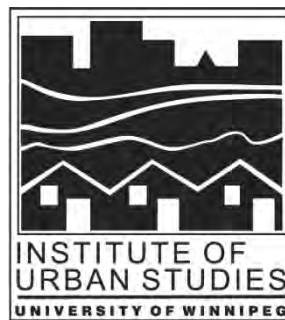


An Analysis of the Transportation Modes used by University Students in Winnipeg: Is the Commute to School Sustainable?

**by Jennifer Prochera
1999**

The Institute of Urban Studies





THE UNIVERSITY OF
WINNIPEG

FOR INFORMATION:

The Institute of Urban Studies

The University of Winnipeg
599 Portage Avenue, Winnipeg
phone: 204.982.1140
fax: 204.943.4695
general email: ius@uwinnipeg.ca

Mailing Address:

The Institute of Urban Studies

The University of Winnipeg
515 Portage Avenue
Winnipeg, Manitoba, R3B 2E9

**AN ANALYSIS OF THE TRANSPORTATION MODES USED BY UNIVERSITY STUDENTS IN
WINNIPEG: IS THE COMMUTE TO SCHOOL SUSTAINABLE?**

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Jennifer Prochera

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AN ANALYSIS OF THE TRANSPORTATION MODES USED BY UNIVERSITY STUDENTS IN WINNIPEG: IS THE COMMUTE TO SCHOOL SUSTAINABLE?

Jennifer Prochera*

INTRODUCTION

Sustainable development was defined by the World Commission on Environment and Development in their 1987 report *Our Common Future* as "development that means meeting the needs of the present without compromising the ability of future generations to meet their own needs." Since this report, sustainable development has become a key goal of public policy both within Canada and internationally. This response to the concept of sustainable development has had a profound impact on transportation (Transport Canada 1997). The concept of sustainable transportation emerged from the concept of sustainable development. Sustainable transportation has also been defined:

Environmentally sustainable transportation is transportation that does not endanger public health or ecosystems and meets mobility needs consistent with:

- the use of renewable resources below their rates of regeneration; and
- the use of non-renewable resources below the rates of development of renewable substitutes (Apogee Research 1996).

The environmental impacts of transportation are being examined in Canada and internationally (Sypher 1992). Transportation is an integral part of our lives, affecting many aspects of modern society. Transportation affects the environment in a wide variety of ways ranging from global problems such as climate change to local problems of congestion and noise. The mode of transportation chosen for the commute to work or school can have a different degree of impact on the environment. The focus of this paper is the transportation modes used by students travelling to university in Winnipeg. This study examines whether there are a greater number of students driving without passengers when commuting to university compared to the use of more sustainable forms of transportation including car pooling, the transit system, walking and biking. As well, it evaluates some of the factors that may have influenced the choice of transportation mode among students.

The environmental impacts of transportation and various strategies for decreasing the impacts created by the commute to university, with an emphasis on bicycle-friendly policies, are analysed in the report "Green Campuses: Cutting the Environmental Cost of Commuting" (Tolley 1995).

In 1994, a survey of University of Winnipeg students' transportation modes and attitudes toward improving transportation in downtown Winnipeg showed the most common mode of transport to be transit,

*Jennifer Prochera is the winner of the Institute of Urban Studies Student Paper Award, 1999.

followed by driving without passengers, car pooling, walking and cycling. The report concluded that the respondents were satisfied with the current level of service provided by Winnipeg Transit (Stuart 1994).

This study focuses on the university commute of students at two universities, the University of Winnipeg (U of W) and the University of Manitoba (U of M).**

PROJECT OBJECTIVES

The objectives of this project are:

1. To determine the frequency of use of the following transportation modes used by university students when commuting to school:
 - a) Driving without passengers
 - b) Car pooling
 - c) The transit system
 - d) Biking and walking
2. To determine some possible factors that may have influenced students in their use of a particular mode of transportation.
3. To gather data on how students used particular transportation modes.
4. To recommend steps that can be taken to increase the usage of more sustainable forms of transportation.

METHODOLOGY

CHARACTERISTICS OF QUESTIONNAIRE

A questionnaire was developed for distribution at both the U of W and the U of M. The first few questions of the questionnaire covered gender, age, income and student status. These questions helped to determine the demographics of the respondents from both universities. Next were questions outlining workplace characteristics, followed by a question about the affect of the commute time to school from work on the respondents choice of transportation mode. Questions also investigated the frequency of use of each transportation mode throughout the school week. There was a section devoted to the various transportation modes students use to commute to school which asked respondents questions about their commute to university using a specific mode as well as their perception of convenience and cost. Specific

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questions were directed to students that drove without passengers, car pooled, used transit, and biked or walked. The last question of the survey asked which incentives to reduce the use of single occupant vehicles would be of greatest importance to the respondents. This question listed five incentives and participants were asked to rank them in order of importance, where a rank of one was representative of the most important and a rank of five as the least.

