a decrease in driving to UWM from a rate of 48% in the Spring 1994 to a rate of 41% in the Spring 1995.

Out-of-county respondents showed a slight decline in driving from 68% during the Spring 1994 to 64% during the Spring 1995. Transit usage among out-of-county respondents showed an increase from 8% in Spring 1994 to 11% in Spring 1995. Four percent of students who walked to campus during the Spring 1994 likely represent students who no longer live close to campus during the Spring 1995.

Comparing the results of Milwaukee County and out-of-county respondents indicates the majority of shifts in mode choice have occurred by students living in Milwaukee County. Out-of-county students remained fairly constant in their mode choice from Spring 1994 to Spring 1995. Out-of-county students used the UPARK shuttlebus service at a rate of 2 to 1 in comparison to MCTS. Twenty-five percent of out-of-county respondents indicated they used the UPARK shuttlebus during the Spring 1995 compared to 11% who indicated using MCTS.

Figure 6-2 Milwaukee County and Out-of-county Respondents Mode Choice to UWM (%)

MCTS usage among Milwaukee County students increased from 21% to 34% after the implementation of UPASS. MCTS usage among out-of-county students showed a slight increase from 8% to 11%.



SOURCE: Spring 1995 UWM Student Survey

Mode Choice Shift for UWM Trips. The UPASS program has resulted in a decrease in students driving to campus while resulting in an increase in transit usage. It is of particular interest to examine from what mode of transportation the shift to transit has occurred. The Spring 1995 survey analyzed the shift in mode choice between the Spring 1994 and Spring 1995.

Table 6-1 shows the modal shifts that occurred for all survey respondents. The results indicate that 10% of students who were driving to UWM in the Spring 1994 shifted to MCTS during the Spring 1995. The largest percentage of students shifting to MCTS after the implementation of UPASS occurred by students who had previously walked to campus (28%). Approximately 19% of students who did not attend UWM prior to UPASS indicated MCTS was their normal mode to UWM since the implementation of UPASS.

Table 6-2 illustrates the mode shift that occurred by Milwaukee County respondents. Seventeen percent of Milwaukee County respondents who normally drove alone to UWM in the Spring 1994 indicated shifting to MCTS as their normal mode of transportation during the Spring 1995. Eighteen percent of respondents who used the UPARK shuttlebus prior to the UPASS program indicated making a shift to MCTS. Nearly 68% of Milwaukee County respondents who drove to UWM during the Spring 1994 continued to drive in the Spring 1995.

Table 6-3 indicates out-of-county respondents made only minor shifts in mode choice compared to Milwaukee County respondents. Over 83% of out-of-county respondents who reported driving to UWM in the Spring 1994 continued to drive during the Spring 1995. Only 3% of out-of-county respondents indicated shifting from driving during the Spring 1994 to MCTS during the Spring 1995.

Overall, the largest shift to transit occurred by Milwaukee County respondents who had previously walked to campus. Nearly 32% of Milwaukee County respondents who walked to campus during the Spring 1994 reported using transit for UWM trips during the Spring 1995. This provides an indication that a large percentage of students living in close proximity to the University are using the UPASS.

Table 6-1 Mode Choice Shift from Spring 1994 to Spring 1995 (%) All Respondents

FROM: *Mode Choice Spring 1994*	TO: *Mode Choice Spring 1995*					
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**
Drive Alone	75.3	10.3	2.1	8.2	1.5	2.6
MCTS	9.8	70.5	1.6	3.3	4.9	9.8
Drive/MCTS	7.1	0	78.5	14.3	0	0
UPARK	19.0	8.6	3.4	58.6	1.7	8.6
Carpool	16.7	12.5	0	8.3	62.5	0
Walk/Other	5.4	27.7	0.9	2.7	0.9	62.5
Did Not Attend	33.7	19.2	7.6	19.8	4.1	15.7

17% of Milwaukee County respondents shifted from driving to MCTS after the implementation of UPASS compared to only 3% of out-of-county respondents.

Table 6-2 Mode Choice Shift from Spring 1994 to Spring 1995 (%) Milwaukee County Respondents

FROM: *Mode Choice Spring 1994*	TO: *Mode Choice Spring 1995*					
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**
Drive Alone	67.7	17.2	2.0	10.1	0	3.0
MCTS	9.6	76.9	1.9	1.9	1.9	7.7
Drive/MCTS	14.3	0	71.4	14.3	0	0
UPARK	17.9	17.9	0	46.4	3.6	14.3
Carpool	9.1	9.1	0	9.1	63.1	9.1
Walk/Other	2.7	31.5	0	1.4	1.4	54.8
Did Not Attend	26.8	24.4	7.3	11.0	3.7	36.8

Table 6-3 Mode Choice Shift from Spring 1994 to Spring 1995 (%) Out-of-county Respondents

FROM: *Mode Choice Spring 1994*	TO: *Mode Choice Spring 1995*					
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**
Drive Alone	83.3	3.1	2.0	6.3	3.1	2.1
MCTS	12.5	25.0	0	12.5	25.0	25.0
Drive/MCTS	0	0	85.7	14.3	0	0
UPARK	20.0	0	6.7	70.0	0	3.3
Carpool	26.7	13.3	0	6.7	53.3	0

Walk/Other	10.8	18.9	2.7	5.4	0	62.2
Did Not Attend	39.7	12.5	8.0	27.3	4.5	8.0

Alternate Mode Choice for UWM Trips. While driving remains the predominant mode choice among UWM students, the UPASS still provides students with an option. Focus group discussion sessions indicate students feel the UPASS has an insurance, or option value. The reassurance of having the transit pass, even though some students may not use it on a regular basis, is seen as a benefit by many students.

The Spring 1995 survey results show how students would travel to UWM if there normal mode of transportation were unavailable. Table 6-4 shows nearly one out of every four students who normally drive to UWM would use MCTS if their car was unavailable while 22% of students indicate they would not attend. The largest percentage of students who would shift to transit were those who normally carpool (38%). Twenty-four percent of regular MCTS users indicate they would drive to UWM if transit was not available. This is an indication even students with access to an automobile are choosing to ride transit over driving to the University.

Table 6-5 indicates 37% of Milwaukee County respondents would use MCTS if they could not drive to UWM. Thirty-eight percent of Milwaukee County respondents who normally use the UPARK shuttlebus service indicated they would shift to MCTS if the service were not available. Twenty-six percent who normally use MCTS said they would drive alone if transit were not available.

Table 6-6 indicates very different results for out-of-county respondents. Eleven percent of out-of-county respondents who normally drive to campus indicate they would use MCTS if their automobile was not available. Approximately 30% said they would carpool to UWM while 31% said they would not attend classes if they could not drive. Forty percent of regular MCTS users and 42% of MCTS park and ride users indicated they would drive alone to UWM if their respective service was not available.

Students who said they would continue to use their normal mode of transportation even though it was not available is explained by the fact that some students indicated they would

use another family members automobile while transit users indicated they could take a different transit route.

Table 6-4 Alternate Mode Choice if Current Mode is Unavailable (%) All Respondents

FROM: *Current Mode*	TO: *Alternate Mode*						
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**	**Would Not Attend**
Drive Alone	8.0	23.0	1.3	7.1	27.9	11.1	21.7
MCTS	24.1	16.5	0.8	2.3	13.5	34.6	8.3
Drive/MCTS	38.7	22.6	9.7	9.7	9.7	3.2	6.5
UPARK	32.2	23.3	3.3	5.6	23.3	3.3	8.9
Carpool	44.1	38.2	2.9	2.9	2.9	5.9	2.9
Walk/Other	7.1	20.4	0	1.8	9.7	46.0	15.0

37% of Milwaukee County respondents who normally drive to UWM indicate they would choose transit if their automobile was unavailable. In comparison, 11% of out-of-county respondents indicate they would choose transit.

Table 6-5 Alternate Mode Choice if Current Mode is Unavailable (%) Milwaukee County Respondents

FROM: *Current Mode*	TO: *Alternate Mode*						
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**	**Would Not Attend**
Drive Alone	7.2	37.1	2.1	5.2	24.7	13.4	10.3
MCTS	25.5	14.7	0	2.0	13.7	34.3	9.8
Drive/MCTS	33.3	33.3	0	0	16.7	8.3	8.3
UPARK	38.2	38.2	2.9	5.9	11.8	2.9	0
Carpool	18.8	75.0	0	0	0	6.3	0
Walk/Other	11.3	21.3	0	2.5	7.5	41.3	16.3

Table 6-6 Alternate Mode Choice if Current Mode is Unavailable (%) Out-of-county Respondents

FROM: *Current Mode*	TO: *Alternate Mode*						
	Drive Alone	**MCTS**	**Drive/ MCTS**	**UPARK**	**Carpool**	**Walk/ Other**	**Would Not Attend**
Drive Alone	7.9	11.1	0	7.1	30.2	12.7	31.0
MCTS	40.0	0	0	0	20.0	40.0	0
Drive/MCTS	42.1	15.8	5.3	15.8	10.5	0	10.5
UPARK	30.8	11.5	3.8	5.8	28.8	3.8	15.4

Carpool	84.6	0	0	7.7	0	0	7.7
Walk/Other	0	100.0	0	0	0	0	0

Mode Choice for Work Trips. Several students indicated making a shift from driving to transit for work trips in addition to UWM trips. Survey results indicate that approximately 80% of all respondents were employed while attending UWM. The majority of students indicated working 20 or more hours per week.

Figure 6-3 shows the mode choice results for work trips obtained from the Spring 1994, Fall 1994, and Spring 1995. Prior to UPASS, approximately 83% of respondents indicated their normal mode choice to work was driving while 76% of respondents reported driving during the Fall 1994 and 81% during the Spring 1995, after the implementation of UPASS. This represents approximately an 8% decrease in students driving to work after the implementation of the transit pass program.

"Everybody on campus can use the bus even if they don't need it to come to school. They can always use it to go to work or use it to run around."

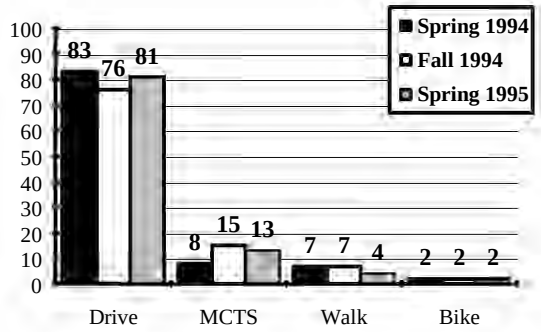
- A focus group participant

Approximately 8% of respondents indicated that MCTS was their primary mode choice for work trips during the Spring 1994. After the implementation of UPASS, transit usage for work trips nearly doubled to 15% in the Fall 1994 and was at a rate of 13% during the Spring 1995. This provides an indication that an employer based transit pass program could have a similar effect- nearly a doubling of transit usage.

Figure 6-4 shows a breakdown of Milwaukee County and out-of-county respondents. In all, 24% of Milwaukee County respondents use transit as their normal mode of transportation to work compared to only 2% for out-of-county respondents. Ninety-six percent of out-of-county respondents indicated this was their normal mode of transportation compared to 67% of Milwaukee County respondents.

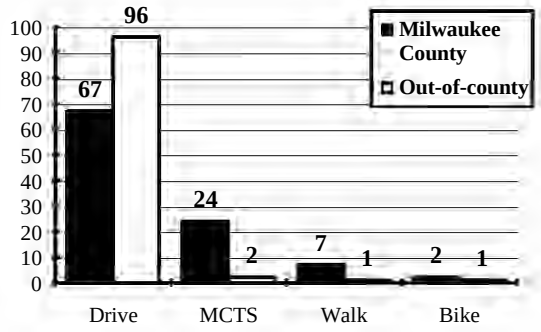
Transit usage for work trips showed nearly a doubling from approximately 8% prior to the UPASS to between 13% to 15% after the implementation of UPASS.

Figure 6-3 Mode Choice for Work Trips (%)



SOURCE: Spring 1994; Fall 1994; Spring 1995 UWM student surveys

Figure 6-4 Mode Choice for Work Trips (%)
Milwaukee County and Out-of-county Respondents



SOURCE: Spring 1995 UWM student survey

Mode Choice for Shopping Trips. Students were asked to indicate on the surveys their normal mode of transportation used for shopping trips. Figure 6-5 represents the mode choice for all surveys conducted while Figure 6-6 compares Milwaukee County respondents versus out-of-county respondents from the Spring 1995 survey.

Figure 6-5 shows students who were choosing to drive for shopping trips was at a rate of 87% prior to the implementation of UPASS. During the Fall 1994 the percentage of students driving for shopping trips declined to 80% and was at a rate of 85% in the Spring 1995. During this same time, student transit usage increased from a rate of 8% prior to UPASS to a rate of 16% during the first semester of the program. During the Spring 1995, student transit usage for shopping trips was at a rate of 11%.

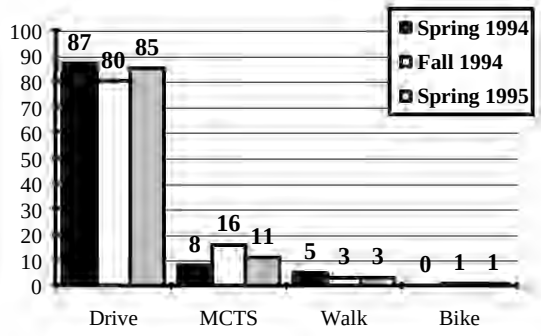
"Its' (UPASS) our only way to get out if you live in the dorms. It is just nice to be able to get away."

- A Freshman Focus Group Participant

Figure 6-6 shows out-of-county respondents in particular rely on driving for their normal mode of transportation for shopping trips. Approximately 96% of out-of-county respondents indicated on the Spring 1995 survey driving was their normal mode for shopping trips compared to 75% for Milwaukee County respondents. Student usage of MCTS was at a rate of 20% for Milwaukee County respondents compared to a rate of 2% for out-of-county respondents for shopping trips.

Focus group discussion sessions indicate students consider transit to be more convenient for Milwaukee County residents for shopping trip purposes. Some participants indicated dorm residents in particular would benefit the most from UPASS by having increased mobility for shopping trips as well as other trip purposes.

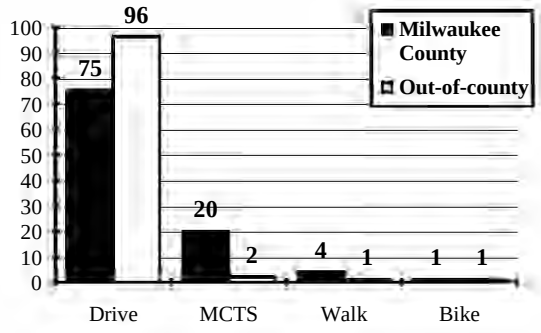
Figure 6-5 Mode Choice for Shopping Trips (%)



SOURCE: Spring 1994; Fall 1994; Spring 1995 UWM student surveys

Transit usage for shopping trips showed a doubling from a rate of 8% prior to the UPASS to 16% during the Fall 1994 and was at a rate of 11% in Spring 1995.

