2010 UWA Commuting Survey
Volume I: Executive Summary

Prepared by
Sarah French
Winthrop Professor Billie Giles-Corti

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OUR MISSION: To undertake policy-relevant research that builds capacity and influences planning and urban design policy and practice to create healthy and sustainable communities.
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## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Active commuting (AC)</td>
<td>Physical activity undertaken as a means of transport includes walking, cycling and other non-motorised vehicles as well as public transport use, as this usually involved walking or cycling at the beginning or end of the journey.</td>
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<tr>
<td>Car pool</td>
<td>Car pool driver or passenger.</td>
</tr>
<tr>
<td>Dropped off</td>
<td>Dropped off by friend/family member who did not park at UWA.</td>
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<tr>
<td>Public transport (PT)</td>
<td>Public transport (includes bus, train, or ferry).</td>
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<tr>
<td>Single occupant vehicle (SOV)</td>
<td>Single occupant vehicle, drive car on own or uses motorcycle or scooter.</td>
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<tr>
<td>Suburb Zones</td>
<td>This classification provides an indication of appropriate active commuting distances, but are ‘as the crow flies’ and do not take into account location within the suburb or environmental factors such as quality of paths, roads, or geography of area.</td>
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<tr>
<td>Walkable distance (Zone 1)</td>
<td>Zone 1 included suburbs where the majority of the suburb was located within a 1km radius of the UWA Nedlands/Crawley campus. This distance represents a ‘walkable’ distance.</td>
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<tr>
<td>Cyclable distance (Zone 2)</td>
<td>Zone 2 included suburbs outside of Zone 1 where the majority of the suburb fell within an 8 km ‘as the crow flies’ radius of UWA, representing a ‘cyclable’ distance.</td>
</tr>
<tr>
<td>Other (Zone 3)</td>
<td>Zone 3 suburbs fall outside of the 8km radius, and are classified a being a distance to far from UWA to expect commuting by walking or cycling.</td>
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1. Introduction

The 2010 Active Commuting project replicates a Healthway-funded 2003 survey that explored the potential for The University of Western Australia (UWA) to use environmental and policy initiatives to increase active transportation for both staff and students.

It is anticipated that UWA will increase its population to more than 26,000 students and 4,400 staff over the next 10 years (SKM 2009). This will place increased pressure on parking and traffic within and near the University. It is important that these increases are planned for and alternative modes of travelling to UWA, aside from single occupant vehicle, are encouraged.

This project aimed to provide data on how staff and students travel to UWA and insight into what influences choice of travel mode to UWA. Data were collected to inform the UWA Transport Planning Program.

The objectives for the 2010 research were to:

- Provide UWA Transport Planning Program data on how staff and students commute to and from UWA;
- Compare the 2003 and 2010 results to enable trend analysis;
- Elicit staff and student reactions to possible strategies aimed at increasing active transportation to and from the University;
- Provide data that could assist strategic planning for programs that could encourage use of non-car transport modes to UWA.

The 2010 Active Commuting project comprised a survey of staff and students. The results of this survey are presented in two reports, one for staff and the other for student results. This Executive Summary, the third report, summarises the key results from the 2010 surveys for both staff and students and provides a detailed description of the methodology. Furthermore, it outlines suggested strategies to increase and maintain active commuting to UWA for staff and students.

The 2010 results are presented in three volumes:

- Volume I: Executive Summary
- Volume II: Results of the Staff Survey
- Volume III: Results of the Student Survey.

This report series build upon the previous work. A summary of earlier work can be accessed from the Centre for the Built Environment and Health website

2. Methods

2.1. Sample

The study population for this cross-sectional survey were employees and students of The University of Western Australia. Overall, 2,300 staff were randomly selected from 2,809 staff. The eligibility criteria for staff were as follows:

- Employed on at least 0.4 full time equivalent basis; and
- Working on main campus (i.e. defined by mail box delivery point located on Nedlands/Crawley campus).

Overall, 2,500 students were also randomly selected from 16,200 students who met the criteria. The eligibility criteria for students were as follows:

- Enrolled in at least one first semester unit in 2010 (undergraduate or postgraduate);
- Term location, address and postcode located in WA Metropolitan Region; and
- Studying on main Nedlands and Crawley campus (i.e. not enrolled in Dental Science or Bachelor of Medicine & Bachelor of Surgery, or regional campuses).

Consistent with the 2003 UWA Staff and Students Transport Survey ethics approval was gained through UWA Human Research Ethics Office. Staff contact details (name, mailbox delivery point, department and email) were provided by Human Resources and student contact details (name, term postal address and email) were provided by the Institutional Research Unit.