SAMPLE DESIGN

The surveys were distributed in classes at both universities, with the cooperation of numerous professors. At first an attempt was made to distribute the surveys in similar classes at both universities, on the basis of material taught and years of study. However, these attempts were limited due to various constraints with time being the main constraint. Due to differences in the universities and time constraints, the two samples differed in the type of class and year of study of students. At the U of M, the questionnaire was distributed in classes in the following disciplines: biology, marketing, agriculture and mathematics. The questionnaire was distributed in classes in the following disciplines at the U of W: biology, geography, economics, political science and academic writing. In February 1999, student enrolment was 6,041 at the U of W and 19,743 at the U of M. There were 188 surveys returned from the U of W, and 209 from the U of M. Since the two samples were heterogenous and not homogeneous, it was decided to analyse all of the surveys that were returned, despite the differences in sample size.

DATA ANALYSIS

The majority of the data was converted into percentages with the exception of the last question which was designed to express the importance of sustainable transportation incentives by rank. The results of this question were first weighted by order of importance. The weighted values were expressed as a percentage. Due to the abundance of data and the limited time for the analysis of the data, a cross-section of the results appear in this report.

LIMITATIONS OF THE STUDY

This project was completed for a three credit hour course. As a result, this allowed only three months to complete the project which was not enough time to fully analyse and compare all of the data. The data could have been analysed in much greater detail if more time had been allotted for the completion of this project. Due to the great diversity of the populations sampled, coupled with the time constraints and the difficulty in finding participants, the samples were not as representative or as large as first intended. The sample size and analysis of the data could have been expanded if the course had been a six credit hour

course allowing six months for sample selection, data collection, interpretation and especially statistical analysis.

RESULTS

The results are divided into eight sections: the demographics of the sample, employment characteristics, transportation modes of students, students that drive without passengers, students that car pool, students that use the transit system, students that bike or walk and incentives for sustainable transportation.

DEMOGRAPHICS OF SAMPLE

The demographic characteristics of the samples from the U of W and the U of M are shown in Table 1. Table 1 also provides general information about the respondents' commute to university. The majority of the respondents at both universities commuted to school 3-5 days a week; 83% of U of W students and 82% of U of M students commuted to school 3-5 days a week. At the U of W, it took approximately 10-30 minutes for 60% of the participants to reach the university from home; it took 30-70 minutes for 25%. At the U of M, the time it took to reach the university from home was approximately 10-30 minutes for 47% of the respondents and 30-70 minutes for 30% of respondents. When asked if the time it takes to reach the university plays a role in the transportation mode chosen, there was little difference between the choices provided in the questionnaire.

EMPLOYMENT CHARACTERISTICS

The employment characteristics of the samples are shown in Table 2. Job location for the most part did not affect the students' choice of transportation. At the U of W, 60% of participants and at the U of M, 68% of the participants responded that the geographical location of their job did not affect their transportation choice.

TRANSPORTATION MODES OF STUDENTS

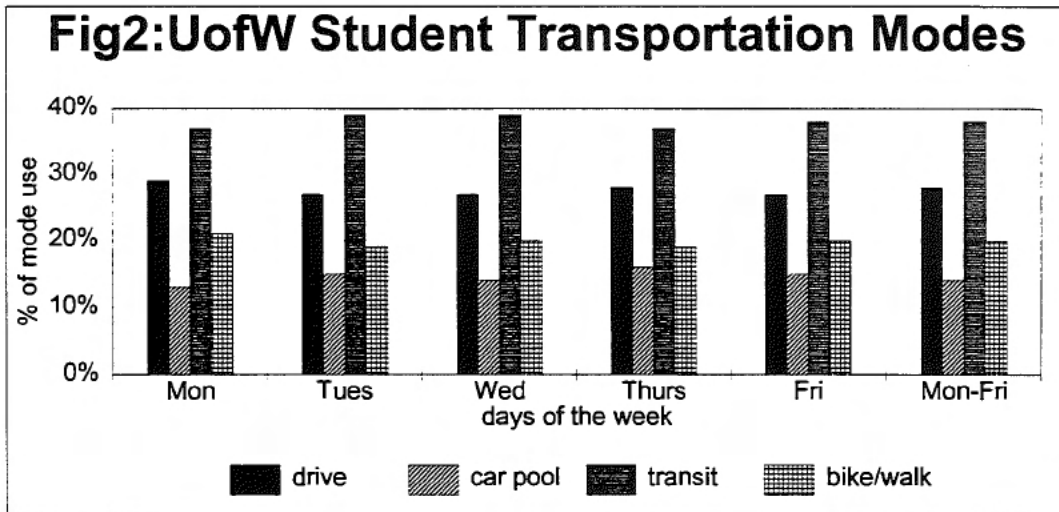
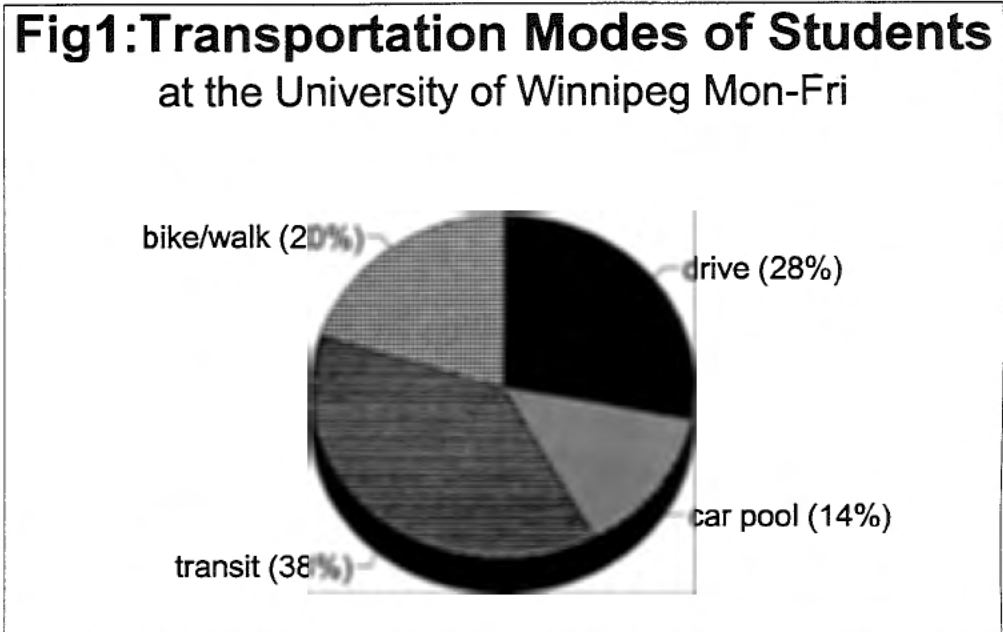
Table 3 summarizes the mode of travel used by U of W students by day of the week. The most commonly used mode of travel was the transit system; 38% of the respondents commuted to school by bus throughout the week. Driving without passengers is the second most commonly used travel mode by the participants at the U of W; 28% drove during the week without passengers. The third most used transportation mode by respondents at the U of W was biking and walking at 20%. The least common transport mode was