Figure 6-6 Mode Choice for Shopping Trips (%)
Milwaukee County and Out-of-county Respondents



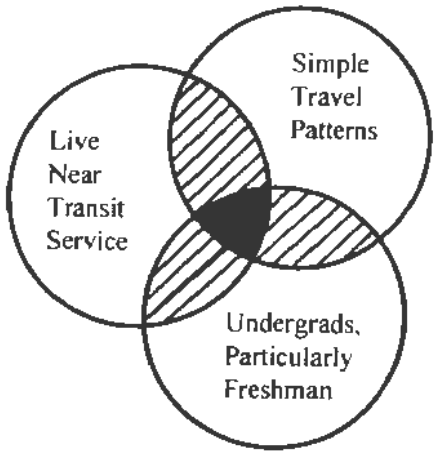
SOURCE: Spring 1995 UWM student survey

Market Segmentation. Previous data have shown an increase in transit ridership to both the university and to work locations. To better understand who is using transit, the Spring 1995 survey results were analyzed by the following characteristics:

(1) Proximity to transit services.

- Students who indicated they live close to a transit route they could take directly to UWM without having to transfer buses. (Indicated as Near Stop or Not Near Stop on the charts).

Mostly Likely UWM Student to Use Transit



(2) Simple or complex trips patterns.

- A simple trip pattern was defined as any trip to UWM that originated at a persons home and returned to the persons home upon leaving the university without any stops in between. A complex trip pattern was defined as any trip to UWM that either originated or ended at a destination other then the persons home. Common origins and destinations included work, shopping, and child care locations. (Indicated as Simple or Complex on the charts).

(3) Student class time.

- The university classifies students into the following three categories: Day-only, Evening-only, and Day/Evening. Day-only students are individuals who only have class before 4:30 PM. Evening-only students are individuals having class only after 4:30 PM. Day/Evening students have classes both before and after 4:30 PM. (Indicated as Day-only, Evening-only, and Day/Evening on the charts).

(4) Full and Part-time Employment

- For the purpose of this study, full-time employed students were identified as any student working 20 or more hours per week. Part-time employed students were any students working less then 20 hours per week. (Indicated as Part-time and Full-time on the charts).

Figures 6-7 and 6-8 use a segmentation chart to demonstrate various transit market capture rates for trips to UWM and to work. In each box of the chart the number of students with the respective characteristics is provided along with the percentage who use transit. For example, Figure 6-7 indicates 74 students had the following characteristics: live near transit service, simple travel patterns, and a day-only student. Of these 74 students, 63.5% indicate they use transit as their normal mode of transportation to UWM.

Figure 6-7 indicates 26% of all trips to UWM were made by MCTS. When respondents who walk are excluded nearly 32% of all vehicle trips to UWM were made by transit. Moving down the flow chart, nearly 57% of the respondents living near transit service used transit for trips to UWM compared to only 12% for individuals not living near transit service. The percentage of transit riders was hardly influenced by student travel patterns or by class time.

57% of students who live near a transit route providing service to UWM indicated transit is their normal mode of transportation to the University.

The segmentation chart indicates the most likely person to use transit had the following characteristics: lived near transit, complex trip patterns, and a day/evening student. Thirty-three individuals had these characteristics, or 67% indicated they used transit on a regular basis. However, since this category of students had a low sample size it may not accurately reflect the true results and it is more likely students who live near transit service, have simple trip patterns, and are day students are the most likely transit users (nearly 64%).

Figure 6-8 indicates 19% of all vehicle trips to work were made by transit while 35% of students living near transit service indicate using transit as their normal mode to work. Six percent of students who did not live near transit indicate transit was their normal mode. A surprising finding was students who live near transit and have complex trip patterns showed a transit usage rate of 51% compared to 28% for students with simple trip patterns living near transit. This could be that students who work are more likely to have complex trip patterns. The most likely student to use transit for work trips had the following characteristics: lived near transit service, complex trip patterns, and worked full-time. Individuals with these characteristics had a transit capture rate of 60%. The least likely student to use transit at a rate of 4% had the following characteristics: did not live near transit, simple trip patterns, and worked full-time.

Figure 6-7 Transit Market Capture Rates for UWM Trips

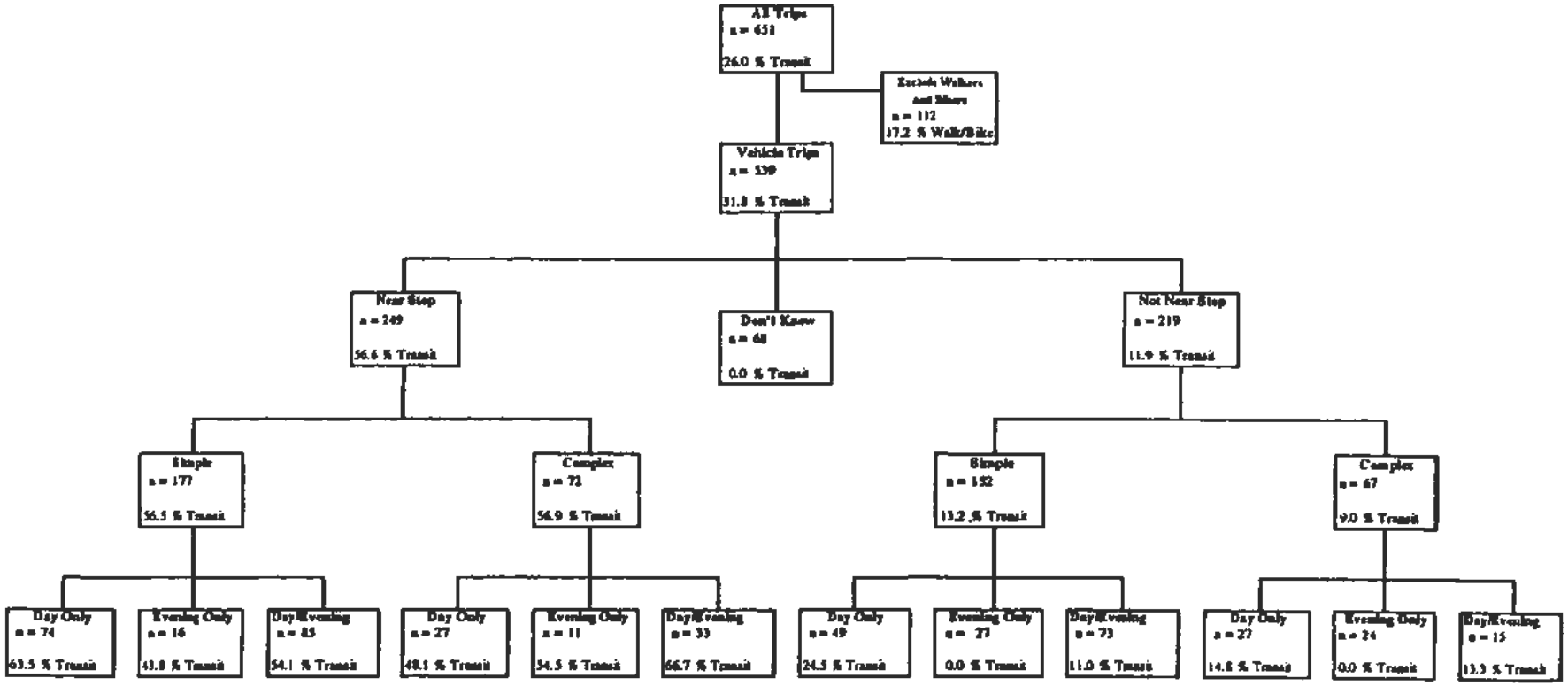
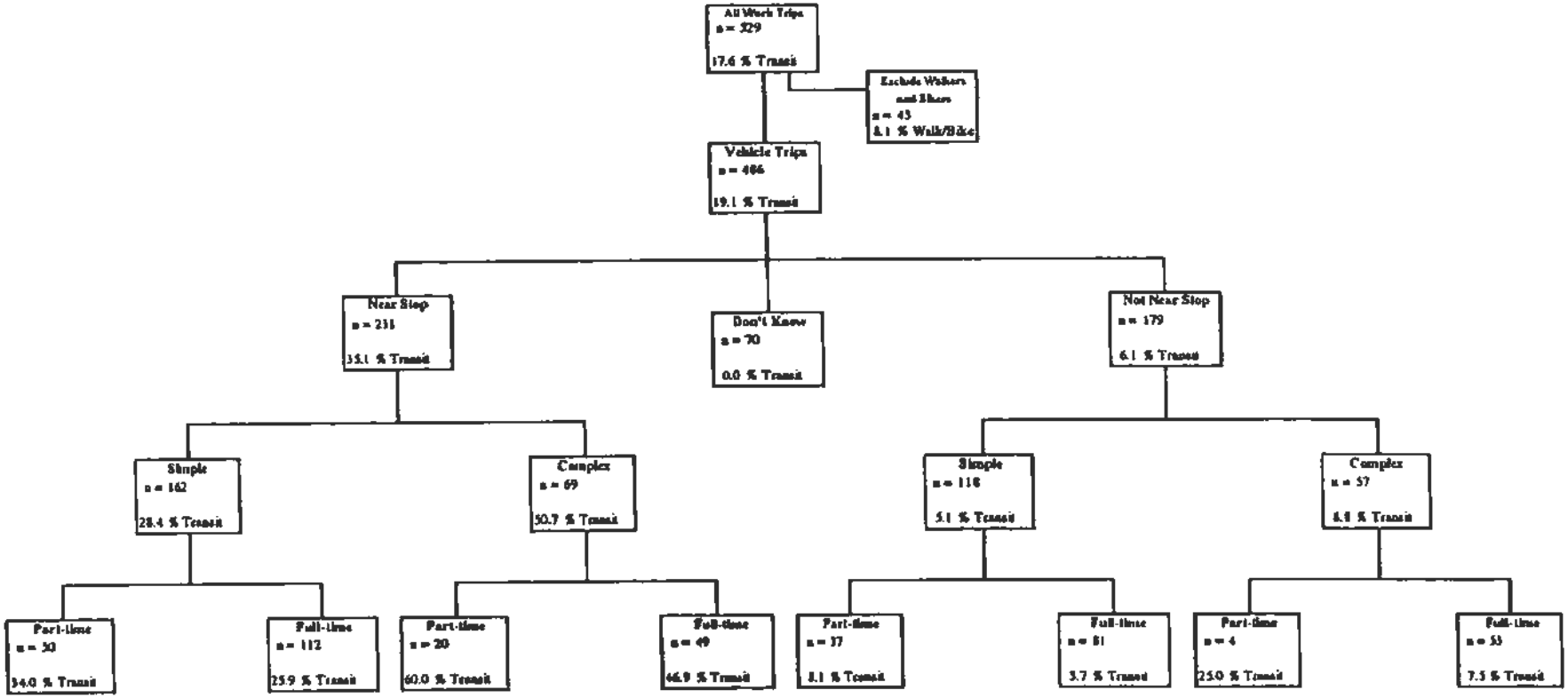


Figure 6-8 Transit Market Capture Rates for Work Trips



Chapter VII

ANTICIPATED UPASS USAGE

Summary of Findings

This chapter examines how students felt a transit pass program would impact their transit ridership prior to the implementation of UPASS. The results presented in this chapter represent student responses from the Spring 1994 survey. The chapter examines various segments of the UWM population.

The following are the main findings of this chapter.

- 44% of all respondents anticipated an increase in transit usage to UWM. Nearly 50% of respondents said the UPASS would increase their transit usage to other locations.
- Freshman anticipated the largest increase in transit usage with nearly 67% indicating the transit pass would increase transit ridership to UWM as well as other locations.
- Students with both day and evening classes anticipated the greatest increase in transit ridership. Nearly 51% anticipated an increase in transit usage to UWM while 59% anticipated an increase to other locations.
- Students employed part-time anticipated a 60% increase in transit ridership to UWM and a 65% increase in ridership to other locations.
- Students living within 5 miles of campus anticipated the greatest increase in transit usage. Approximately 51% said they would increase their transit ridership to UWM while 70% said UPASS would increase their transit usage to other locations.
- In general, students anticipated major increases in transit ridership for trips to UWM while anticipating minor increases in ridership for other trip purposes.

Anticipated UPASS Usage. Prior to the implementation of the UPASS program, students were asked to indicate the impact a transit pass would have on their use of MCTS. The following question appeared on the Spring 1994 survey.

18. Starting next fall, it is possible that UWM will give its students a bus pass for unlimited travel anywhere at any time on the Milwaukee Transit System during the school year.

How do you think this will affect your travel by bus to the university?

_____ MAJOR INCREASE _____ MINOR INCREASE _____NO CHANGE _____ MINOR DECREASE _____ MAJOR DECREASE

How do you think it will affect your travel to other places by bus?

_____ MAJOR INCREASE _____ MINOR INCREASE _____NO CHANGE _____ MINOR DECREASE _____ MAJOR DECREASE

The majority of students indicated the UPASS program would have a major impact on trips to UWM while having a minor impact on trips to other destinations.

Table 7-1 displays the response rates for the major impact, minor impact, and no change categories. The results were cross tabulated by gender, student classification, class time, credit load, employment status, and the distance students live from the University.

Of all respondents expressing an opinion, 44% anticipated some increase in their transit ridership for trips to UWM. Twenty-three percent said the UPASS program would have a major impact on ridership while 21% felt the program would have a minor impact. Approximately 1% of the respondents indicated their transit ridership would decrease.

Nearly half of all respondents indicated they anticipated some increase in transit ridership to other locations. Eighteen percent said the transit pass would have a major impact on their transit ridership while approximately 32% indicated the pass would have a minor impact. In general, survey respondents anticipated the transit pass would have a greater impact on trips to other locations than for trips to UWM. However, this impact was anticipated to be primarily minor increases in transit ridership unlike for trips to UWM where students felt the pass would have a major impact.

Table 7-1 Anticipated Impact of a Transit Pass on Transit Ridership (%)

Survey Respondents:	To UWM			To Other		
	Major Impact	***Minor Impact***	***No Change***	***Major Impact***	***Minor Impact***	***No Change***
All Respondents	22.9	21.2	55.2	17.8	31.6	49.8
Gender						
Male	22.7	21.0	55.2	19.9	29.8	49.2
Female	23.1	21.3	55.0	16.8	32.6	50.0
Student Classification						
Freshman	45.5	21.2	33.3	27.3	39.4	33.3
Sophomores	25.4	28.4	46.3	23.9	34.3	41.8
Juniors	29.7	22.8	45.5	27.3	31.3	39.4
Seniors	22.8	18.1	58.3	13.4	32.3	54.3
Graduates	17.6	16.9	64.9	13.5	29.7	55.4
Special *	8.6	25.7	65.7	8.6	25.7	65.7
Class Time						
Day-only Student	22.4	22.4	54.7	18.8	30.9	49.7
Evening-only Student	15.4	16.9	66.9	13.2	21.7	63.6
Day/Evening Student	28.7	22.1	48.2	20.0	38.5	41.0
Credit Load						
Full-time Student	29.4	21.9	48.0	22.9	33.3	42.7
Part-time Student	16.5	19.5	62.3	12.1	28.6	57.1
Employment Status						
Full-time Employment	18.9	18.9	61.5	15.7	28.4	55.2
Part-time Employment	32.3	27.8	39.1	22.6	42.6	33.9
No Employment	25.0	20.2	53.8	18.3	28.8	51.9
Distance from UWM						
Under 5 Miles	30.8	19.2	49.4	26.3	42.1	30.4
5 Miles to 10 Miles	23.1	30.6	46.3	16.5	33.1	50.4
10.1 Miles to 15 Miles	19.2	17.8	63.0	11.1	29.2	59.7
15.1 Miles to 20 Miles	22.5	10.0	67.5	10.0	17.5	72.5
Over 20 Miles	5.6	13.9	77.8	5.6	15.3	77.8

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: Results may not equal 100% since the table does not include anticipated decreases in transit ridership.