2.2. Survey Procedures

The study participants were contacted via a letter from the Centre for the Built Environment and Health forwarded by Uniprint on 22nd April 2010 for staff and 23rd April for students, inviting them to participate in a web-based survey. The letter of invitation included an opportunity for participants to decline further involvement in the study (Appendix 1). Reminders were sent to those who neither declined to participate nor completed the survey (sent at two and three weeks following invite). Study participants were invited to visit the website, and chose whether or not to participate in the online survey. Participants indicated their consent to participate by choosing to complete the survey. To comply with ethics requirements, the research team was blind to identifying details of student and staff members. Letters and email were sent out through a third party.

Each staff member or student randomly selected to participate was given a unique password which enabled them to access the site. In this way, the database was used to identify which staff members or students had or had not accessed the survey, without linking their identity to their responses.

Data were collected over a five week period including the last week of April and the first four weeks of May. This matched the data collection period for the 2003 survey which aimed to precede the months of June to August to account for different commuting behaviour that may be affected by winter weather conditions.

Nevertheless, during the 2010 survey period, rainfall was recorded on only one weekday (Bureau of Meteorology). Thus, the overall weather conditions are unlikely to have biased commuting behaviours for the participants.
2.3. Response Rate

In 2010, 88 staff members of the 2,300 invited to participate were deemed ineligible (e.g., leave at the time of the study period, no longer employed at UWA). An overall response rate for staff of 65.1% was achieved, which was considerably higher than the 2003 (55.3%) (Table 2.1).

In 2010, 2,500 students were invited to participate in the study and of these 2,481 were eligible to participate. The total number of students who participated in the survey was 1,105 with a response rate of 44.5%. This was slightly lower than the response rate from the 2003 survey (48.2%) (Table 2.1).

Table 2.1: Response rate for staff and students (2010)

<table>
<thead>
<tr>
<th></th>
<th>Staff</th>
<th>Students</th>
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<tbody>
<tr>
<td>Sample</td>
<td>2,300</td>
<td>2,500</td>
</tr>
<tr>
<td>Ineligible/Not contactable</td>
<td>109</td>
<td>19</td>
</tr>
<tr>
<td>Revised total</td>
<td>2,191</td>
<td>2,481</td>
</tr>
<tr>
<td>Completed</td>
<td>1,426</td>
<td>1,105</td>
</tr>
<tr>
<td>Response rate</td>
<td>65.1%</td>
<td>44.5%</td>
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2.4. Survey Instrument

An on-line questionnaire was developed based on the 2003 questionnaire. The original (2003) questionnaire was adapted from the Department of Transport (formerly the Department of Environment) TravelSmart Workplace questionnaire and was revised in conjunction with the Heart Foundation, UWA School of Population Health and UWA School of Exercise and Sport Science. The new on-line survey was tested and questions updated to realign with the objectives of the current study.

The questionnaire sought information on current travel behaviour and included a one-week travel diary. Questions regarding reasons for using current travel mode, consideration of an alternative mode, and barriers and motivators to using active modes of travel were tailored to study participants’ current mode and consideration of an alternative. In addition, items assessed study participants’ confidence to use active modes and stage of behaviour change. In 2010, with advice from the Centre for Social Change, the survey also included items on social norms and with advice from the Office of Facilities Management, staff reactions to potential strategies to support active commuting to UWA. It also provided an opportunity for staff and students to comment upon the survey and any thoughts regarding transport to UWA. The 2010 questionnaire is presented in Appendix 2.

Qualtrics Survey Software was used to conduct the on-line survey. The survey was programmed and tested by the project coordinator. The new items were tested for test-retest reliability on a sample of 21. All new items had acceptable reliability (Cronbach alpha or intraclass correlations ≥0.55). Minor edits were made to items with lowest reliability. Following reliability testing the survey was piloted on 20 UWA staff and students who were not eligible to participate in the survey.

2.5. Treatment of data

Data collected in the two survey years were merged. Where possible, variables were matched to enable comparison of the 2003 and 2010 data. The data files were split by staff and students for analysis and reporting (staff results are presented in Volume II and student results presented in
Volume III of this report series). To facilitate comparison, the survey data for both 2010 and 2003 were also weighted by age and gender to represent the 2010 UWA staff and student populations. Results present weighted data unless otherwise specified. Unweighted data were used for the multivariate analyses.