	U of W 188 Students	U of M 209 Students
Table 1: Demographics of the University of Manitoba versus University of Winnipeg Samples (See methods for sample design)		
Gender:		
female	56%	45%
male	44%	55%
Age:		
>18	0%	1%
18-25	90%	78%
26-30	6%	14%
31-40	6%	6%
<40	0%	1%
Residents:		
north	23%	26%
east	11%	6%
south	24%	45%
west	19%	14%
central	23%	9%
Income:		
>5,000	36%	32%
5,000-10,000	46%	43%
<10,000	17%	25%
Student status:		
full-time	91%	97%
part-time	9%	3%
Year of study:		
1st	24%	18%
2nd	29%	27%
3rd	25%	19%
4th	17%	27%
5+	5%	9%
Commute to University:		
2 days or less	6%	3%
3-4 days	27%	19%
5 days	56%	63%
more than 5 days	11%	15%
approximate time travelled for a one-way trip to university:		
>2km	21%	15%
3km-10km	44%	42%
more than 10km	34%	43%
Time needed to travel from home to university:		
>10 minutes	15%	23%
10-30 minutes	60%	47%
30-70 minutes	25%	30%
The time it takes to reach university plays a role in transportation mode choice:		
a great deal	32%	39%
somewhat	38%	30%
not at all	30%	31%

Table 2: Employment characteristics of survey respondents at the Universities of Winnipeg and Manitoba

	U of W students	U of M students
% employed	66%	52%
% unemployed	34%	48%
% employed on campus	5%	7%
% employed off campus	90%	88%
% employed on & off campus	5%	5%
% work full-time	6%	7%
% work part-time	90%	93%
Area of city workplace located:		
north	16%	11%
east	13%	14%
south	28%	32%
west	18%	25%
central	25%	18%
Location of job affected the transportation mode choice to university:		
a great deal	23%	15%
moderately	17%	17%
not at all	60%	68%

	Mon	Tues	Wed	Thurs	Fri	Mon-Fri
drive	29%	27%	27%	28%	27%	28%
car pool	13%	15%	14%	16%	15%	14%
transit	37%	39%	39%	37%	38%	38%
bike/walk	21%	19%	20%	19%	20%	20%



car pooling, with just 14% of the respondents car pooling to school on a weekly basis. The mean percentage of mode use throughout the week is illustrated in Figure 1. The transportation mode use at both universities was fairly stable with little difference through the week. Figure 2 shows the percentage of the travel mode use at the U of W on a daily basis.

The percentage of mode use per day at the U of M is shown in Figure 4 and summarized in Table 4. At the U of M, the most commonly used mode of travel was driving without passengers; 45% of the respondents drove to school each week without passengers. The transit system was the second most commonly used travel mode by the participants, with 28% of the respondents using the transit system on a weekly basis to commute to school. The third most used transportation mode by respondents at the U of M was car pooling at 17%. The least common transport mode was biking or walking, with only 10% of the respondents walking or biking to school during the week. The mean percentage of mode use throughout the week at the U of M is shown in Figure 3.