Source: Spring 1994 UWM Student Survey

Anticipated Usage by Gender. The survey results when cross tabulated by gender show very little variation between male and female respondents. Figure 7-1 shows approximately 44% of male and female respondents anticipated some increase in their transit ridership to UWM. Approximately 23% anticipated a major increase in transit ridership while 21% felt the increase would be minor.

Approximately 44% of respondents anticipated an increase in transit ridership to UWM while nearly 50% anticipated an increase in ridership to other locations.

Figure 7-1 Anticipated Increase in Transit Ridership by Gender *To UWM*

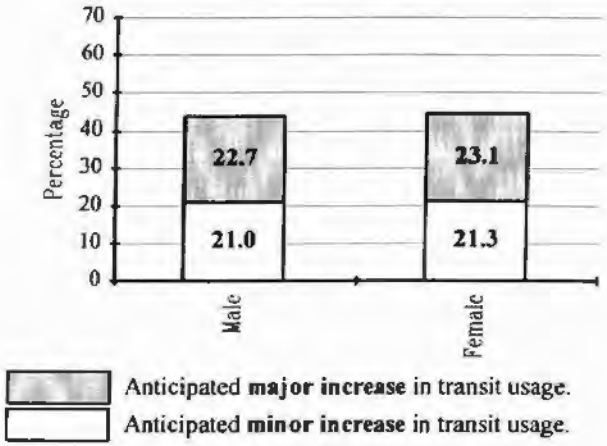


Figure 7-2 Anticipated Increase in Transit Ridership by Gender *To Other Locations*

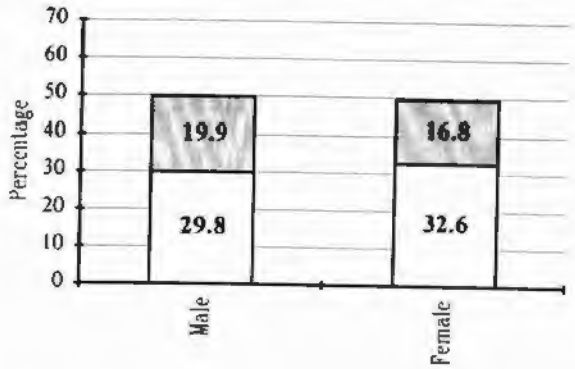


Figure 7-2 shows nearly half of the respondents anticipated some increase in their transit ridership to other locations. Approximately 20% of male respondents and 17% of female respondents anticipated that a transit pass would result in a major increase in their transit ridership. Thirty percent of male respondents and 33% of female respondents indicated the impact would be a minor increase in ridership.

In general, both male and female respondents anticipated using the transit pass more frequently for trips to other locations compared to trips to UWM. However, the majority of respondents using the pass for trips to other locations indicated they anticipated a minor increase in transit ridership while the majority of respondents using the pass for trips to UWM anticipated primarily a major increase in ridership.

Anticipated Usage by Student Classification. The results when cross tabulated by student classification indicate undergraduates, particularly freshman, sophomores, and juniors, were the most likely to use a transit pass. Figures 7-3 and 7-4 show as students move up in classification their anticipated use of UPASS declined. Freshman students anticipated the greatest impact with 67% expecting some increase in transit ridership.

Nearly 60% of freshman, sophomores, and juniors indicated they anticipated an increase in their transit usage to locations other then UWM.

Figure 7-3 Anticipated Increase in Transit Ridership by Student Classification
To UWM

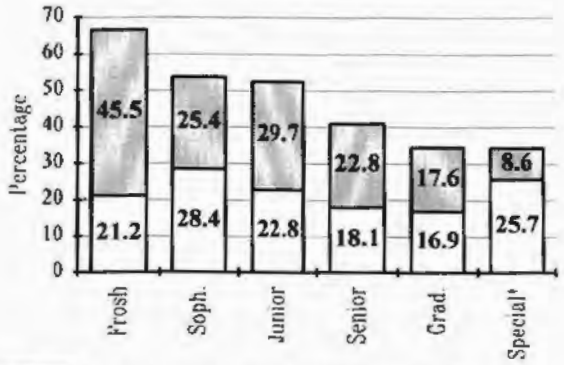
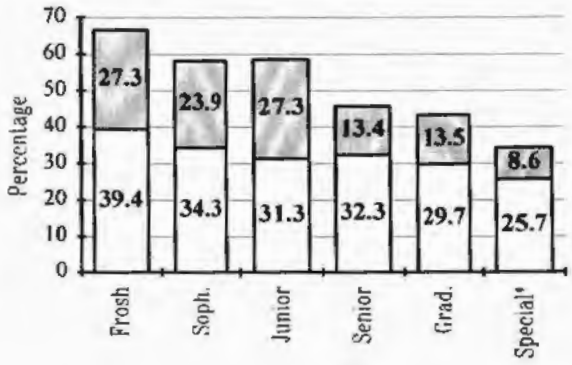


Figure 7-4 Anticipated Increase in Transit Ridership by Student Classification
To Other Locations



Anticipated **major increase** in transit usage.
Anticipated **minor increase** in transit usage.

* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.

Figure 7-3 shows 46% of freshman anticipated a major increase in transit ridership to UWM with 21% indicating the impact would be minor. Graduate and special students anticipated the least smallest impact with roughly 35% to 40% expecting some increase in transit usage.

Figure 7-4 indicates nearly 60% of freshman, sophomores, and juniors anticipated some increase in transit ridership to other locations. The majority of respondents anticipated the impact on ridership to other locations would be primarily a minor increase in ridership.

Anticipated Usage by Class Time. Using the University's classification of day-only students, evening-only students, and day/evening students, the survey results were cross tabulated to determine who anticipated the greatest increase in transit ridership. Day/evening students anticipated the highest increase in transit ridership with 51% of the respondents indicating a transit pass would increase their ridership to UWM. Evening-only students anticipated the least impact with approximately 32% indicating there would be some increase in their transit ridership.

51% of respondents who reported having both day and evening classes anticipated an increase in their transit usage to UWM while 59% anticipated an increase to other locations.

Figure 7-5 Anticipated Increase in Transit Ridership by Class Time *To UWM*

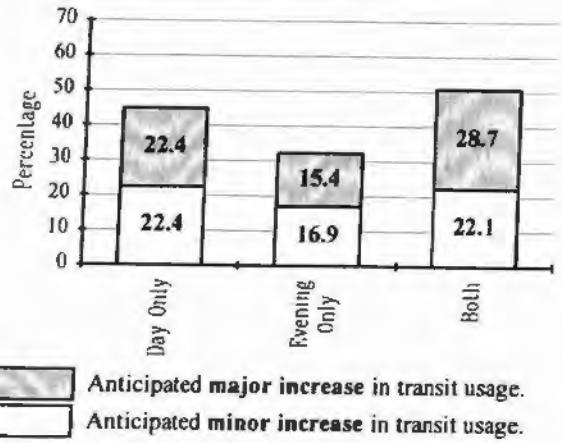
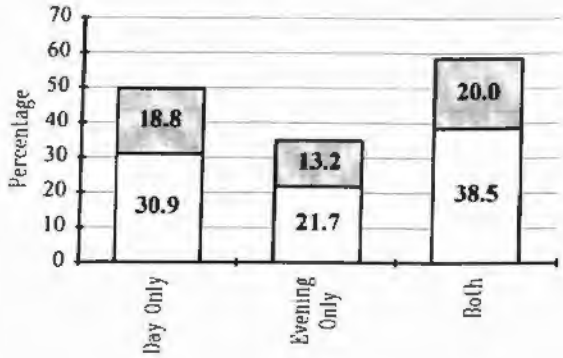


Figure 7-6 Anticipated Increase by Class Time Ridership by Class Time *To Other Locations*



Further analysis shows day/evening respondents also anticipated using UPASS for other trip purposes. Fifty-eight percent of these respondents indicate they anticipated a major or minor increase in transit usage. Day-only students anticipated the second highest impact on ridership to other locations at a rate of 50% while 35% of evening-only students anticipated an increase. The majority of students felt the impact on transit usage would be primarily a minor increase in ridership for trips to locations other then UWM.

Anticipated Usage by Credit Load. Using the University classification system, survey respondents were divided into full-time or part-time students based upon credit load. Any undergraduate taking 12 or more credits is considered to be a full-time student while any graduate student taking 9 or more credits is considered full-time. Figures 7-7 and 7-8 show full-time students anticipated a greater increase in ridership compared to part-time students for trips to UWM and other locations.

51% of Full-time students anticipated some increase in their use of the transit system to UWM while 56% anticipated some increase in their ridership to other locations.

Figure 7-7 Anticipated Increase in Transit Ridership by Credit Load
To UWM

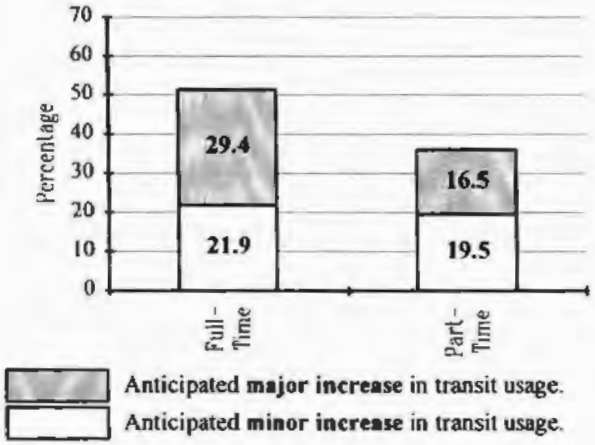


Figure 7-8 Anticipated Increase in Transit Ridership by Credit Load
To Other Locations

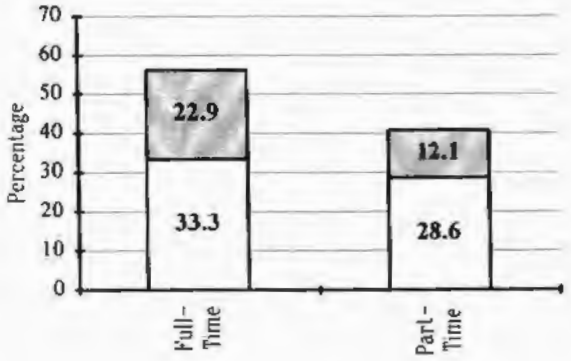


Figure 7-7 indicates 52% of full-time students anticipated either a major or minor increase in transit usage for trips to UWM. Twenty-nine percent felt the transit pass would have a major impact on their MCTS ridership. Part-time students did not anticipate as great of impact with 36% anticipating some increase in transit usage.

Figure 7-8 shows 56% of full-time students felt UPASS would have some increase on their transit usage to other locations while 41% of part-time students anticipated some increase. The impact on ridership to other locations was expected to be primarily minor increases.

Anticipated Usage by Employment Status. Survey results were analyzed by full-time employed students (20 plus hours per week), part-time employed students (less than 20 hours per week), and those students not employed. Figure 7-9 shows part-time employed students anticipated approximately a 60% increase in transit ridership for UWM trips. Thirty-two percent of students indicated the impact would be a major increase in their ridership. Forty-five percent of students not employed and 38% of full-time employed students anticipated some increase in transit ridership to UWM.

65% of Part-time employed students anticipated some increase in their transit ridership to other destinations with the existence of the UPASS.

Figure 7-9 Anticipated Increase in Transit Ridership by Employment Status
To UWM

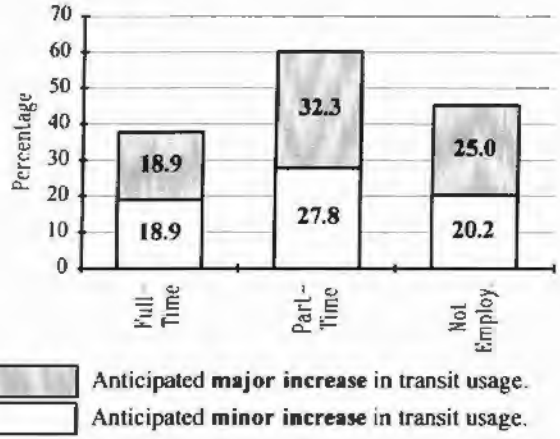


Figure 7-10 Anticipated Increase in Transit Ridership by Employment Status
To Other Locations

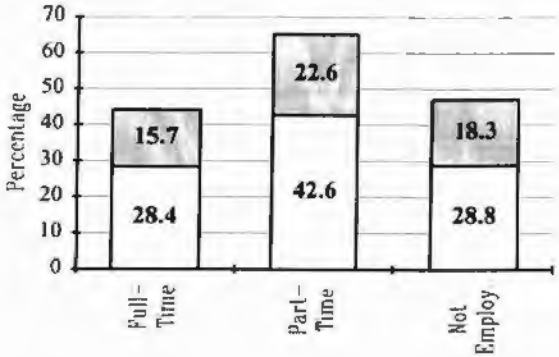


Figure 7-10 shows part-time employed students also anticipated the largest increase in ridership to other locations. Nearly 65% of these respondents anticipated some increase in transit ridership. Approximately 43% felt the impact would only be a minor increase. Full-time employed students anticipated approximately a 44% increase in their transit usage to other locations. Respondents who were not employed anticipated a 47% increase in transit ridership.

Respondents felt the transit pass would have more of a major impact on transit ridership for trips to the University and primarily a minor impact for trips to other locations.

Anticipated Usage by Distance from UWM. Using 5 mile increments, student responses were grouped according to how far away the respondent lived from the University. Figures 7-11 and 7-12 show the anticipated impact of a transit pass on transit ridership for trips to UWM and other locations. Figure 7-11 indicates 54% of students living 5 to 10 miles from campus anticipated the greatest increase in ridership for trips to UWM. Fifty percent of students living within 5 miles of UWM anticipated some increase in ridership with nearly 31% indicating the impact would be a major increase.

Students living within 5 miles of the University anticipated the largest percentage increase in transit ridership.

Figure 7-11 Anticipated Increase in Transit Ridership by Distance from UWM
To UWM

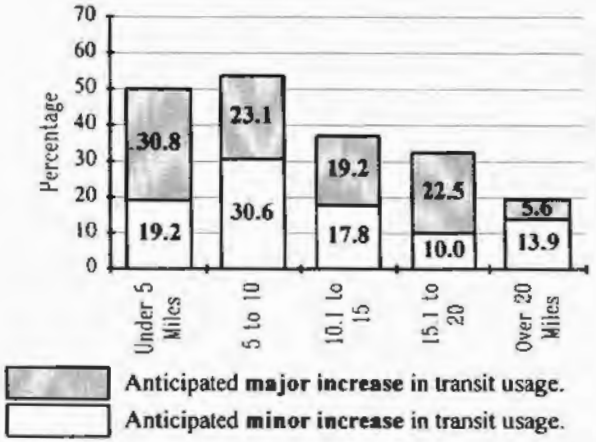


Figure 7-12 Anticipated Increase in Transit Ridership by Distance from UWM
To Other Locations

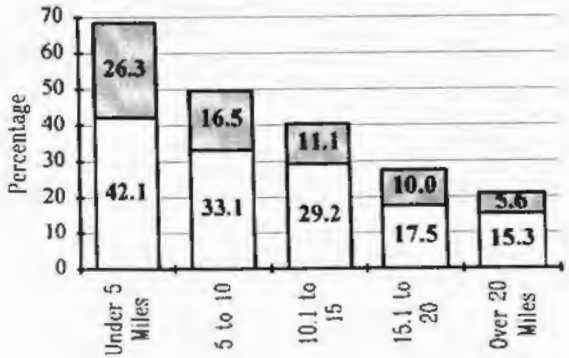


Figure 7-12 shows 68% of students living under 5 miles from campus anticipated some increase in ridership to other locations. Forty-two percent of these respondents felt the impact would be a minor increase in ridership while 26% indicated UPASS would result in a major increase in ridership.