### 2.6. Data analysis

All analyses were conducted in PASW Statistics V18. In most instances descriptive statistics and results from cross-tabulations are presented. However, binary logistic regression analyses were undertaken to examine the adjusted associations between factors that were likely to influence commuting behaviour and intention to change to active mode of transport. Factors associated with currently using active transport to travel to UWA were also explored. A combination of forced entry and backward deletion regression multivariate models were used throughout this report.
3. Key Findings

3.1. Staff Survey

Modes of transport

- In 2010, the most frequently used mode of transport by UWA staff was the single occupant vehicle (SOV) accounting for 61.3% of all trips, followed by public transport accounting for 13.1% of trips.

- Nevertheless, the proportion of trips made by SOV decreased significantly from 67.2% in 2003 to 61.3% in 2010. The proportion of trips made using public transport increased from 9.6% to 13.1% and proportion of trips made by cycling increased from 4.5% to 8.5% between 2003 and 2010.

- The proportion of staff travelling to UWA by SOV every weekday decreased significantly from 42.8% in 2003 to 36.4% in 2010. There was also a slight increase in the proportion of staff not using SOV for any trips to campus from 25.3% to 28.5%.

- In 2010, one in five (19.5%) staff respondents used public transport for at least one trip during the week. This was up from 14.9% in 2003.

- The proportion of staff travelling to UWA by each mode was similar for each day of the week surveyed.

- Based on the number of part-time and full-time staff working on the main campus at the time of the survey, it is estimated that currently 15,075 trips are generated weekly by SOV, 3,229 trips by public transport, 2,091 by cycling and 1,492 trips by walking.

- In addition to total trips, the main mode (i.e, ≥ 6 trips/week) used to travel to UWA was calculated. Despite an overall decrease in SOV trips to UWA since 2003, in both 2003 and 2010, SOV remained the main mode of transport used by the majority of staff (60.1% in 2003 and 60.5% in 2010).

- Nevertheless, public transport use as the main mode increased significantly from 8.6% in 2003 to 12.6% in 2010.

- The proportion of staff walking as main mode was comparable between 2003 and 2010 at around 5.0%, while the proportion of staff cycling as their main mode, increased slightly from 7.7% in 2003 to 9.4% in 2010.

- More female than male staff members used SOV as their main mode. While males were significantly more likely to walk or cycle compared with females, the proportion of females using public transport as their main mode of travel almost doubled from 6.4% in 2003 to 12.0% in 2010.

- SOV use was highest among the staff members over the age of 51 years. The proportion of active commuters was significantly higher in the 31 to 40 year age group compared with other age groups.

- In 2010, the majority (59.8%) of staff members living within ‘walking distance’ from UWA walked to and from campus and 8.5% cycled. Nevertheless, one in five staff members living within Zone 1 (21.4%) drove to UWA as their main mode in the week surveyed.

- Overall 23.0% of staff living a ‘cyclable distance’ (approximately 2-8km) from UWA cycled to UWA as their main mode, and 11.0% used public transport.

- The proportion of staff living further than 2km from UWA (outside Zone 1) who used public transport as their main mode of travel to UWA increased between 2003 and 2010 from 6.9% to 11.0% in those living within a ‘cyclable’ (2-8kms (Zone 2)) distance to UWA, and from 10.2% to 14.3% in those living further than 8km from UWA (Zone 3).
Many staff used a combination of modes to travel to UWA across the week. For example, of staff who used public transport as their main mode, 22.1% also travelled to UWA by SOV for at least one trip during the week surveyed, and 19.2% were dropped off at least once. Almost one third of cyclists also used SOV and 17.6% use public transport for at least one trip during the week surveyed. This highlights the importance of a flexible transportation policy at UWA, to accommodate mixed mode travel.

In 2010, the majority (69.5%) of staff respondents owned a UWA staff parking permit. Of those who own a parking permit 81.2% drove to UWA using SOV as main mode, compared with only 13.9% of those who did not own a permit.

**Use of UWA vehicles**

- Approximately one-half of staff members reported travelling from UWA to other locations for work-related business. Moreover, most of these study participants (61.5%) used their own vehicle for their most recent trip off campus. Of those staff who travelled off campus for work, only 39.5% had access to a UWA vehicle.

- Only one quarter of all staff indicated that their School/Department provided a vehicle for use during work hours. Of those, 84.6% reported that they had ‘ever’ used it.

- Only one in five staff indicated that their School/Department provided access to a bicycle for use during work hours. Of those, 53.3% reported that they had ‘ever’ used it.

**Profile of an active commuter**

- After adjustment, staff members living within a ‘walkable distance from UWA’ (approx 1 km) were almost 8 times more likely to actively commute to UWA compared with those living further than 8kms from UWA.