STUDENTS THAT DRIVE WITHOUT PASSENGERS

Table 5 summarizes the results of the questions directed to students that drive to university without passengers. Students were asked about their primary reason for driving to school without passengers and were given the choices of convenience, time or cost. The majority of those surveyed selected convenience. At the U of W, 58% of the participants and at the U of M, 70% of the participants responded that their primary reason was convenience. Time was the primary reason of 39% of the respondents at the U of W; at the U of M, time was the primary reason for driving to school without passengers of 23% of the respondents.

STUDENTS THAT CAR POOL

Table 6 summarizes the results of questions asked of the participants that car pooled to university on a regular basis. It was found that the majority of the respondents car pooled with one passenger. At the U of W, all of the respondents that car pooled to university considered it to be moderately to very convenient; 96% of respondents that car pooled to the U of M found it to be very to moderately convenient.

STUDENTS THAT USE THE TRANSIT SYSTEM

Table 7 summarizes responses of students that use the transit system on a regular basis. At the U of W, 85% of the respondents answered that they found the transit system to be moderately to very expensive. The results were similar at the U of M, where 86% of the respondents considered the transit system to be moderately to very expensive. All of the U of M students surveyed found the transit system very to moderately convenient. Similarly, at the U of W, 88% of the students surveyed considered taking the bus

Table 4: Modes of travel used by University of Manitoba Students

	Mon	Tues	Wed	Thurs	Fri	Mon-Fri
drive	45%	44%	47%	45%	45%	45%
car pool	18%	17%	14%	16%	18%	17%
transit	29%	29%	29%	29%	26%	28%
bike/walk	8%	10%	10%	10%	11%	10%

Fig3: Transportation Modes of Students at the University of Manitoba Mon-Fri

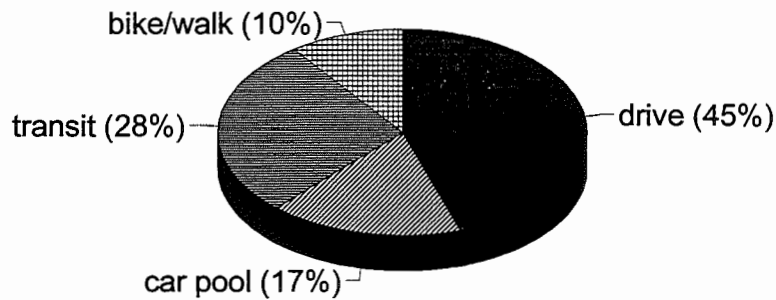


Fig4:UofM Student Transportation Modes

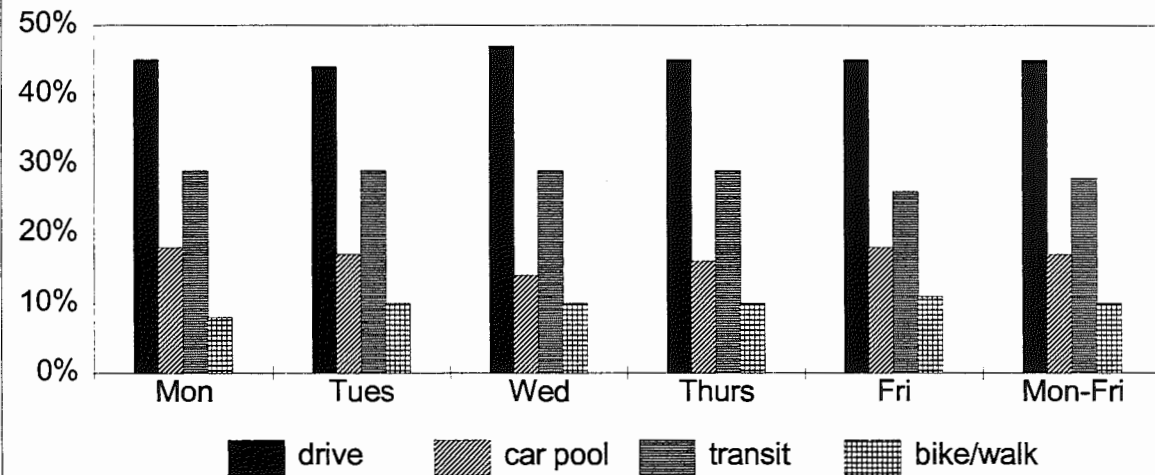


Table 5: Results of questions for students that drive without passengers:

	U of W 73 students	U of M 111 students
Vehicle used when driving to university owned by:		
your self	62%	68%
your parents	34%	29%
your partners	3%	2%
other	1%	1%
Type of vehicle:		
car	77%	83%
van	12%	3%
truck	11%	14%
Drive without passengers more:		
in the summer	8%	9%
in the winter	16%	11%
same amount each season	76%	80%
Primary reason for driving to university:		
convenience	58%	70%
time	39%	23%
cost	3%	7%
pay for parking:		
monthly basis	23%	1%
daily basis	74%	32%
yearly basis	3%	67%
consider parking at university to be:		
very convenient	4%	14%
moderately convenient	44%	52%
not convenient	51%	34%
very difficult to find		
very difficult to find	23%	8%
moderately difficult to find	51%	47%
not difficult to find	27%	45%
very expensive		
very expensive	46%	43%
moderately expensive	49%	51%
inexpensive	4%	6%