As might be expected, students living greater distances from campus anticipated the least impact on transit ridership. Approximately 20% of students living over 20 miles from campus anticipated some increase in their transit usage to UWM with nearly 24% anticipating an increase to other locations.

Chapter VIII

UPASS USAGE

Summary of Findings

This chapter examines the impact UPASS had on transit ridership since the implementation of the program in the Fall 1994. MCTS ridership counts and University surveys were analyzed to determine the impact.

The following are the main findings of this chapter.

- MCTS ridership counts show an increase in transit ridership between 31% to 45% for trips to UWM after the implementation of UPASS.
- Fall 1994 survey results show a 34.0% increase in transit ridership for trips to UWM while Spring 1995 survey results show a 35.2% increase compared to pre-UPASS transit ridership.
- Milwaukee County respondents showed an increase in transit ridership of 41.8% for trips to UWM while out-of-county respondents showed an increase of 22.8%. (Spring 1994 ridership compared to Spring 1995 ridership).
- Over 50% of students who did not attend UWM in the Spring 1994 report using transit as their normal mode of transportation to UWM after the implementation of UPASS. The majority of these students indicate using transit at least one or more times per week.
- Nearly 45% of all freshman and sophomores indicate using transit at least one or more times per week to attend UWM during the Fall 1994.
- Over 40% of undergraduates living in Milwaukee County indicate using transit at least one or more times per week for UWM trips during the Spring 1995.
- Between 11% and 19% of regular UPARK shuttlebus users indicate using UPASS at least one or more times per week to attend UWM during the Spring 1995.

Milwaukee County Transit Ridership Counts. MCTS conducted on-board ridership counts during the Fall 1994 and Spring 1995 semesters to measure the impact of UPASS on transit ridership. Table 8-1 displays the percentage increase UPASS had on transit ridership as compared to pre-UPASS ridership for University trips. The table is broken-down by the eleven transit routes serving UWM including 5 express routes and 6 regular routes.

It should be noted that the on-board ridership counts give a different change in transit use then the mode split question as represented in Chapter 6-Mode Choice. This difference is probably due to the fact that respondents may use different means of travel to the University and also do not come to the University everyday. Thus the "normal" means of travel for mode split may not agree with on-board ridership counts. When frequency of use is taken into account the surveys and on-board counts were in close agreement.

MCTS on-board counts show between a 31% and 45% increase in transit ridership for trips to UWM compared to pre-UPASS ridership.

MCTS ridership counts show between a 31% to 45% increase in transit ridership on routes serving UWM. The majority of this increase occurred on express routes which show between a 75% to 136% increase in ridership, or nearly a doubling of riders compared to pre-UPASS. Regular transit routes serving UWM have also shown an increase between 21% to 30%.

The 40 route has shown the largest increase in ridership with four to five times the number of students riding compared to pre-UPASS counts. The 30 Maryland route showed the largest ridership increase among regular transit service routes at a rate of 40% to 65%.

Two routes did show a decrease in ridership compared to pre-UPASS semesters. These routes were the 60 and 62 which run along Capitol Drive. A possible explanation for this decrease is that the 39U (an express route implemented as part of the UPASS program) operated along the same route as the 60 and 62. Beginning in the Fall 1995 semester, the 39U was changed to the 63U which operates along a different route from the 60 and 62.

Table 8-1 UPASS Impact on MCTS Ridership to UWM (%)

	Route	Spring 1994 to Fall 1994	Fall 1993 to Fall 1994	Spring 1994 to Spring 1995
EXPRESS	**5**	107.5	24.9	64.8
	16	30.8	23.8	61.2
	39U *	---	---	---
	40	420.9	578.8	189.5
	49U *	---	---	---
	SUBTOTAL	***136.3***	***75.1***	***95.0***
REGULAR	**15**	18.8	28.8	27.6
	21	33.8	11.0	22.0
	22	53.7	41.5	26.5
	30 Downer	33.7	25.3	20.5
	30 Maryland	42.6	65.0	39.8
	60	8.7	(16.6)	13.7
	62	13.1	(8.8)	2.5
	SUBTOTAL	***30.0***	***21.2***	***22.4***
	TOTAL	***45.3***	***30.7***	***32.9***

* Route did not exist prior to the Fall 1994. Established as part of the UPASS program.
( ) Indicates a decrease in transit ridership.

SOURCE: Milwaukee County Transit System

Survey Transit Ridership Findings. The University surveys were examined to determine if they confirm MCTS on-board counts. Students were asked to provide their transit ridership during the Fall 1994 and Spring 1995 as well as their ridership prior to UPASS (Spring 1994). Table 8-2 shows the overall increase the UPASS program had on transit ridership for trips to UWM, to work, to shopping, and to other locations. The increases in ridership to UWM include students who did not attend UWM during the Spring 1994. The increases in transit ridership to work, to shopping, and to other locations include only students who were at the University prior to the UPASS program. This table considers the frequency of use to the various locations.

Survey results show approximately a 35% increase in transit ridership for trips to UWM compared to pre-UPASS ridership.

Table 8-2 UPASS Impact on Transit Ridership - Survey Findings (%)

Location	**Spring 1994 to Fall 1994**	**Spring 1994 to Spring 1995**		
		All Respondents	*Milwaukee County*	*Out-of-county*
UWM	34.0	35.2	41.8	22.8
Work	14.3	18.4	25.1	4.0
Shopping	16.1	16.8	21.5	6.4
Other	17.6	18.5	25.1	4.9

The survey results confirm the on-board ridership counts conducted by MCTS. The Fall 1994 survey showed a 34% increase in MCTS compared to pre-UPASS transit ridership and the Spring 1995 survey showed approximately a 35% increase. Milwaukee County respondents showed the greatest increase with nearly a 42% increase in ridership while out-of-county respondents show approximately a 23% increase for trips to UWM.

The University surveys also provide an indication of transit ridership increase for other trip purposes. The results from the Fall 1994 show a 14% to 17% increase in ridership for trips to work, to shopping, and to other locations. The Spring 1995 survey shows approximately a 17% to 19% increase over the Spring 1994. These results would likely be higher if they included students who did not attend in the Spring 1994. Further detail of transit ridership frequency is included in Appendix F in Tables F1 to F16.

New Student Transit Ridership. Students who did not attend UWM during the Spring 1994 were analyzed to determine the impact UPASS had on their transit ridership. Table 8-3 displays the ridership frequency of new students for the respective survey respondent. The overall results indicate over one-half of new students did use UPASS at sometime during the Fall 1994 or Spring 1995.

The Fall 1994 survey results show nearly 51% of new students indicated they had used UPASS. Approximately 43% of these respondents indicated using UPASS at least one or more times per week to attend UWM.

Table 8-3 New Student Transit Ridership for UWM Trips (%)

Survey Respondent	Did Not Ride	Less Than 1 Time/Month	1 to 3 Times per Month	1 to 2 Times per Week	3 to 5 Times per Week	More than 5 Times/Week
Fall 1994	n = 59 49.2	n = 2 1.7	n = 8 6.7	n = 10 8.3	n = 13 10.8	n = 28 23.3
Spring 1995 *All Respondents*	n = 73 41.7	n = 18 10.3	n = 10 5.7	n = 19 10.9	n = 26 14.9	n = 29 16.6
Milwaukee County Respondents	n = 35 32.7	n = 12 11.2	n = 6 5.6	n = 14 13.1	n = 18 16.8	n = 22 20.6
Out-of-county Respondents	n = 38 55.9	n = 6 8.8	n = 4 5.9	n = 5 7.4	n = 8 11.8	n = 7 10.3

The Spring 1995 survey results indicate nearly 58% of the survey respondents were using the UPASS. Approximately 42% of these respondents indicated using transit at least one or more times per week for University trips.

Further analysis by Milwaukee County and out-of-county respondents indicate nearly two out of every three students living in Milwaukee County used MCTS at sometime during the Spring 1995 to attend classes. Approximately 50% of these students indicated using MCTS at least once per week for trips to UWM. New out-of-county students showed a usage rate of 44% during the Spring 1995. Of these respondents, 29% indicated using UPASS at least one time per week to travel to campus.

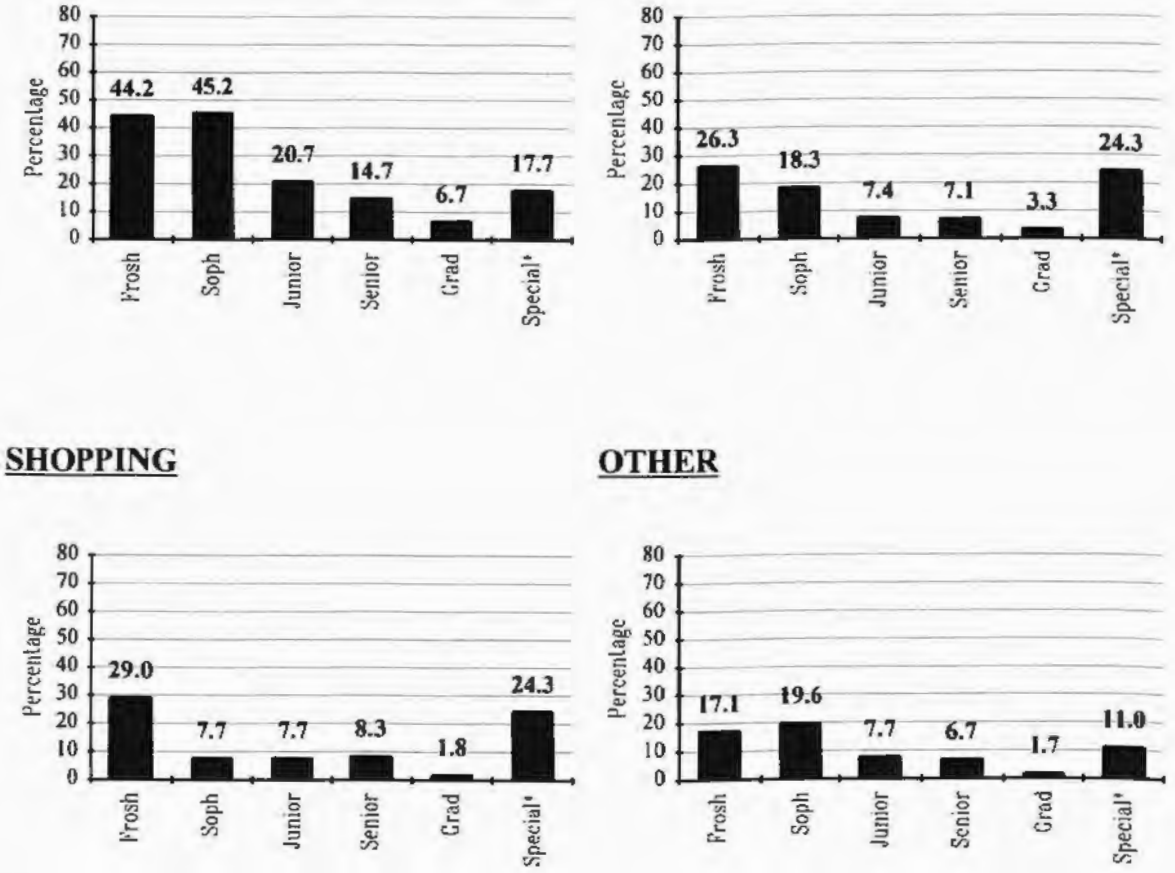
Frequency of UPASS Usage-Fall 1994. For the purpose of this section, the following figures represent transit ridership of survey respondents who use MCTS at least one or more times per week for trips to UWM, to work, to shopping, and to other locations. The results presented were obtained from the Fall 1994 survey and represent transit ridership during the Fall 1994 semester.

Figure 8-1 indicates nearly 45% of freshman and sophomore respondents were riding MCTS at least once per week for trips to UWM. Transit ridership dropped off beginning with juniors who indicated a usage rate of approximately 20%. Graduate students reported the least amount of transit usage at a rate of 7%.

Students also reported a high rate of transit ridership to other locations. Freshman reported using the transit pass at a greater frequency compared to other student classifications. Approximately one-quarter of freshman students indicated that for work trips and shopping trips they used UPASS at least one time per week. Graduate students reported the least use of the transit pass with only 3% using the pass for work trips and approximately 2% using it for shopping trips and other trip purposes.

Figure 8-1 UPASS Usage for Various Trip Purposes by Student Classification-Fall 1994

Nearly 45% of all freshman and sophomore respondents reported using UPASS at least one time per week to attend classes at the university.



* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: These figures represent students who use transit one or more times per week for the respective trip purpose.

SOURCE: Fall 1994 UWM Student Survey

Frequency of UPASS Usage-Spring 1995. The results obtained from the Spring 1995 survey are shown in Figures 8-2 to 8-4. Figure 8-2 displays the results of all the surveys for trips to UWM, to work, to shopping, and to other locations. Figures 8-3 and 8-4 display the results of Milwaukee County and out-of-county respondents for various trip purposes.

Figure 8-2 indicates at least one out of every three undergraduates ride transit at least once per week for trips to UWM. Freshman had the highest frequency of use with nearly 48% indicating they ride transit once per week to UWM. Sophomores and Juniors also reported a high frequency of use with 42% to 44% indicating they use the bus for trips to the University.

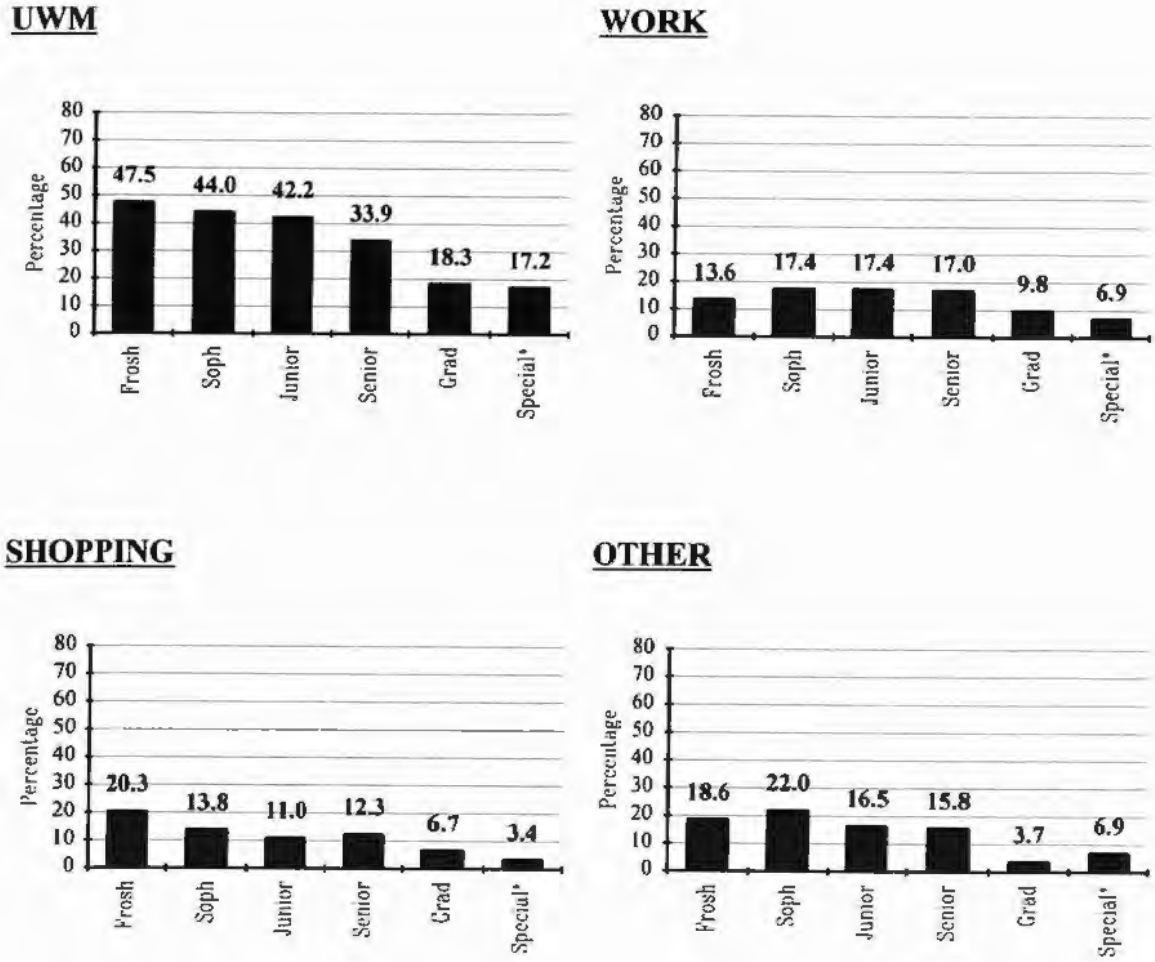
As mentioned previously, approximately 48% of freshman respondents indicated they rode the bus at least once per week for trips to UWM. Further analysis of the results show there is a significant difference between Milwaukee County freshman and out-of-county freshman. The results indicate 70.3% of freshman living in Milwaukee County ride the bus at least once per week to UWM compared to 41.2% out-of-county freshman who ride at least once per week. As will be seen in the following figures, all students living in Milwaukee County had higher rates of UPASS use as compared to out-of-county respondents.