- Despite living within approximately 8 km of UWA, staff living within a ‘cyclable distance’ (8kms) were only 1.6 times more likely to actively commute to UWA than staff living further than 8 km from UWA.

- The odds of using an active mode were 1.7 times higher in male compared with female staff members.

**Main reasons for current main mode**

- Among SOV users, ‘length of travel time’, ‘dropping children/people off/picking up on way to or from UWA’ and ‘convenience’ were the most frequently reported reasons for using SOV to travel to UWA.

- One fifth of public transport users reported ‘not having a car available’ as the main reason they used public transport to travel to UWA.

- The majority of respondents who walked did so because they ‘live close to UWA’.

- Cyclists were more likely than others to select ‘exercise’ as their main reason for cycling to UWA.

- ‘Improvement of health and fitness’, ‘enjoyment’ and ‘personal contribution to reducing air pollution’ were rated as the most important motivators to those considering walking or cycling.
Considering alternative modes

- In 2010, 29.9% of staff respondents reported that they were considering altering their mode of travel to UWA. Overall, very few (1.5%) UWA staff members were considering walking, 9.7% were considering cycling, and 11.9% were considering taking public transport while 4.0% were considering changing to SOV/motorcycle/scooter.
- Females were more likely than males to be considering a change to public transport.
- Compared with those living beyond an 8 km radius of UWA, a higher proportion of those living within a walkable or cyclable distance to campus (i.e., <=8km) were considering adopting active modes.
- In SOV motorcycle/scooter users, public transport and cycling were the most frequently considered alternatives. Staff currently walking or cycling as their main mode for travel were the least likely to be considering changing to an alternative mode.

Profile of staff considering changing from SOV to an active mode of transport

- After adjustment, staff living with a ‘walkable distance’ (approximately ≤1km) from UWA were 4.5 more likely to be considering changing from SOV to an active mode compared with those living further than 8kms from UWA. Staff living between one and eight kilometers (Zone 2) of UWA, were also twice as likely to be doing so.
- There were no statistically significant differences in likelihood of considering change to active mode by gender, age or ownership of parking permit.

Individual and social factors influencing active commuting

- Staff who felt more confident in their ability to actively commute to or from UWA appeared more likely to respond to efforts to encourage active commuting.
- Males were significantly more confident than females that they could commence cycling to UWA. Confidence to commence cycling was lowest in respondents aged 51 years and over.
- Confidence to use public transport decreased with age.
- Of staff living within a walkable distance to UWA (i.e., <=1km), 79.5% were confident they could walk, yet only 59.8% were current regular walkers.
- Similarly, 23.3% of staff living in Zone 1 were confident that they could cycle, compared with only 8.5% who currently cycled as their main mode.
- In Zone 2, 48.3% were confident they could cycle but only 23.0% cycled as their main mode. Moreover, 43.0% of those in Zone 2 were confident that they could regularly take public transport part or all of the way to or from UWA, although only 11.0% currently did so on a regular basis.
- Similarly, in Zone 3, 37.3% of staff members were confident they could use public transport while only 14.3% currently did so.
- The proportion of respondents living in Zone 2 and Zone 3 who were confident they could use public transport increased significantly between 2003 and 2010. Similarly, the proportion of staff members living in Zone 2 who were confident they could cycle also increased between 2003 and 2010.
- As expected, staff members who regularly walked, cycled or used public transport to UWA were mostly ‘confident’ in their ability to continue to do so.
- After adjustment for gender, age group, distance lived from UWA and having a parking permit, staff members who were confident they could walk, cycle or use public transport
to travel all or part of the way to UWA were up to eight times more likely to be active commuters compared with those not confident. This highlights the importance of strategies aimed at increasing ‘self efficacy’ for active travel.

- On average, staff rated having a quick commute to work as more important to them than other considerations. Having a cheap commute to work, environmental concerns, protecting the environment, reducing greenhouse gas emissions and helping to reduce air and water pollution were equally rated, and were less personally important to staff than a quick commute to work.

- Females were significantly more likely than males to rate protecting the environment, reducing greenhouse gas emissions, reducing air and water pollution and having a quick commute to UWA as more personally important to them.

- On average, having a quick and cheap commute to UWA were rated as less important to older (51 years or older) than younger (<31 years) staff members.

- There were no differences in rating of having a quick and cheap commute to study by distance lived from UWA.

- Staff who cycled to UWA most trips of the week rated their personal responsibilities to the environment and encouraging active commuting as more important, on average, than those travelling to UWA by SOV.

- In addition, females were slightly more likely than males to feel a social responsibility to reduce their car use.