Table 6: Results of questions for students that car pool		
	U of W 40 students	U of M 54 students
Type of vehicle:		
car	75%	74%
van	10%	7%
truck	15%	19%
Number of people in car pool on average driver included:		
2	61%	58%
3	37%	35%
4 or more	3%	7%
Car pooled more:		
in the summer	3%	2%
in the winter	45%	23%
same amount each season	53%	75%
considered car pooling to lower their commuting costs:		
very much	15%	5%
moderately	40%	74%
unsure	33%	13%
not at all	13%	8%
considered car pooling to be:		
very convenient	47%	57%
moderately convenient	53%	39%
do not consider convenient	0%	4%
Primary reason for car pooling to school:		
convenience	50%	59%
time	30%	6%
cost	24%	35%

	U of W 94 students	U of M 70 students
Owned a vehicle	39%	52%
Did not own a vehicle	61%	48%
Use the transit system more:		
in the summer	7%	1%
in the winter	50%	58%
same amount each season	45%	41%
Feel safe using the transit system at night:		
very safe	26%	49%
moderately safe	57%	47%
unsafe	17%	4%
Consider using the transit system to be:		
very expensive	32%	20%
moderately expensive	53%	66%
inexpensive	15%	14%
very convenient	44%	50%
moderately convenient	44%	50%
do not consider convenient	12%	0%
Primary reason for taking the bus:		
convenience	61%	68%
time	9%	6%
cost	30%	26%

	U of W 52 students	U of M 21 students
Bike or walk more in:		
summer	46%	33%
winter	0%	10%
same amount each season	54%	57%
Consider biking or walking home from school at night to be:		
very safe	25%	29%
moderately safe	51%	65%
unsafe	25%	6%
Primary reason for biking or walking to school:		
cost effectiveness	23%	38%
exercise	23%	38%
convenience	49%	19%
time	5%	5%

to university to be very to moderately convenient. When the respondents were asked about their main reason for taking the bus, convenience was the overwhelming reason at both universities, followed by cost, then time. At the U of W, 61% of respondents that use the transit system choose convenience as their primary reason for using transit compared to 68% of the respondents at the U of M. Cost was selected as the primary reason for using transit to commute to university by 30% of respondents at the U of W and 26% of the respondents at the U of M. At the U of W, 39% of the students surveyed owned their own vehicle, but relied on transit to commute to school. At the U of M, 52% of respondents that used the transit system owned a vehicle.

STUDENTS THAT BIKE OR WALK

Table 8 summarizes the results of the questions for students that biked or walked to university. At the U of W, 46% and at the U of M, 33% of the respondents walked or biked to university more in the summer. A large percentage of the students surveyed biked or walked both in the summer and winter. At the U of W, 54% and at the U of M, 57% of respondents biked or walked to school the same amount each season.

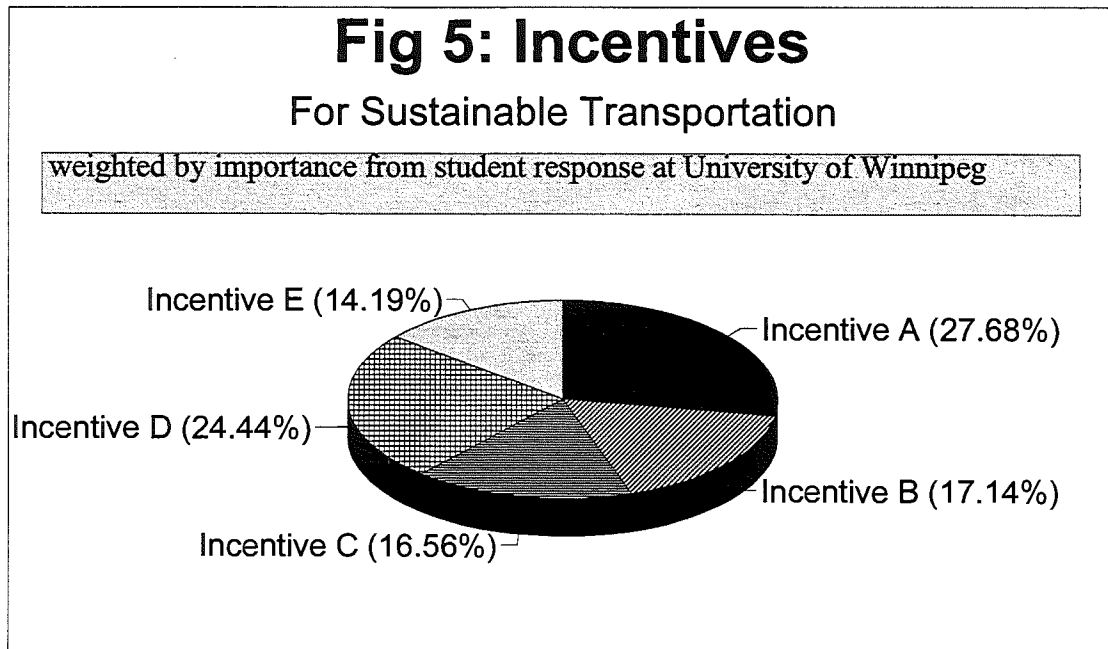
INCENTIVES FOR SUSTAINABLE TRANSPORTATION

Table 9 and Figure 5 show the incentives weighted by importance from student responses at the U of W. The most important incentive at the U of W was a reduced transit fare for university students, followed by a reduced parking charge for students that car pooled, increased accessibility to bus routes, improved security at some bus stops and improved cycling routes. Table 10 and Figure 6 summarize the incentives weighted by importance from student responses at the U of M. The incentive that ranked the most important at the U of M was a reduced transit fare for university students, followed by a reduced parking charge for students that car pooled, increased accessibility to bus routes, improved cycling routes and improved security at some bus stops.