Students also indicated using UPASS for work, shopping, and other trip purposes. Survey results indicate between 10% to 17% of students reported using the UPASS at least once per week for trips to their place of employment. Approximately 17% of sophomores, juniors, and seniors all reported using the transit pass for work trips.

Further analysis shows approximately 11% to 20% use the transit pass at least once per week for shopping trips while 16% to 22% use the pass for other trip purposes. Graduate students reported using the transit pass the least with approximately 7% indicating they use the transit pass for shopping trips while 4% said they use the pass for other trip purposes.

Figure 8-2 UPASS Usage for Various Trip Purposes by Student Classification-Spring 1995

Between 34% and 48% of all undergraduate students indicate riding transit at least once per week for trips to UWM.



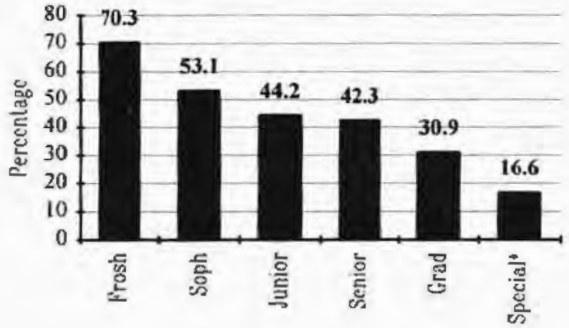
* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: These figures represent students who use transit one or more times per week for the respective trip purpose.

SOURCE: Spring 1995 UWM Student Survey

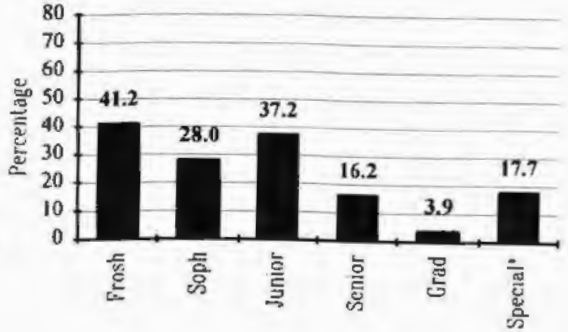
Figure 8-3 UPASS Usage for Various Trip Purposes by Student Classification-Spring 1995
Milwaukee County and Out-of-county Respondents

UWM Trips

Milwaukee County



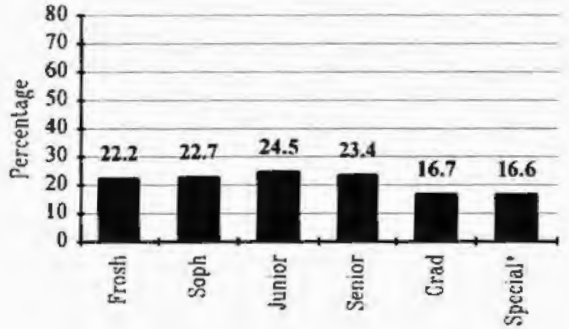
Out-of-county



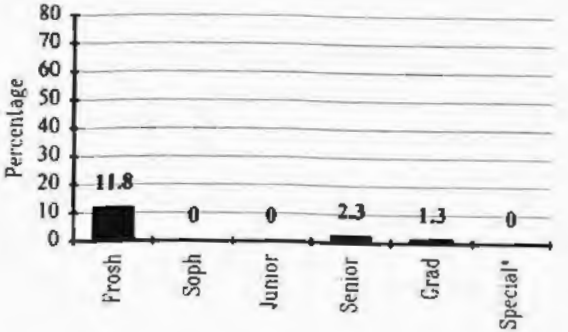
Over 40% of undergraduates living in Milwaukee County use their UPASS at least once per week for trips to the University.

WORK Trips

Milwaukee County



Out-of-county



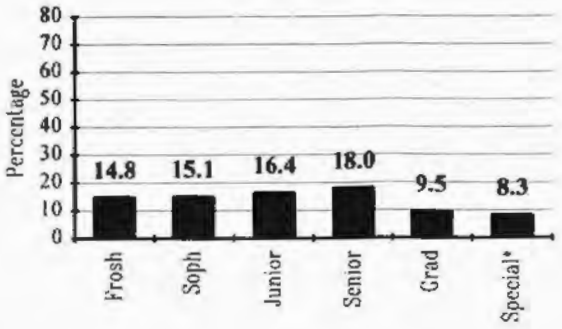
* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: These figures represent students who use transit one or more times per week for the respective trip purpose.

SOURCE: Spring 1995 UWM Student Survey

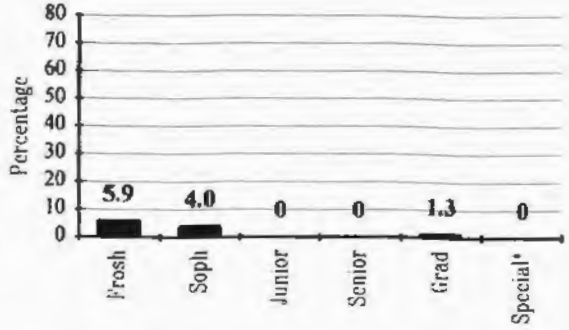
Figure 8-4 UPASS Usage for Various Trip Purposes by Student Classification-Spring 1995
(Milwaukee County and Out-of-county Responses)

SHOPPING Trips

Milwaukee County

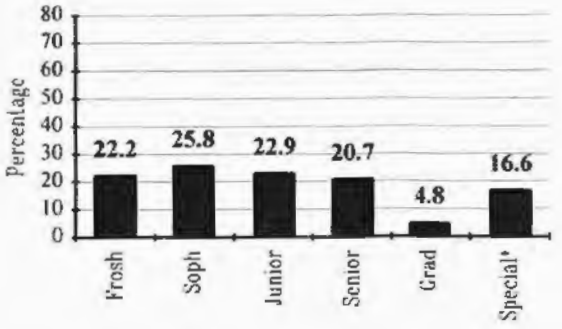


Out-of-county

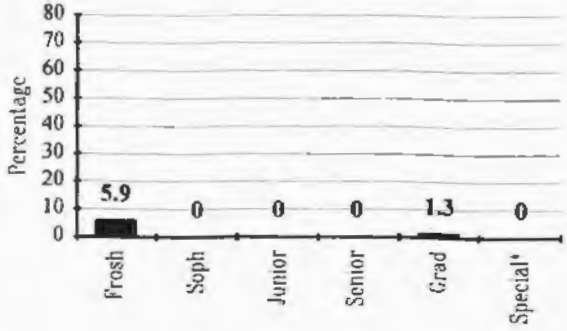


OTHER Trips

Milwaukee County



Out-of-county



* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: These figures represent students who use transit one or more times per week for the respective trip purpose.

SOURCE: Spring 1995 UWM Student Survey

"Students living in Milwaukee County will find the UPASS to very beneficial."

- A focus group participant who lives out-of-county

Frequency of UPASS Usage-UPARK Shuttlebus Users. The UPARK shuttlebus survey asked students how often they use UPASS for various trip purposes. Results indicate a few students who normally use the UPARK shuttlebus service do take advantage of the UPASS program.

Over 10% of the UPARK survey respondents indicate they use their UPASS at least once per week to attend the University. Freshman students tend to use the pass the most of any student group as nearly one in every five respondents indicated using the pass at least once per week for trips to UWM. Seniors also reported a high percentage of transit usage as nearly 19% indicate using UPASS at least once per week to attend UWM.

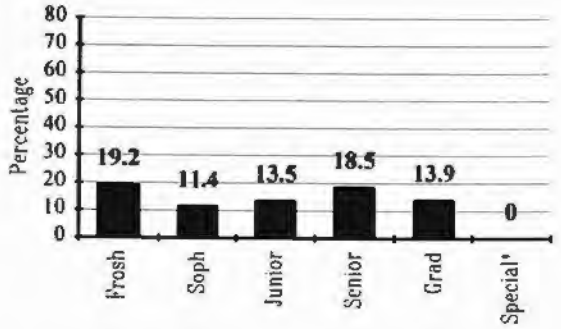
A few students also indicate using the UPASS for work, shopping, and other trip purposes. Freshman report using the UPASS the most often with 7% indicating they use it for work trips, 8% for shopping trips, and 7% for other trip purposes. Other student classifications reported they rarely use UPASS for trips to places besides UWM. With the exception of 6% of graduate students who indicate using UPASS for shopping, no other student classification had a transit usage rate higher than 3% for work, shopping, or other trip purposes.

Figure 8-5 displays the percentage of UPARK survey respondents who indicated using UPASS at least once per week for the various trip purposes.

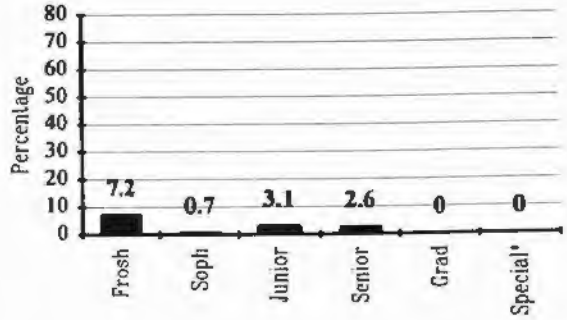
Figure 8-5 UPASS Usage for Various Trip Purposes by Student Classification
UPARK Shuttlebus Survey-Spring 1995

Between 11% and 19% of UPARK survey respondents indicate they use their UPASS at least once per week for trips to the University.

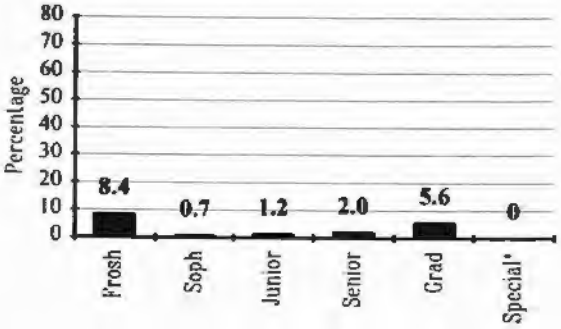
UWM



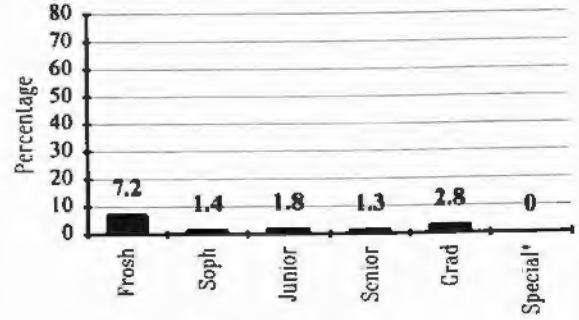
WORK



SHOPPING



OTHER



* While this category fits an identifiable pattern, it is not statistically significant due to a small sample size.
NOTE: These figures represent students who use transit one or more times per week for the respective trip purpose.

SOURCE: UPARK Shuttlebus Student Survey, Spring 1995

Transit Trips Made per Week. Students were asked to indicate on the Spring 1995 survey how often they use their UPASS per week for the various trip purposes. The following question appeared on the survey.

22. For the **past week**, please check the days which you used your UPASS to attend the following :

	SUN.	MON.	TUE.	WED.	THUR.	FRI.	SAT.
UWM	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Work	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Shopping	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Other	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Nearly 90% of all UPASS trips made by students living outside Milwaukee County are for trips to UWM.

Table 8-4 displays the number of UPASS trips made by the day of the week for various trip purposes. The results indicate that survey respondents made 1,327 trips with their UPASS during a one week period. Of these trips, 720 (54.3%) were made to UWM.

Figure 8-6 indicates nearly one-half of the trips made by Milwaukee County respondents and 89% of trips made by out-of-county respondents were to UWM. Milwaukee County respondents also indicated using the UPASS for work trips at a rate of 25% compared to 5% for out-of-county respondents.

Figure 8-7 indicates that during a typical week between Monday and Friday, nearly 61% of the UPASS trips made were to UWM. A further analysis indicates the majority of UPASS trips made on weekends are to places other than UWM. In all, respondents indicated they made 187 UPASS trips on Saturday and Sunday. Of these weekend trips, only 27 (14.4%) were made to UWM.

Table 8-4 UPASS Trips Made by Day of Week

Trip Destination		WEEKDAYS					WEEKENDS		*Total*
		Mon.	**Tue.**	**Wed.**	**Thur.**	**Fri.**	**Sat.**	**Sun.**	
UWM	**Milw.**	123	115	121	106	86	14	12	***577***
	Out	32	30	33	28	19	0	1	***143***
	Sub-Total	*155*	*145*	*154*	*134*	*105*	*14*	*13*	***720***
Work	**Milw.**	45	48	46	50	51	30	22	***292***
	Out	2	1	2	1	1	1	0	***8***
	Sub-Total	*47*	*49*	*48*	*51*	*52*	*31*	*22*	***300***
Shopping	**Milw.**	14	10	14	8	22	26	19	***113***
	Out	0	0	1	1	2	0	1	***5***
	Sub-Total	*14*	*10*	*15*	*9*	*24*	*26*	*20*	***118***
Other	**Milw.**	25	21	25	19	34	33	27	***184***
	Out	0	2	2	0	0	1	0	***5***
	Sub-Total	*25*	*23*	*27*	*19*	*34*	*34*	*27*	***189***
Total	**Milw.**	207	194	206	183	193	103	80	***1166***
	Out	34	33	38	30	22	2	2	***161***
	Total	***241***	***227***	***244***	***213***	***215***	***105***	***82***	***1,327***

Milwaukee County Responses = 366 Out-of-county Responses = 219

Figure 8-6 UPASS Trips Made by Milwaukee County and Out-of-county Residents (%)

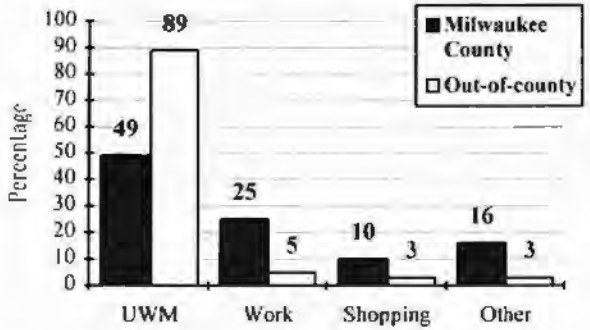


Figure 8-7 UPASS Trips Made by Weekdays and Weekends (%)

Source: Spring 1995 UWM student survey

Chapter IX

Impact Of Upass

Summary of Findings

This chapter examines the UPASS impact on vehicle trips to campus, vehicle miles traveled, emission rates, parking demand, and other travel related issues. Information regarding mode choice, transit trips made per week, and average trip length are used to estimate values for these impacts. Calculations are included in Appendix G.