- Staff members using public transport and cycling as their main mode of travel to UWA were more likely to agree that they have a social responsibility to reduce their car use compared with respondents using other modes.

- Staff members living furthest from UWA were least likely to agree they had a social responsibility to reduce their car use. Due to distance travelled, it is likely that few of these respondents felt they had a feasible alternative to using their car.

- Staff members not considering changing mode and those considering changing to SOV/motorcycle/scooter were least likely to feel social responsibility to reduce car use.

- Almost two thirds of staff respondents reported knowing people who were currently trying to reduce their car use. There were no statistically significant differences in responses by gender, age groups, suburb zone or main mode of travel to UWA.

**Barriers to active commuting**

- The ‘time involved’ was the barrier rated most important by respondents who were considering using public transport. Other barriers were ‘need to start early and finish late’ and ‘public transport has too many connections’.

- The weather and ‘need to run errands during day’ were rated as the barriers with most importance for those considering cycling.

- For respondents not considering using an active transport mode to travel to UWA, the ‘time involved’, ‘distance to UWA too far’ and ‘need to start work early and finish late’ along with public transport having too many connections and being too infrequent were the most highly rated barriers to active commuting to UWA.
Motivators to active commuting

- On average, motivators to public transport were rated as less important than motivators to walking, cycling and active commuting modes in general.

- ‘Personal contribution to reducing air pollution’ and ‘improvements to health and fitness’ were rated as motivators with greatest importance among respondents considering public transport.

- ‘Improvement of health/fitness’, ‘enjoyment’ and ‘personal contribution to reducing air pollution’ were also rated as the most important motivators to those considering walking or cycling.

- In staff not considering changing to an active mode of commuting to UWA, ‘improvement to health and fitness’ was rated an important factor in encourage them to use a mode of travel other than a private vehicle to travel to and from UWA.

- On average ‘potential to save money’, ‘personal contribution to reducing air pollution’ and ‘avoiding the need to find parking’ were only considered ‘somewhat important’ motivators to active commuting.

Initiatives to encourage active commuting

- There are many initiatives that could be introduced to the University's physical and policy environment to encourage staff to actively commute and staff were canvassed about which of these might be most effective.

- A University subsidised public transport pass was considered by staff members as the most likely initiative to encourage them to actively commute to UWA.

- In general, females rated ‘night time bus’, ‘reduced parking fees for car pool drivers’ and ‘improved pedestrian path system’ as more likely to encourage active commuting compared with males who rated more highly ‘improved shower and locker facilities’ and ‘access to UWA fleet vehicles’.

- For all suggested initiatives the younger staff (under 40 years) were more likely to indicate being encouraged by the various suggestions than staff age 41 years and over.

- Respondents living within a ‘cyclable distance’ from UWA (Zones 1 and 2) were more likely to be encouraged to active commute by improvements to pedestrian and cycle path systems, improved bicycle parking, locker and showering facilities, and a night time bus service compared with those living further from UWA (Zone 3).

- Importantly, the subsidised public transport pass received more support from staff living in all zones, but particularly those living furthest from UWA (Zone 3) than other initiatives.

- The most frequently mentioned suggestion for improving access to UWA was improved public transport (including reliability, frequency, efficiency and number of services).

- Alternative modes of public transport, a light rail and ferry services, were also suggested by staff.

- With regard to walking and cycling, staff suggested improvements to cycling infrastructure in particular routes to UWA, and end use facilities.

- Despite support for various initiatives, support for the increasing parking fees to fund these initiatives was lower among respondents living furthest from UWA (Zone 3) compared with those living closer. Undoubtedly these staff member rely on motor vehicle travel to facilitate an efficient commute to work, more so than others.

- In general, respondents using active modes to travel to UWA were more likely than others to support the suggested initiatives, funded through increase in parking fees.
- Notably, staff with no current parking permit were more likely to support increased parking fees to fund initiatives compared with staff who have a parking permit.

- After adjusting for gender, age, distance from UWA and parking permit, SOV users considering changing to active mode were significantly more likely to support the increase of parking fees to fund a subsidised public transport pass, improved cycling end use facilities and paths, a shuttle bus to other UWA sites and a bicycle loan system.
3.2. Student Survey

Modes of transport

- In 2010, the most frequently used modes of transport among students during the survey period were single occupant vehicle (SOV) and public transport accounting for 37.7% and 34.4% of trips respectively.

- The proportion of trips to UWA made by SOV decreased from 41.1% of trips in 2003 to 37.7% of trips in 2010. Public transport trips to UWA increased, from 26.0% to 34.4% of trips during the same period.