DISCUSSION AND RECOMMENDATIONS

Being located in downtown Winnipeg makes the U of W less accessible by car. Commuters must contend with one-way streets, limited parking and traffic congestion. However, this does not seem to have deterred the students sampled from using their cars to commute to school. Approximately 42% of the respondents from U of W drive to school either with or without passengers. The U of W does not provide student parking. The parking around the U of W consists of various privately-owned parking lots and city-owned metres. Parking can also be found on neighbourhood streets surrounding the university, but parking on streets is usually limited to one hour. The U of M on the other hand is more accommodating for parking. There are 3,130 student parking spaces available as well as 915 metres and daily parking spots, and 500

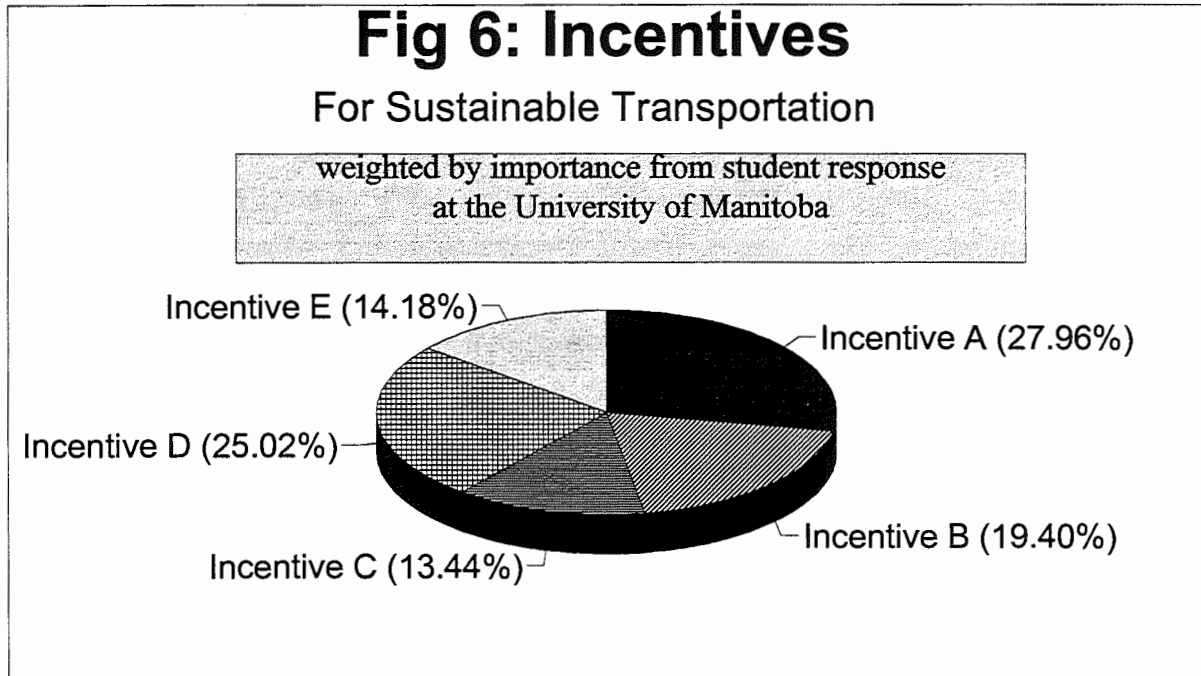
Table 9: Incentives weighted by importance from student response at the University of Winnipeg				
Incentive A	Incentive B	Incentive C	Incentive D	Incentive E
667	413	399	589	342



- Incentive A: Reduced transit fare for university students
- Incentive B: Increased accessibility to bus routes
- Incentive C: Improve the security of some bus stops
- Incentive D: Reduced parking charge for students that car pool
- Incentive E: Improved cycling routes

Table 10: Incentives weighted by importance from student response at the University of Manitoba

Incentive A	Incentive B	Incentive C	Incentive D	Incentive E
772	501	347	646	366



- Incentive A: Reduced transit fare for university students
- Incentive B: Increased accessibility to bus routes
- Incentive C: Improve the security of some bus stops
- Incentive D: Reduced parking charge for students that car pool
- Incentive E: Improved cycling routes

visitor and casual parking spots. There are also tentative plans to create a parkade at the U of M which will create an additional 1,000 student parking spots. At the time of this report, there were no incentives at either university to reduce the number of single occupant vehicles, nor was it being considered. If the University of Winnipeg were as accessible to cars as the U of M, there would likely be an increase in the number of students that drove to school. As a result, it is not recommended that the U of W provide student parking unless it is created as an incentive to increase car pooling. Increasing the availability of parking near the U of W has the potential to greatly increase the number of students who drive to school due to the high percentage of student transit users surveyed who have their own vehicles.