The following are the main findings of this chapter.

- An estimated 222,055 vehicle trips were diverted away from the UWM campus over the 1994-95 academic school year due to the existence of the UPASS program. This results in approximately 1,400 to 1,500 vehicle trips diverted away from UWM per school day.

- Nearly 5.1 million vehicle miles of travel (VMT) were saved on trips to UWM during the first year of UPASS. This results in approximately 34,000 VMT saved per school day.

- UPASS resulted in an estimated savings of 242,108 gallons of fuel based upon an average of 21 miles per gallon for fuel consumption. (Source: American Automobile Association)

- UPASS resulted in an estimated dollar savings in fuel costs to students of $295,371 based upon an average of $1.22 per gallon of gasoline. (Source: American Automobile Association)

- Fall 1994 survey respondents indicate parking at UWM was easier since the implementation of UPASS. 19% of respondents indicate it was easier to park on-campus while 16% said it was easier to park off-campus.

- UPASS resulted in a 20% reduction in emission rates for trips to UWM and reduced VOC emissions by 244 lb. per day, nitrogen oxides by 264 lb. per day, and carbon monoxide by 1,662 lb. per day within Southeastern Wisconsin.

- UPASS has had some impact on students decisions to attend UWM. 15% of respondents from the Spring 1995 indicate UPASS will have a major impact on their decision to attend UWM in future semesters.

Vehicle Trips Diverted Away from Campus. Using the mode choice results presented in Chapter 6, the number of vehicle trips that have been diverted away from the UWM campus since the implementation of the UPASS program was estimated. The calculations are based upon student enrollment, students attending class by day of week, and mode choice. The results indicate that 221,055 vehicle trips were diverted away from the UWM area during the 1994-95 academic school year. The details of these calculations are given in Appendix G.

Reduction in VMT. By diverting over 221,000 vehicle trips away from the University has resulted in a reduction in vehicle miles traveled to UWM. It is possible to estimate the impact by using the average trip length of students traveling to UWM. The Spring 1994 survey showed the average length of a one-way trip to the University was 11.5 miles, or approximately 23 miles for a round trip.

Assuming the average trip length is consistent for each semester, it is estimated that 2,542,133 VMT were saved on one-way trips and approximately 5,084,265 VMT were saved for round trips during the 1994-95 academic school year. This calculation represents only trips to UWM and does not include work trips, shopping trips, and other trips. If these trips were included, the reduction in VMT would be greater.

Reduction in Emissions. Directly related to the reduction in VMT is the reduction in vehicle emissions. Using the Southeastern Wisconsin Regional Planning Commissions (SEWRPC) long range transportation plan, the average weekday emission rates for volatile organic compounds, nitrogen oxides, and carbon monoxide were identified. The SEWRPC plan was also used to identify that there were 33,072,000 VMT per average weekday within the region during 1991.[3]

The UPASS program saved an estimated 2,680,144 VMT per semester for trips to the University which results in approximately 33,895 VMT saved per average weekday. This reduction of 33,895 VMT per average weekday results in approximately a 20% reduction

[3] Southeastern Wisconsin Regional Planning Commission, "A Regional Transportation System Plan For Southeastern Wisconsin: 2010," Planning Report Number 41, December 1994.

in emission rates for trips to UWM. This translates into a 244 lb. per day reduction in volatile organic compounds, a 264 lb. per day reduction in nitrogen oxides, and a 1662 lb. per day reduction in carbon monoxide. Table 9-1 shows the UPASS impact on reducing emission rates within the region.

Table 9-1 Average Weekday Emission Rates for Southeast Wisconsin (tons)

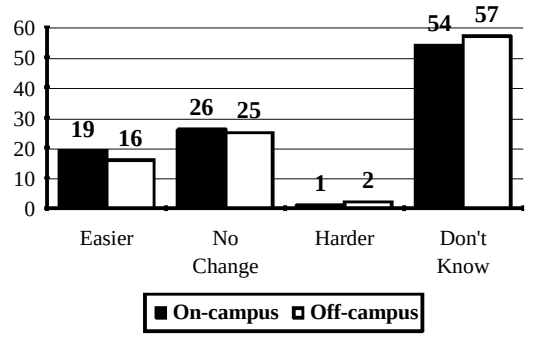
Emission Rates	**Volatile Organic Compounds**	**Nitrogen Oxides**	**Carbon Monoxide**
Region *	119.200	129.800	815.100
UPASS Reduction ^	0.122	0.132	0.831

* Based upon the SEWRPC Long Range Transportation Plan.

^ The UPASS reduction is calculated by dividing 33,895 VMT saved per average weekday by 33,072,000 VMT per weekday for the region. This represents a 0.1% reduction in both VMT and emissions within the Region.

Impact on Parking. Survey results indicate some survey respondents feel the parking situation at UWM has improved since the implementation of UPASS. Figure 9-1 shows 19% of respondents indicate they feel parking on-campus was easier while 16% indicate it was easier off-campus since the UPASS program was implemented. The majority of respondents indicate they do not know if UPASS had any impact on the parking situation.

Figure 9-1 UPASS Impact on Parking at UWM (%)



Source: Fall 1994 UWM student survey

Further analysis shows 23% of respondents who indicated their normal mode of transportation to UWM was driving both before and after UPASS said parking on-campus was easier while another 14% said parking off-campus was easier.

Focus group results also show some students feel the program is helping the parking situation around campus. Even students who did not use UPASS said the program helped improve parking around campus. Some students indicated they have been able to consistently locate parking spaces within 2 blocks of the University unlike previous semesters when they often could not find parking for several blocks from campus.

Savings in Fuel Consumption and Expenses. As shown in previous sections, the UPASS program has diverted a number of vehicle trips away from the UWM area while having an impact on reducing VMT and emissions. In addition to these benefits, the program has also resulted in a savings in fuel consumption and a dollar savings to students.

Using values obtained from the American Automobile Association (AAA), the UPASS impact on savings in fuel consumption and expenses is estimated. The AAA used a rate of 21 miles per gallon for fuel consumption and a $1.22 per gallon of fuel for expenses to calculate driving costs for 1995.[4] The estimates show the UPASS program resulted in 242,108 gallons of fuel saved and a $295,371 savings in fuel costs to students over the 1994-95 academic school year.

[4] American Automobile Association, "Your Driving Costs - 1995 Edition," January 1995.

Savings in Operating Costs. Another way to examine the savings to students is to evaluate the total cost for owning and operating an automobile per mile. Total cost for owning and operating an automobile includes several factors such as insurance costs, maintenance costs, and general operating costs. Using values obtained from AAA, and assuming the following characteristics for a student automobile, it is estimated that it costs a student 29.3 cents per mile to own and operate an automobile.

- Assume a student car cost $4,000 and the expected life of the car is 4 years.
- Assume a total operating cost of 11 cents per mile[5]
  - 7 cents per mile for gas
  - 3 cents per mile for maintenance
  - 1 cent per mile for tires
- Assume a total ownership cost of $1,825[6]
  - $625 for Depreciation (Cost of car divided by years of ownership)
  - $800 for Insurance
  - $50 for Registration fee
  - $250 for Interest Payments
  - $100 for Other Expenses (Car washes, repairs, and accessories)

"When you flash the bus pass its like a free day for me. I don't have to worry about a parking ticket and I don't have to worry about all this money that I'm going to shell out. It just nickel and dimes you to death."

- A focus group participant commenting on the savings as a result of using UPASS

Assuming over a one year period a student drives approximately 10,000 miles, the total cost of operating the automobile would be approximately 29.3 cents per mile. This translates into an annual savings of nearly $1,490,000 per year in the total operating costs of an automobile for UWM students.

[5] Total operating costs include gasoline, maintenance, and tires. Based on information obtained from American Automobile Association, "Your Driving Costs - 1995 Edition".

[6] Total ownership costs include depreciation, insurance, registration, interest payments, and other related expenses. The values used are based on information obtained from American Automobile Association, "Your Driving Costs - 1995 Edition".

Impact on Housing Options. The UPASS program has not only had an impact on reducing vehicle trips and emissions rates, but has also provided students with more housing options. With the implementation of UPASS, students are able to live further distances from the University where rent is often less expensive. Students no longer need to be concerned about their mode of transportation to UWM as they can locate close to a transit route and use UPASS on a regular basis. The Spring 1995 survey asked students if the UPASS program had influenced a decision on choosing a place to live.

Figure 9-2 indicates approximately 3% of all respondents felt the UPASS program allowed them to find a place with cheaper rent while another 3% felt UPASS had somewhat of an impact. The majority of survey respondents indicate UPASS did not have an impact on finding less expensive rent.

Figure 9-3 shows approximately 5% of survey respondents indicate they planned to move to a different location with better transit service in future semesters. Approximately 17% of respondents indicated they planned to stay at their same location which had good transit service. Fifty-three percent of respondents said the program would have no impact on where they live while approximately 10% did not know.

Figure 9-2 UPASS Impact on Finding Less Expensive Rent (%)

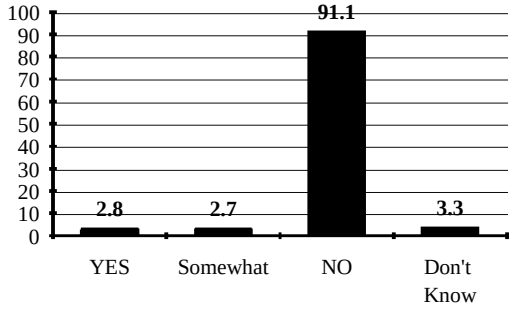
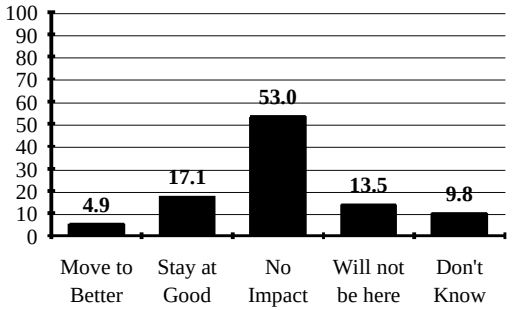


Figure 9-3 UPASS Impact on Finding Housing Near Transit Service (%)



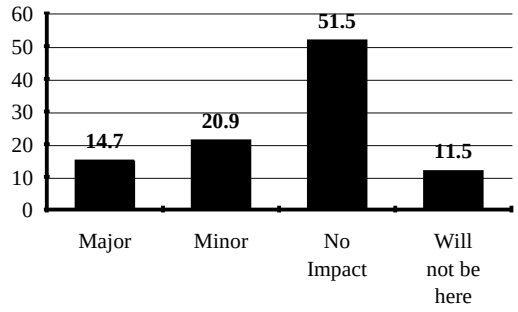
Source: Spring 1995 UWM student survey

Impact on Attending UWM. Students were asked to indicate if UPASS had any impact on their decision to attend UWM. The Fall 1994 survey results indicate 7% of respondents report the program influenced their decision to attend UWM. While this not an extremely high percentage, it should be noted only a relatively few number of students knew about the UPASS program prior to the start of the Fall 1994 semester and the majority of students learned about the program during the first few weeks of the semester.

The Spring 1995 survey asked students if UPASS would have any impact on their decision to attend the University in future semesters. Figure 9-4 shows nearly 15% of respondents indicated UPASS would have a major impact on their decision to attend UWM in future semesters while 21% said the program would have a minor impact. In all, approximately 36% of respondents indicated UPASS would have some impact on their decision to attend UWM. If students who report they will not be attending UWM in future semesters are excluded, the results show nearly 41% of survey respondents said UPASS would impact their decision to attend UWM. These results provide an indication that the UPASS program has the potential to have a major impact in attracting and retaining students at the University.

Nearly 41% of the respondents from the Spring 1995 survey indicate the UPASS program will have a major or minor impact on their decision to attend UWM in future semesters.

Figure 9-4 UPASS Impact on Attending UWM (%)



Source: Spring 1995 UWM student survey

Impact on Employment Decisions. Some survey and focus group respondents indicate the UPASS program had an impact on their ability to find employment. A freshman focus group participant indicated UPASS enabled her to find employment. Figure 9-5 shows 3% of Spring 1995 survey respondents indicated UPASS had an impact on finding employment while 2% felt the program had some impact. The UPASS impact on employment appears to be small but it does demonstrate the potential benefits associated with a transit pass program.

Impact on Accessibility. For some students transit is their only mode of transportation available for trips to UWM, to work, to shopping, and to other locations. One trip purpose students seem to be using UPASS for is to visit their friends. Figure 9-6 shows nearly one out of every four respondents indicate the UPASS program had some impact on their ability to visit friends. Seventeen percent of these respondents said UPASS had a definite impact while 7% indicated UPASS had some impact on increasing their mobility.

Impact on Time Spent on Campus. With an increase in students riding transit to UWM, it was believed that students might spend more time on-campus. Some students indicated that in the past they would leave the University between classes. However, since the implementation of UPASS a few students who now ride transit said they spend the time between classes on-campus. Figure 9-7 indicates approximately 16% of survey respondents said they do spend more time on-campus since the implementation of UPASS. By spending more time on-campus, students are able to take full advantage of the services the University offers such as the library, union, fitness center, and other resources.

Impact on Purchasing an Automobile. With the existence of UPASS, students may have an incentive not to use their automobile or even purchase an automobile. Some students indicate as a result of UPASS they decided not to purchase an automobile. Figure 9-8 indicates approximately 7% of students felt there was a definite impact while 5% said UPASS had some impact on their decision. Most (85%) said it would have no effect.

Survey results indicate the UPASS program impacted other travel related issues. In particular, nearly 17% of Spring 1995 survey respondents indicate UPASS increased their mobility allowing them to visit friends.