- Main mode (i.e., ≥ 6 trips/week) used to travel to UWA was also assessed. Public transport as the main mode of transport to UWA increased significantly from 25.3% in 2003 to 33.3% in 2010. During the same period, walking as the main mode of transport to UWA decreased significantly from 13.5% to 8.7%.

- The frequency of using public transport as the main mode of commuting to UWA declined with age, with the most significant decline occurring from 16 to 20 years to 21 to 25 years (from 52.3% to 24.6%). First year students at UWA are not provided with a parking permit and this is reflected in the use of public transport as the most common main mode among students in the 16 to 20 years age category (52.3%).

- Use of active modes of transport to UWA among 16 to 20 year olds was higher in 2010 compared with 2003. However, there was a decline in active commuting among 26-30 year olds and 31 years and older between 2003 and 2010.

- Transport patterns were examined by proximity to UWA. Three zones were considered (Zone 1: suburbs approximately 1km from UWA; Zone 2: suburbs between 1 and 8kms of UWA and Zone 3: suburbs further than 8kms of UWA).

- In 2010, 69.6% of respondents living in Zone 1 walked to and from campus as their main mode and 18.3% cycled as their main mode. While the proportion of student walking increased between 2003 and 2010 (from 64.7%), cycling decreased from 24.6% in 2003. Notably, in 2010, although small, twice as many students living in Zone 1 drove to UWA as single occupant drivers (i.e., SOV) (7.0%) compared with 2003 (3.2%).

- Frequent use of public transport increased with the great the distance study participants lived from campus. It is likely that as distance from UWA increases, those without access to a motor vehicle find walking or cycling less attractive options.

- Use of public transport as the main mode of travel to UWA increased between 2003 and 2010 in Zone 2 (23.4% and 34.7%) and Zone 3 (32.6% and 37.7%).

- Although main modes were explored, many students used a combination of modes to travel to UWA during the week: 10.8% of students who used a SOV as their main mode of travel to UWA also used public transport and 9.5% of SOV drivers also used a car pool for at least one trip during the week. Those who used public transport and those who used cycling as their main mode also travelled in a SOV for at least one journey (15.8% public transport users and 18.8% cyclists).

- In 2010, 16.7% of student participants owned a parking permit. Of these, 80.0% used a SOV as their main mode of travel, compared with 24.0% of those who did not own a permit (whether it be by choice or ineligibility).

- Students without a parking permit were around 26 times more likely to use public transport, cycle or walk as their main mode compared with student who owned a parking permit.
Profile of an active commuter

- The odds of being an active commuter (i.e., walking, cycling or public transport use) were significantly lower amongst respondents aged 21 years and older compared with those aged 16 to 20 years of age. Students living in Zone 1 were 8.4 times more likely to be an active commuter compared with those living in Zone 3. There were no statistically significant differences by gender after adjusting for age, suburb zone and possession of a parking permit.

Reasons for using a main commuting mode

- Among those who used a SOV as their main mode of commuting to UWA, the most common main reasons for doing so were ‘length of travel time’ and ‘convenience’.

- The majority of respondents who used public transport did so because they did not have a license or access to a car (36.2%) or because they preferred public transport for ‘cost savings’ reasons (25.3%).

- The vast majority of respondents who walked to UWA did so because they lived close to campus (88.6%).

- Students who commuted to UWA by cycling did so for somewhat different reasons including enjoyment (19.3%), exercise (18.8%) and cost savings (16.6%). Compared with walkers, they were less likely to say choose their mode because they lived close to UWA (26.8% compared with 88.6%)

Considering alternative mode

- Around one quarter of students indicated that they were considering using an alternative mode to commute to UWA than the mode they used most in the previous week. This was consistent with results from the 2003 survey.

- Overall, very few (0.3%) UWA students in 2010 were considering walking, 6.4% were considering cycling and 9.3% were considering taking public transport as an alternative to their current main mode. However, almost 7% of students were considering changing to a SOV, motorcycle or scooter.

- Students without a parking permit were at least twice as likely to be considering changing from using a SOV to an active mode compared with students with a parking permit (after adjusting for gender, age and suburb zone).

Individual and social factors influencing active commuting

- Students who felt confident in their ability to actively commute to or from UWA were more likely to respond to efforts that encourage active commuting. Confidence in changing behaviour (or self efficacy) is important because those with greater confidence are more likely to attempt to change their behaviour, and continue to try if thwarted in their efforts.

- In general, respondents who drove to UWA were more confident that they could switch to public transport rather than walking or cycling. These patterns were similar to patterns seen in the 2003 survey.