At the U of W, car pooling was the least used transportation mode of the students surveyed. At the U of M, car pooling was the third most popular mode of transportation by respondents after driving alone and transit. The number of passengers in car pools was fairly low at both universities. At the U of W, 61% of the respondents and at the U of M, 58% of the respondents car pooled with only one passenger. Given the low percentage of students that car pooled at both universities, and that a large percentage of the students that did car pool had only one passenger, illustrates that there are actions that can be taken by the universities to make car pooling a more desirable commuting choice for students. When the students that drove without passengers were asked how convenient they considered parking at the university, 51% of respondents at the U of W and 34% at the U of M found it to be inconvenient. At the U of W, 74% of students found finding a parking spot moderately to very difficult. At the U of M, 55% of the students that drove to university indicated that finding a parking spot was very to moderately difficult. Parking was also identified as expensive by most respondents at both universities. At the U of W, 95% of the students that drove to university found parking very to moderately expensive. Similarly, at the U of M, 94% of the students that drove to university found parking very to moderately expensive. Considering the large percentage of respondents that found parking at the universities to be expensive, inconvenient and difficult to find, it is not surprising that a reduced parking charge for students that car pool was the second most popular incentive. The results suggest that if universities created separate parking spaces for students that car pooled at a lower price, this might induce students that drive to school without passengers to switch to car pooling. It is recommended that a reduced parking charge for students that car pool be considered.

The results indicate that the most attractive incentive at both universities was a reduced student transit fare. The results showed that the majority of students surveyed at both universities considered the transit system to be expensive. At the U of W, 85% of the respondents found the transit system to be moderately to very expensive. The results were similar at the U of M, where 86% of the respondents considered the transit system to be moderately to very expensive.

The transit system was considered convenient by the respondents at both universities. All of the U

of M students surveyed found the transit system very to moderately convenient. Similarly, at the U of W, 88% of the students surveyed considered taking the bus to university to be very to moderately convenient. When the respondents were asked what was their primary reason for taking the bus, convenience was the primary reason at both universities by a large percentage, followed by cost, then time. The results indicated that numerous students that used the transit system also owned a vehicle. At the U of W, 39% of the students surveyed owned their own vehicle and used the transit system to commute to school. At the U of M, 52% of respondents that used the transit system owned a vehicle. This suggests that a reduction in student bus fare could shift student choice of transportation mode from car to bus when commuting to school. The results of this study indicate that students consider the transit system to be a convenient but expensive way to travel to university. A decrease in student transit fees has the potential to increase the number of students that use the transit system to commute to school by a significant amount. As a result, it is recommended that university students receive a discounted bus fare.

The evidence supporting the predicted climate change induced by greenhouse gas emissions lead to the signing of the Kyoto Protocol to the U.N. Framework Convention on Climate Change by 150 countries including Canada in December 1997. The protocol commits Canada to reduce its total emissions of six greenhouse gases by 6% below 1990 levels between 2008 and 2012. Of the six greenhouse gases Canada is committed to reduce, carbon dioxide caused by the burning of fossil fuels is the most significant (Rolfe 1998). Vehicles produce a significant amount of greenhouse gas emissions. Consequently, it would be beneficial for universities and other institutions to create policies and incentives that reduce the use of less environmentally sustainable modes of transportation, such as single occupant vehicles, when commuting, and increase the use of more sustainable forms of transportation such as car pooling, transit, walking and biking.

CONCLUSION

Transportation is an integral part of our lives, affecting many aspects of modern society. Transportation affects the environment in a wide variety of ways ranging from global problems such as climate change to local problems of congestion and noise. As a result, society as a whole must reevaluate its modes of transportation.

If students and society in general are going to adjust their commuting patterns then alternatives to the automobile must be convenient and readily available. This study identified two incentives that ranked high among the students surveyed: reduced transit fare for university students and a reduced parking charge for the students that car pooled. An increase in transit ridership and car pooling could potentially lower single person car use and promote more sustainable transportation patterns in Winnipeg from an environmental perspective. To add to the results of this study and to enhance knowledge in this field, it is further recommended that a discussion paper be written on the costs and benefits of various sustainable transportation policies for university students and staff in Winnipeg.

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APPENDIX



University Student Transportation Survey

Thank you for agreeing to complete this survey about your mode of travel to and from university. The data collected from this survey will be used in a research study that will analyse the transportation modes used by students when commuting to university. (Please circle your answers.)