Figure 9-5 UPASS Impact on Helping Students Find Employment (%)

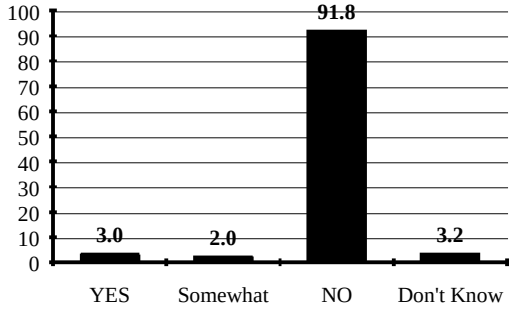


Figure 9-6 UPASS Impact on Helping Students Visit Friends (%)

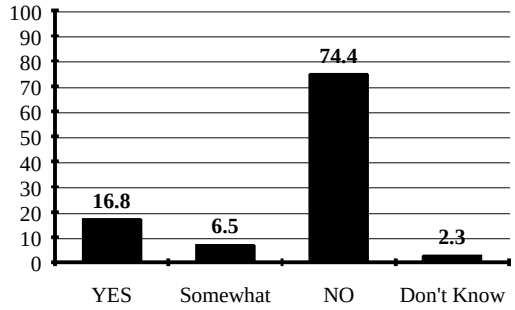


Figure 9-7 UPASS Impact on Time Spent On-campus (%)

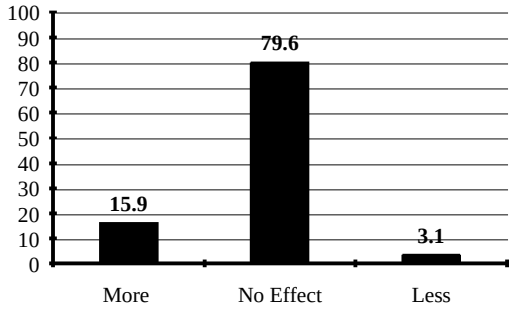
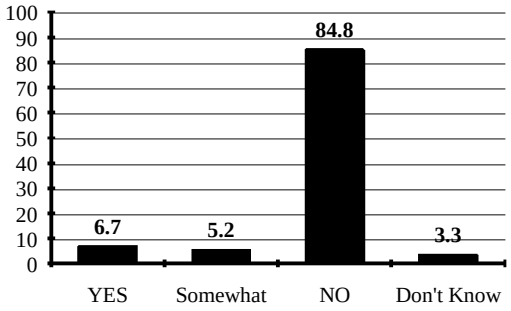


Figure 9-8 UPASS Impact on a Decision Not to Purchase an Automobile (%)



Source: Spring 1995 UWM student survey, Figures 9-5, 9-6, and 9-8
Fall 1994 UWM student survey, Figure 9-7

Chapter X

TRANSFERABILITY OF UPASS

Summary of Findings

This chapter examines the transferability issue of the UPASS program to employers and other institutions. The chapter discusses the benefits and disbenefits of a transit pass program, equity concerns, cost of the program vs. value received, characteristics of likely transit users, and the keys to a successful program.

The following are main points identified in this chapter.

- There are a number of benefits associated with a transit pass program including benefits to the transit pass user, the non-user, the community, the transit company, and the employer.
- Among the benefits of a transit pass program are reduced traffic congestion, improved air quality, and a significant dollar savings to regular transit users.
- A deeply discounted transit pass has the potential to attract individuals from other modes of transportation to transit.
- Implementing a transit pass program by itself is not likely to succeed. It is necessary to market the program and educate people about using transit.
- Parking is a major variable in the effectiveness of a transit pass program. Free parking at a place of employment discourages employees to ride transit.
- Intensive marketing, a flexible pass, keeping cost to a minimum, and adequate transit service are important keys to a successful transit pass program.

Significance of Transferability. The CAAA has placed a considerable burden on large institutions to meet national air quality standards. It is necessary for employers to develop

alternative commuting options for their employees and reduce the number of SOV trips traveling to a work site. One potential alternative for large employers is the implementation of transit pass programs. This study has found that the UPASS program has proven to reduce vehicle trips, increase transit ridership, and have a positive impact on other travel related issues at an university setting. Other studies, such as the ECO pass program in the Denver RTD, have shown that a transit pass program can also be successful from an employer based program.[7]

The impact of the UPASS program shows a number of people potentially stand to benefit from the implementation of a transit pass program. In addition to the UPASS impacting travel related issues, the study also found some students feel the program has helped them find employment, less expensive rent, allowed more interaction off-campus with friends, and allowed some individuals to not have an automobile.

Transit systems also stand to potentially gain from a pass program as studies have found a transit pass program has the potential to increase revenue and increase ridership.[8] This is extremely critical at a time when transit ridership levels, for work trips in particular, continue to decline in cities across the nation.[9] A transit pass program maybe a way for transit systems to offset the trend of declining ridership.

Benefits to the Transit Pass User. Focus group discussions conducted during this study indicate a direct dollar savings is a major incentive in students choosing to use UPASS. Similar results were also found with the Denver ECO pass program which showed 7% of

[7] Schwenk, Judith C. "Case Study of the Denver Regional Transportation District ECO Pass Program," US Department of Transportation, Federal Transit Administration, November 1993.
[8] Oram, Richard L. "Evaluation of Deep Discount Fare Strategies," US Department of Transportation, Federal Transit Administration, August 1995.
[9] Nationwide Personal Transportation Survey, "Travel Behavior Issues in the 90's," US Department of Transportation, Federal Highway Administration, July 1992.

the transit riders main reason for choosing to use the pass was the dollar savings.[10] Individuals who make a modal shift from the automobile to transit can save a considerable amount of money as shown by the UPASS program.

Another potential benefit is that an individual may receive incentives from their employer to shift to transit. Some employers may offer their employees the money they save on parking as a fringe benefit to shift to other modes of transportation. Employers may also provide incentives such as bonuses, additional time off from work, or recognition dinners for individuals participating in a transit program or other trip reduction programs.[11]

Focus group discussions also indicate transit pass users find the pass to be very convenient and like the idea of not needing to carry money for the fare box. An additional convenience individuals incur by making a modal shift from driving to transit is there is no longer a need to worry about traffic congestion, driving during bad weather, locating parking, and other travel related issues.

Benefits to the Non-transit Pass User. While a non-transit pass user does not receive a direct dollar savings from the program, a person can still benefit indirectly. Among the primary benefits to non-transit users include less traffic congestion and increased access to parking. Focus group discussions indicate some students who did not use the transit pass felt the UPASS program was still a benefit to them because the parking situation had improved around campus, thus making their trip to UWM less stressful.

Students also indicated in focus group discussions that the transit pass offers a person a choice in selecting a mode of transportation. Some students feel the UPASS program is like having an insurance policy in case something should happen to their normal mode of transportation. This is an indication that transit pass provides a person with an option

[10] Schwenk, Judith C. "Case Study of the Denver Regional Transportation District ECO Pass Program," US Department of Transportation, Federal Transit Administration, November 1993.
[11] US Department of Transportation, "Parking Cash Out," Office of Technical Assistance and Safety, Office of Mobility Enhancement, February 1994.

value.[12] A person may choose to ride transit in certain situations such as bad weather, when they do not have access to their automobile, or when they know parking will be a problem. While these individuals may not use transit on a regular basis, the insurance of having the pass has value. Even individuals choosing to use the pass on certain occasions will save money and reduce the impact of the automobile on the environment. Results from the ECO pass program in Denver estimate that for every SOV that is removed from the road that 400 pounds of air pollutants are eliminated per year.[13]

Benefits to the Transit System. Transit pass programs have shown the ability to increase revenue while maintaining current ridership levels and sometimes even increasing ridership.[14] Transit companies benefit from a pass program in receiving guaranteed revenue thus reducing the reliance placed on money from the fare box. With the UPASS program, MCTS received a guaranteed $1.2 million to provide transit service for the 1994-95 academic school year. With continuing reductions in Federal and State funding for transit systems, the transit pass program could be an alternative which could potentially help transit systems offset these problems.

[12] Beimborn, Edward and Alan Horowitz, Julie Schuetz, Gong Zejun, "Measurement of Transit Benefits," Center for Urban Transportation Studies, The University of Wisconsin-Milwaukee, June 1993.
[13] Schwenk, Judith C. "Case Study of the Denver Regional Transportation District ECO Pass Program," US Department of Transportation, Federal Transit Administration, November 1993.
[14] Oram, Richard L. "Implementation Experience with Deep Discount Fares," US Department of Transportation, Federal Transit Administration, September 1994.

Benefits to the Employer. The obvious benefit to the employer is in helping to meet the CAAA requirements. Results from this study, as well as others, have shown that transit pass programs have the potential to influence modal shifts and reduce the number of SOV trips commuting to the work place.[15]

Another potential benefit to an employer is that a transit pass program could potentially save a company money. This might occur when the cost of implementing a transit pass program is less than the cost of another TDM alternative. For example, an employer who is in need of more parking could consider constructing a new parking structure or implementing a transit pass program. While both alternatives might solve the problem, the cost of implementing a transit pass program may have an advantage.

In addition, transit pass programs can reduce employee absenteeism problems and increase employee moral. Furthermore, a transit pass may allow a company access to a labor pool that may include a number of individuals who rely on transit as their only mode of transportation.

Benefits to the Community. The entire community, or region, also benefit from a transit pass program. As shown by the UPASS study, reducing the number of vehicle trips within the region resulted in a reduction in the negative externalities associated with driving such as reducing traffic congestion, improving air quality, and relieving parking problems.

Some communities place a high value on public transit and are willing to support it because people believe it plays an important role in their community.[16] Increased ridership from a pass program results in a stronger transit system that can provide better service to its' customers. A quality transit service also has the potential to promote economic development and attract employers to locate in a community.

[15] Schwenk, Judith C. "Case Study of the Denver Regional Transportation District ECO Pass Program," US Department of Transportation, Federal Transit Administration, November 1993.
[16] Beimborn, Edward and Alan Horowitz, Julie Schuetz, Gong Zejun, "Measurement of Transit Benefits," Center for Urban Transportation Studies, The University of Wisconsin-Milwaukee, June 1993.

Disbenefits of a Transit Pass Program. While there are a number of potential benefits associated with a transit pass program there are also some disbenefits. The first issue is the cost of the program. From an employers viewpoint a transit pass program is a substantial investment. As mentioned previously, UWM pays nearly $1.2 million to MCTS to provide transit service over the 1994-95 academic school year. What might be considered a benefit to the transit company by receiving this guaranteed revenue could end up being a loss for the employer if the program fails.

Another consideration is the implementation of a transit pass program does not guarantee the transit system will benefit. While the transit system receives the guaranteed revenue from the employer, a successful transit pass program may require the transit system to provide additional service. This additional service may be necessary due to increased ridership which results in higher operating costs for the transit system. With the UPASS program, additional buses were required on the 30 route due to the increase in ridership. In addition, MCTS increased transit service to the University by adding two new express routes and improving bus schedules. A certain amount of service expansion was built into the fee schedule of the UPASS to cover these costs. Fee levels should be carefully set to allow for some service expansion.

Equity Concerns. If an employer does implement a transit pass program, not all employees will be able to or want to participate in the program. While there are benefits have been identified for non-users, an individual may still not want to support such a program. This raises some concern regarding the participation requirements of a transit pass program.

A major consideration is whether the program should be optional or mandatory. With the UPASS program all students who pay segregated fees are charged $29 for the pass regardless of whether they intend to use the pass or not. The University of Washington U-PASS program operates in a different manner in that students and faculty have an option to participate.

One advantage of operating a mandatory program is that the individual cost per person for the pass is kept to a minimum. Focus group discussions conducted as part of this study indicate that a few people who do not use the UPASS feel the program should be optional. A number of non-transit users, as well as some regular transit users, had concerns that students should be allowed to decide if they want to participate in the program. However, other focus group participants, particularly transit users, mentioned everyone should have to pay regardless of whether or not they use the pass. These students feel since they are forced to pay for other programs at the University, which they may or may not use, the UPASS should be operated in the same manner. The UPASS program had very high levels of support from survey respondents with approval rates over 90%.

A similar situation could arise at an institutional setting particularly if a mandatory transit pass program were implemented. Employees who drive on a regular basis may not want to support a transit pass program while employees who are regular transit users may feel an employer should subsidize transit users. A study of employee parking in Seattle, Washington found nearly 90% of employees receive access to free parking provided by their employer.[17] The study went on to find some employers feel it is necessary to provide their employees with parking or they feel they might lose their employees to other companies. Employers must realize that studies indicate employees with access to free parking increases the number of cars driven to work by 19 cars per 100 employees, and increases SOV trips by 25%.[18]

[17] Metropolitan Seattle Service Development Division, "Managing Employee Parking in a Changing Market - Municipality of Metropolitan Seattle Service Development Division, Nov. 1993," November 1993.
[18] US Department of Transportation, "Parking Cash Out," Office of Technical Assistance and Safety, Office of Mobility Enhancement, February 1994.

Cost of a Transit Pass Program vs. Value Received. The cost of implementing a transit pass program can be substantial as seen by the UPASS program. The cost of implementing the UPASS program for the 1994-95 academic school year at UWM was approximately $1.2 million as seen in the following calculation:

20,762 students attending UWM in Spring 1995 x $29 per student for the transit pass x 2 semesters =

= $1,202,108 for the UPASS program.

The value of the transit trips made using UPASS can be estimated by looking at the total transit trips made and multiplying them by a fare of $0.95 which represents the discounted MCTS ticket price.

As calculated in Chapter 9, on average 75,526 trips were made per week to the University during the Spring 1995 semester. Of these trips, 26% or 19,637 were made using MCTS. Furthermore, approximately 73% of trips made to UWM are simple trip patterns while 27% are complex trips. Simple trip patterns are assumed to consist of 2 transit trips while complex trip patterns use 3 transit trips. The following calculations represent the value of these trips over the academic school year (32 weeks) at a cost of $0.95 per trip.

Simple Trip Pattern (Trip made to and from UWM)
19,637 transit trips to UWM per week (Spring 1995) x .734 (Simple trip pattern) x 2 (round-trips) x 32 weeks in the academic school year x $0.95 average transit fare =

= $876,344 for 32 weeks of service to UWM (Monday - Friday).

Complex Trip Pattern (Includes a trip made to another location in addition to UWM)
19,637 transit trips to UWM per week (Spring 1995) x .266 (Complex trip pattern) x 3 (transit trips) x 32 weeks in the academic school year x $0.95 average transit fare =

= $476,377 for 32 weeks of service to UWM (Monday - Friday).

= $1,352,721 for 32 weeks of service to UWM (Monday - Friday).

In addition to weekday use to UWM, the pass was also used for other trip purposes during the week, on weekends for trips to UWM and to other locations, and for travel during vacation breaks. The value of these transit trips were as follows:

Weekday Trips to Other Locations Besides UWM[19]

12,554 transit trips per week (Monday - Friday) x .734 (Not including trips to UWM) x 2 (round-trips) x 32 weeks in the academic school year x $0.95 average transit fare =

= $560,249 for 32 weeks of service to other locations. (Monday - Friday)

Weekend Trips

1312 transit trips per weekend[20] x 2 (round-trips) x 32 weeks in the academic school year x $0.95 average transit fare =

= $79,770 for 32 weeks of service for weekend trips. (Saturday and Sunday)

Vacation Breaks

Vacation breaks account for approximately 4 weeks for which the pass is valid while classes are not in session. The calculation for vacation breaks include weekday trips (Monday - Friday, not including trips to UWM) and weekend trips (not including trips to UWM). The following calculation estimates the cost with a discounted ticket option.

12,554 transit trips per week (Monday - Friday) x 2 (round-trips) x 4 weeks for vacation breaks x $0.95 average transit fare =

= $95,410 for 4 weeks of service to other locations for vacation breaks. (Monday - Friday)

[19] This calculation includes trips to work, to shopping, and to other locations. Trips to UWM were calculated separately on the previous page.
[20] Includes trips made on Saturdays and Sundays to UWM, to work, to shopping, and to other locations.

919 transit trips per weekend (Saturday and Sunday) x 2 (round-trips) x 4 weeks for vacation breaks x $0.95 average transit fare =

= $6,984 for 4 weeks of service to other locations for vacation breaks. (Saturday and Sunday)

The total cost over vacation break = $102,394.