- Of those considering walking or cycling to or from UWA on at least some days of the week, more than three quarters were confident that they could cycle on a regular basis and almost seven out of ten (68.9%) students considering using public transport were confident they could do so for at least some days of the week.
• There were no statistically significant differences between males and females in their confidence to walk or use public transport on a regular basis to travel to UWA. However, more males than females were confident they could regularly cycle to UWA (30.8% vs 20.1%).

• Confidence to regularly use public transport to travel to UWA decreased with age. However, students aged between 26 and 30 years were more likely to be confident they could walk or cycle to UWA compared with all other age groups.

• Of students living within a ‘walkable’ distance from UWA (i.e., Zone 1; within 1 kilometre), 87.1% were confident they could walk, despite only 69.6% reporting they were currently regular walkers. In addition, 63.8% of students living in Zone 1 were confident that they could cycle, even though only 18.3% did report to cycle as their main mode.

• The proportion of respondents living in Zone 2 and Zone 3 who were confident they could use public transport increased significantly between 2003 and 2010. From 55.4% to 66.8% among Zone 2 (‘cycable’ distance between approximately 2 and 8 kms) and from 60.1% to 66.4% within Zone 3, further than 8 kms.

• In Zone 2, 66.8% were confident that they could regularly take public transport part or all of the way to or from UWA, although only 34.7% currently used public transport on a regular basis. In Zone 2, 45.7% were confident they could cycle but only 14.9% cycled as their main mode. In Zone 3, 66.4% of students were confident they could use public transport compared with only 37.7% who currently did so.

• After adjusting for gender, age and distance from UWA, drivers who were confident they could regularly cycle to UWA or could regularly use public transport were more likely to be considering an active mode than those who were not confident they could do so.

• Students rated having a quick and having a cheap commute to work/study of greater personal importance than environmental concerns such as, protecting the environment, reducing greenhouse gas emissions and helping to reduce air and water pollution.

• Nevertheless, after adjusting for demographic factors, students considering changing from SOV to an active mode were generally more likely to consider protecting the environment as very or somewhat important. They were also more likely to consider it important to use active modes to commute to UWA when possible and to feel a responsibility to reduce their car use.

Barriers to active commuting

• Barriers to active commuting varied by mode of transport considered, gender, age and distance lived from UWA.

• On average, ‘time involved’ was the barrier rated as most important by students not considering using active commuting modes and those who were considering using public transport. ‘Too much to carry’, ‘need to start early and finish late’ as well as ‘distance to UWA’ were also important barriers to using active modes. ‘Time involved’ was not considered the most important barrier to those considering cycling to UWA. For these students, ‘weather’ and ‘too much to carry’ were the most important barriers.

• On average, females rated most barriers to active commuting higher than males.
Motivators to active commuting

- (Lack of) ‘availability of parking at UWA’ and ‘avoiding the need to find parking’ were important motivators for students considering using public transport as an alternative to driving a vehicle to UWA.

- On average, financial motives (‘potential to save money’ and ‘cost of parking at UWA’) were considered more important to the younger students compared with others.

- Of the 6.4% of students considering cycling to UWA as an alternative to driving a vehicle, the most important motivator was ‘improvements to health and fitness’. Other important motivators to cycling reported were ‘enjoyment’, and the ‘potential to save money’.

- ‘Potential to save money’, ‘avoiding the need to find parking’ and ‘availability of parking at UWA’ were rated as important factors in encouraging students to use modes of travel other than a private vehicle to get to and from UWA.

- Students living the greatest distance from UWA generally rated motivators to use an alternative to SOV to travel to UWA as less important compared with those who live closer. In particular, motivations such as ‘improvements to health and fitness’, ‘personal contributions to reducing air pollution’, ‘enjoyment’ and access to end use facilities were rated of less importance to students living in Zone 3 compared with others.

Initiatives to encourage active commuting

- There are many changes that could be made to the University’s physical and policy environment to encourage students to actively commute. A list of these possibilities was compiled for the survey. Students rated a University subsidised public transport pass the highest of all initiatives presented. Perhaps not surprisingly, on average, increased parking fees for SOVs was considered the least likely initiative to encourage active commuting.

- Compared with others, students in the oldest age group (31 years and older) generally placed lower importance on all initiatives for encouraging active commuting.

- The subsidised public transport pass rated highest among students who were already taking public transport (mean 4.8 (SD 0.7)). Thus, the introduction of a subsidised public transport pass could be an effective behaviour reinforcement strategy which is important given 6.7% of students were considering switching to SOV/motorcycle or scooter and the number of drivers increases between 16 to 20 and 21 to 25 year age group, when students are permitted to obtain a parking permit.