1. Gender: a) Female b) Male
2. Age: a) less than 18 b) 18-25 c) 26-30 d) 31-40 e) more than 40
3. Which area of the city do you live?
a) north b) east c) south d) west e) central
4. Approximately what is your annual personal income?
a) less than \$5,000 b) \$5,000-\$10,000 c) more than \$10,000
5. Which university do you attend? a) U of Manitoba b) U of Winnipeg c) Both
6. Are you currently a full-time or part-time student?
a) full-time [registered for a minimum of 9 credit hours per term]
b) part-time [registered for fewer than 9 credit hours per term]
7. What year of study are you currently in? a) 1st b) 2nd c) 3rd d) 4th e) 5th+
8. Are you currently employed? a) yes b) no

Note: if you answered no to question 8 you may go to question 13. If you answered yes, please continue with the next question.

9. If you are employed, do you work: a) on campus b) off campus c) both
10. Do you work: a) full-time b) part-time
11. If you are employed off campus which area of the city is your place of employment located?
a) north b) east c) south d) west e) central
12. How does the geographic location of your job in relation to university affect your choice of transport to university? a) a great deal b) moderately c) not at all
13. How many days a week do you travel to university?
a) 2 days or less b) 3-4 days c) 5 days d) more than 5 days
14. Approximately how far do you travel on a one-way trip to university?
a) less than 2km b) 3km-10km c) more than 10km
15. How long approximately does it take you to reach the university from home?
a) less than 10 minutes b) 10 minutes to 30 minutes c) 30 minutes to 70 minutes

16. Does the time it takes you to commute to university play a role in the form of transportation you use?
 a) a great deal b) somewhat c) not at all
17. Which days of the week do you generally use the following modes of travel to commute to university?
 (Circle the days of the week for which you generally use a type of travel to commute to university. You may choose more than one mode of travel.)
- i) drive [with no passengers] a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun
- ii) car pool a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun
- iii) use the transit system a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun
- iv) bike or walk a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun

For the mode/modes of travel you use regularly to commute to school please answer the following:

- If you drive with no passengers, please answer questions 18-25.
- If you car pool, please answer questions 26-34.
- If you use the transit system, please answer questions 35-41.
- If you bike or walk, please answer questions 42-44.

Questions 18-25 are for students that drive to university with no passengers:

18. Whose vehicle do you usually use to travel to university?
 a) your own b) your parents c) your partners d) other
19. Which type of vehicle do you use to travel to university? a) car b) van c) truck
20. How convenient do you consider the parking at university?
 a) very convenient b) moderately convenient c) not convenient
21. How difficult is it on average to find parking?
 a) very difficult b) moderately difficult c) not difficult
22. Do you pay for parking on a:
 a) monthly basis b) daily basis c) yearly basis
23. How expensive do you consider the parking to be around the university?
 a) very expensive b) moderately expensive c) inexpensive
24. Do you drive without any passengers more:
 a) in the summer b) in the winter c) the same amount each season
25. What is the primary reason you choose to drive to university?
 a) convenience b) time c) cost

Questions 26-34 are for students that car pool to university regularly:

26. What type of vehicle do you use for your car pool? a) car b) van c) truck
27. Do you car pool with anyone in this class? a) yes b) no

28. How many people do you car pool with on average (including the driver)?
a) 2 b) 3 c) 4+
29. i) Does the number of people in your car pool vary throughout the week? a) yes b) no
ii) If so, which day/days of the week are there the most people in your car pool?
a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun
30. Do you car pool more in the:
a) summer b) winter c) car pool the same amount in each season
31. Does car pooling lower the expense of commuting to school?
a) very much b) moderately c) unsure d) not at all
32. Which days of the week are easier to arrange a car pool for?
a) Mon b) Tues c) Wed d) Thurs e) Fri f) Sat g) Sun
33. How convenient is it for you to car pool to university?
a) very convenient b) moderately convenient c) do not consider convenient
34. What is the primary reason you chose to car pool? a) convenience b) time c) cost

Questions 35-41 are for students that regularly use the transit system when commuting to university:

35. How convenient is it for you to use the transit system to commute to university?
a) very convenient b) moderately convenient c) do not consider convenient
36. How expensive do you find using the transit system compared to other transport forms?
a) very expensive b) moderately expensive c) inexpensive
37. When you leave the university in the evening, do you feel safe using the transit system?
a) very safe b) moderately safe c) unsafe
38. i) Do you use the park and ride program? a) yes b) no
ii) If yes, do you find this program convenient?
a) very convenient b) fairly convenient c) do not consider convenient
39. Do you use the transit system to commute to university more in the:
a) summer b) winter c) the same amount in each season
40. Do you own a vehicle? a) yes b) no
41. What is the primary reason you chose to ride the bus when commuting to university?
a) convenience b) time c) cost

Questions 42-44 are for students that walk or bike to university regularly:

42. What is the primary reason you chose to walk or bike to university?
a) cost effective b) exercise c) convenience d) time

43. When you leave the university in the evening, do you feel safe walking/bicycling home?
a) very safe b) moderately safe c) unsafe

44. Do you bike/walk to university more in the:
a) summer b) winter c) the same amount each season

The following question is for all respondents:

45. Please rank the following incentives in order of importance to you. (Place 1 beside the incentive you feel is most important and 5 beside the one you feel is the least important.)

- ___ Reduced transit fare for university students
- ___ Increased accessibility to bus routes
- ___ Improve the security of some bus stops
- ___ Reduced parking charge for students that car pool
- ___ Improved cycling routes