The total of these items is as follows:

Value of Trip at $0.95 per Trip		($)
Transit Trips to UWM on Weekdays	=	1,352,721
Transit Trips Made Elsewhere on Weekdays	=	560,249
Transit Trips Made on Weekends	=	79,770
Transit Trips Made During Vacation Breaks	=	102,394
Total Value	=	2,095,134

Thus the UPASS at a cost of $1,202,108 provided transit services with a total value of $2,095,134 if purchased as individual tickets at $0.95 per ticket. Put another way, the University was able to purchase transit services for its students at a cost of approximately $0.51 per trip as compared to a ticket price of $0.95 per trip (based on an average of 33,503 transit trips per week).

An interesting factor to consider with regard to the transit pass program is the increase in transit ridership. The ridership numbers used above would have not have happened without UPASS. The UPASS increased transit ridership while at the same time offering a more affordable alternative. One advantage of having the UPASS is the convenience factor it offers to an individual. By having a transit pass, a person no longer needs to purchase tickets or find the correct change. Focus group discussions found the convenience of not having to purchase tickets or worry about finding the correct fare was a major advantage of the UPASS program.

An employer must consider the advantages and disadvantages associated with implementing a transit pass program, or a discounted ticket option. While one option may work for one employer, it does not mean it is the best solution for another. A company faced with meeting CAAA requirements might want to implement a transit pass program for the benefit of increasing transit ridership and reducing SOV trips to their work place. Another employer may opt for the discounted ticket option or no transit alternative.

Other considerations include that the discounted ticket option would require additional administration costs, such as distributing the tickets and record keeping. In addition, the level of service an employer needs, extra services, and marketing all add additional costs to a program. The ECO pass program in the Denver RTD determines the cost of the program based on the size of the company, the level of transit service required, and the location of the company to the CBD. The cost of a transit pass program should guarantee that the employer receives adequate transit service while the transit company receives sufficient revenue to cover their expenses.[21]

Marketing the Program. Deep discount transit pass programs are a relatively new strategy used by transit companies to increase revenue and maintain current levels of transit ridership. Deep discount programs require both a fare and marketing strategy which are essential to the success of a program. It is important that the discount in the fare provides enough incentive (25% or greater discount) to attract individuals to shift modes to transit. The deeper the discount and the simpler the program the more likely modal shifts to transit will occur.

Deep discount fare strategies also involve an intense marketing program aimed at attracting infrequent riders to transit, increasing revenue, and enhancing the competitiveness of transit as compared to other modes of transportation. Richard Oram states the following regarding the importance of marketing to a deep discount program.

[21] Oram, Richard L. "Implementation Experience with Deep Discount Fares," US Department of Transportation, Federal Transit Administration, September 1994.

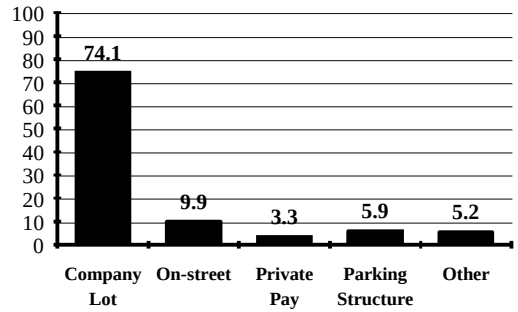
> Effective marketing is *absolutely critical* to the success of Deep Discounting; its importance cannot be overstated. Positive results are only achieved, if it is recognized that an important element of Deep Discounting is a major and ongoing marketing program. That is, Deep Discounting cannot simply be established as a static element of fare policy; it must be intensely promoted at the outset and must receive continuing attention. It should be viewed as part of a broader revenue maximization strategy or, as some agencies have described it, part of an overall "revenue management program."[22]

In an earlier report prepared by Oram, he suggests that deep discount programs have the most impact on infrequent and non-transit users. Survey data obtained from the Grand Rapids, Louisville, and Richmond transit systems support these findings that low and middle frequency riders increased their transit ridership. Additionally, new riders also seemed to be drawn to transit as a result of the deep discount fare.[23] The UPASS program also supports these findings as the program showed approximately a 10% increase in new transit riders and an increase in ridership frequency of regular transit users.

[22] Ibid.
[23] Oram, Richard "Implementation Experience with Deep Discount Fares," US Department of Transportation, Federal Transit Administration, September 1994.

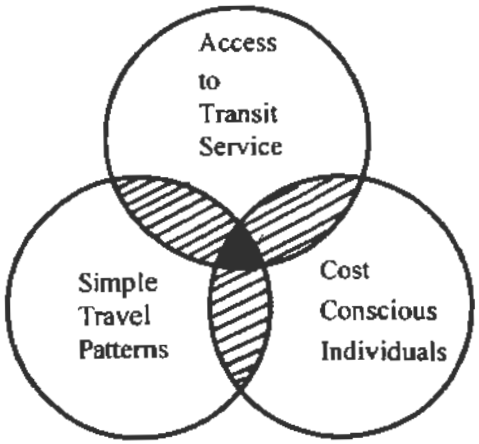
Parking. Parking is an important issue to discuss in the context of a transit pass program. One of the main reasons behind implementing a transit pass program is to promote and encourage individuals to make a modal shift from driving to transit. If employers continue to provide employees with access to free on-site parking, employees will take advantage of this and continue to drive as their normal mode of transportation. Figure 10-1 shows the Spring 1995 survey results of the location UWM students park at their place of employment.

Figure 10-1 Parking Locations at Work (%)



In all, nearly 75% of all respondents who drive to work indicate parking at a company lot. Only 3% of respondents indicate they park at a private pay lot while approximately 6% indicate they park in a parking structure. Those respondents who park in a parking structure, as well as students who park on-street, could not be identified was to whether or not they pay for their parking.

Likely Users of a Transit Pass. The information presented in this report has shown how a transit pass program can encourage modal shifts, increase transit ridership, and impact other travel related issues at a university setting. Some of the information suggests that a transit pass program could be adapted to employers. The following characteristics that have been identified which would likely result in high rate of transit usage.



1. *Access to Transit Service.*

   - Survey results indicate a person living in close proximity to transit service are likely to use transit. This study showed that class time, travel patterns, and credit load had little impact on transit ridership.

2. *Cost Conscious Individuals.*

   - As shown in this report, a major factor in students choosing to use transit was the dollar savings. Cost conscious individuals stand to benefit a great deal from a transit pass program. When looking at the mode split equation of the transportation planning process we see that if the price of transit is reduced, the probability of individuals riding transit increases. With a deeply discounted transit pass program more people are likely to ride transit.

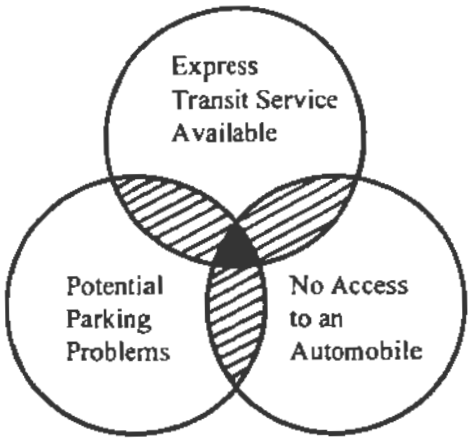
3. *Simple Travel Patterns.*

   - Individuals with simple travel patterns are more likely to use transit compared to those who have complex travel patterns. With an increasing number of individuals who are trip chaining the automobile becomes the most convenient and flexible mode of transportation available. Persons with complex trip patterns are more likely to choose the automobile over transit while individuals with simple travel patterns maybe more likely to ride transit.

4. *Express Transit Service Available.*

    - Travel time is an important variable in a persons decision to ride transit. This study showed that the main reason students stopped riding transit was that the travel time was to long. In addition, MCTS on-board counts show the greatest increase in transit ridership since the implementation of UPASS occurred on express service routes which showed nearly a doubling in ridership compared to pre-UPASS ridership. When the travel time of transit can be made competitive with the travel time of the automobile, there is a higher probability that more people will select transit.

5. *Potential Parking Problems.*



    - When parking problems are an issue, the extra travel time incurred by using transit maybe worth the cost of not having to locate and pay for parking. Considerable time is often spent to locate parking at the University and other locations such as the CBD. While the travel time of transit may take longer compared to the automobile, a person does not have to worry about finding a parking space when riding transit. Transit often allows a person to be dropped off very close to their destination.

6. *No Access to an Automobile.*

    - Individuals who do not have access to an automobile are also likely to benefit from a transit pass. This study also showed that a transit pass can even influence a persons decision to not purchase an automobile. Furthermore, the transit pass offers individuals an option value. That is, the pass provides individuals an alternative mode of transportation should something happen to their normal mode.

Keys to A Successful Program. In summary, the following issues are identified as important variables in the success of a transit pass program.

1. Intensive Marketing.

- An intensive marketing effort is needed by everyone involved with the pass program including the transit system and the institution who implemented the program. As heard in focus group discussions, radio advertisements, newspaper advertisements, and other promotional material provided students with important information regarding the UPASS program and even influenced some students to try the UPASS program.

2. A Flexible Pass.

- Perhaps the greatest advantage of the UPASS program is that the pass is not limited to University trips. Students may use the pass for any trip purpose which makes the program very attractive. Another advantage of UPASS is the pass is valid on a semester basis and is not a weekly ticket program. The convenience of not having to pick-up tickets was very important to students.

3. Cost Kept to a Minimum.

- Individuals must perceive the cost of the program is kept to a minimum. If the cost of the pass is too high the program will likely not be successful. Furthermore, students indicated they were not as concerned with the cost of the program as long as they knew the program was successful and that people were using the transit pass.

4. Adequate Transit Service.

- For a transit pass program to be successful it is necessary to have access to the transit service. The UPASS program is unique in that 11 transit routes serve the University. If a location does not have adequate transit service the likelihood of a successful program decreases.

KEYS TO A SUCCESSFUL PROGRAM

1. INTENSIVE MARKETING.
2. A FLEXIBLE PASS.
3. COST KEPT TO A MINIMUM.
4. ADEQUATE TRANSIT SERVICE.

Conclusions. While the UPASS program has been successful at an University setting, and appears to have the potential to be transferred to employers, there are still several concerns which need to be addressed. First, the UPASS program at UWM is a unique situation in that the program has 20,000 individuals eligible to participate in the program every semester. By having so many participants the cost of the transit service can be kept low.

A second issue to consider about UPASS is that UWM is serviced by a eleven transit routes. This service provides students with a number of options if they choose to ride transit. Employers may not have this type of transit service available to them. Suburban employers in particular will find less transit service available the further one moves away from the CBD. Employers located in the CBD are likely to have greater access to transit and have a better opportunity to implement a successful transit pass program.

Employers need to identify what is best for their situation. A transit program that works for one company does not mean that it is the best alternative for another company. An employer must weigh the costs and benefits of implementing a transit pass program and decide what is the best solution to the problem they face.

With the implementation of a transit pass, regular transit users will continue to use transit but the number of individuals who make a modal shift from driving to transit will determine how successful the program has been. A key element to a successful transit pass program is to convert infrequent transit users into regular users.[24] In order for this to occur, an intensive marketing strategy is extremely important.

While the UPASS provides an example of a successful university transit pass program within Southeastern Wisconsin, the next step is the implementation of an employer based program.

[24] Oram, Richard L. "Implementation Experience with Deep Discount Fares," US Department of Transportation, Federal Transit Administration, September 1994.

Chapter XI

CONCLUSIONS

Conclusions. The UPASS program at The University of Wisconsin-Milwaukee has proven to be an effective TDM strategy in just its first year of operation. This report has shown that the UPASS program reduced vehicle trips to campus, increased transit ridership, and reduced the overall impact of the automobile on the environment. Furthermore, some students perceive the parking situation around campus has improved since the implementation of UPASS.

The program has also received very high approval ratings from UWM students. Approximately 90% of survey respondents indicated they strongly favor or favor the UPASS program and over 91% of respondents indicated the UPASS program should continue in future semesters. Some survey respondents indicated UPASS influenced a decision to attend UWM, influenced a decision to not purchase a car, and allowed some to find employment. Furthermore, a few students indicated they plan to look for housing with better transit service in future semesters to take greater advantage of the UPASS.

Some of the more interesting findings of this study were:

1. UPASS reduced the percentage of students who drive to campus from a rate of 54% prior to UPASS to a rate between 38% to 41% after the implementation of UPASS.

2. UPASS increased the percentage of students who ride transit from a rate of 12% prior to UPASS to a rate of 25% to 26% after the implementation of UPASS.

3. MCTS and survey results indicate approximately a 35% increase in transit ridership on routes serving the University.

4. UPASS increased transit ridership to other locations besides UWM. Survey results show approximately a 17% to 18% increase in transit ridership for trips to work, to shopping, and to other locations.

5. UPASS resulted in a reduction of 221,055 vehicle trips and 5,084,265 VMT for trips to UWM during the 1994-95 academic school year. This resulted in a savings of 242,108 gallons of fuel and a savings of $295,371.76 in fuel costs. The UPASS also reduced emissions by 20% for trips to UWM and by one-tenth of 1% within the region.

Future of the UPASS Program. As shown in this report the UPASS program was very successful during its first year of operation. As the UPASS program continues in future semesters it will be interesting to see if student transit ridership continues to increase. Survey results indicated in particular a high rate of transit usage among freshman and sophomores. Hopefully, this trend will continue as these students become juniors and seniors in approximately 2 or 3 years.

Finally, there is talk of expanding the UPASS program to include summer class sessions as well as including a faculty transit pass program. The University and MCTS are currently discussing the possibility of implementing these types of programs and it appears this could happen in the near future.

Recommendations for Future Studies. This report has evaluated the UPASS program during the first year of operation. A comprehensive study should be conducted in approximately 2 to 3 years to measure the long term success of the program.

Similar surveys to the ones conducted in this study should also be conducted on an annual basis. This would provide valuable information on the success of the program and could provide suggestions which might be helpful in improving the program. A parking study of the University area would also provide a better indication on how the program has impacted the parking situation at the University.

Finally, should an employer within Southeastern Wisconsin implement a transit pass program, a study should be conducted to evaluate the impacts the program has on the region. The success and failures of the program should be identified which could assist other companies in implementing similar transit programs. This type of study would be beneficial in that it would provide an employer based perspective of a transit pass program.

References

American Automobile Association, "Your Driving Costs - 1995 Edition," January 1995.

Beimborn, Edward and Alan Horowitz, Julie Schuetz, Gong Zejun, "Measurement of Transit Benefits," Center for Urban Transportation Studies, The University of Wisconsin-Milwaukee, June 1993.

Metropolitan Seattle Service Development Division, "Managing Employee Parking in a Changing Market - Municipality of Metropolitan Seattle Service Development Division, Nov. 1993," November 1993.

Nationwide Personal Transportation Survey, "Travel Behavior Issues in the 90's," US Department of Transportation, Federal Highway Administration, July 1992.

Oram, Richard L. "Implementation Experience with Deep Discount Fares," US Department of Transportation, Federal Transit Administration, September 1994.

Schwenk, Judith C. "Case Study of the Denver Regional Transportation District ECO Pass Program," US Department of Transportation, Federal Transit Administration, November 1993.

Southeastern Wisconsin Regional Planning Commission, "A Regional Transportation System Plan For Southeastern Wisconsin: 2010," Planning Report Number 41, December 1994.

Trommer, Scott E. and Marta Jewell, Robert Peskin, Judith Schwenk "Evaluation of Deep Discount Fare Strategies," US Department of Transportation, Federal Transit Administration, August 1995.

US Department of Transportation, "Parking Cash Out," Office of Technical Assistance and Safety, Office of Mobility Enhancement, February 1994.

Williams, Michael E. and Kathleen L. Petrait "U-PASS: A Model Transportation Management Program That Works," Transportation Research Record 1404.