- The introduction of a subsidised public transport pass was more likely than any other interventions to encourage current SOV users to switch to an active mode (mean 3.8 (SD 1.4)). It was also the highest scoring item among cyclists and those using ‘other’ modes of transport such as carpool and drop off to UWA (mean 4.0 (SD 1.4)).

- Overall, 288 students made suggestions about how UWA could encourage staff and students to use alternatives to driving to access the Crawley and Nedlands campus. The most frequently mentioned suggestions included improving public transport (reliability, frequency and efficiency), subsidising the cost of public transport, providing UWA shuttle bus services from key locations and centres (i.e. train stations) and improving end use facilities for walking and cycling.

- Respondents were asked to indicate to what extent they agreed or disagreed with UWA increasing parking fees in order to fund a series of initiatives that encouraged active commuting to UWA. On average, a subsidised public transport pass for all bus and train services to and from UWA was the most supported initiative by students (mean 4.2). The mean ratings for all other initiatives ranged from 2.8 to 3.1 (SD 1.4) indicating a
tendency for students to neither agree nor disagree on average, with the increase in parking fees to fund these other initiatives.

- Nevertheless, students considering using an active mode were almost twice as likely to agree with using funds from increasing parking fees to improve end use cycling facilities at UWA and provide better cycle paths around UWA.

- At the completion of the survey students provided a variety of comments including suggestions for improving parking through means other than increasing parking fees, calls for improvements to public transport to UWA, as well as outlining personal challenges to travelling to UWA by mode other than own car.
4. Discussion and recommendations

As the number of UWA staff and students increases, pressures on parking and traffic within and around the University will also increase. Therefore UWA is planning for and managing current and future demands. The University’s transportation plan provides an opportunity for UWA to play a leadership role in institutional sustainable transportation locally and nationally. Any transport plan needs to be comprehensive including strategies targeting not only individuals but also the University’s physical environment (i.e. facilities, signage), and policies (i.e. support for public transport, parking). It also requires strategies aimed at changing the culture within the University (i.e. creating a visible active commuting culture).

The survey data demonstrates that change in mode of travel to and from UWA is possible. Between 2003 and 2010 there were significant changes in the way staff and students travel to UWA; especially by public transport. Notably, between 2003 and 2010 it appears more staff and students used a variety of modes to travel to UWA. While the proportion of staff and students using SOV as their main mode of transport to UWA remained consistent between 2003 and 2010, the proportion of trips to UWA made by SOV decreased among both staff and students (from 67.2% of trips in 2003 to 61.3% in 2010 and from 41.1% of trips in 2003 to 37.7% in 2010 respectively). Some SOV trips were replaced by trips using public transport, and among UWA staff, trips by bicycle.

Sheth and Frazier (Sheth and Frazier 1982) provide guidance about strategy selection and choice of target groups. The model of strategy mix choices for social change identifies strategies that can be used to implement planned social changes, such as change in travel behaviour. In accordance with Sheth and Frazier’s recommendation (see Table 4.1), the 4.3% of respondents in Segment 1 who use an active mode and who are considering changing to SOV, require a rationalisation strategy that would encourage positive attitude change that would maintain their current behavior; while the 15.1% in Segment 2 who are predisposed to use an active mode, but who are not at present, require an inducement strategy that would lead to behaviour change. Staff and students in Segment 3 (29.4% of total), who currently use an active mode and intend to continue doing so, require a reinforcement strategy that reinforces and supports their active commuting behaviour. Finally, some of the 35.8% of staff and students who currently drive and do not intend to change (Segment 4) could be prompted to change through an engagement strategy that includes counselling for behaviour change as well as mandatory implementation. Nevertheless, for many in Segment 4, it will not be possible for them to completely shift to an active mode. However, it may be possible to shift their behavior on some days of the week (e.g., work from home on one day; car pooling or an active mode). In addition to the four segments, 15.5% of staff and students are usually dropped off, use carpool or do not travel to UWA. These people should also be encouraged to continue doing so, or to change to active modes of travel to UWA rather than converting to SOV.

This method of segmenting the target group by behavior and intention highlights the value of implementing a mix of strategies rather than a universal strategy. Plans to change behaviour should aim to facilitate reinforcement, inducement, rationalization and engagement to capture a wider segment of the target group.
Table 4.1: Distribution of considering switching to an active mode by commuting status

<table>
<thead>
<tr>
<th>Current commuting status</th>
<th>Segment</th>
<th>Considering change to:</th>
<th>% of total</th>
<th>Segment</th>
<th>Not considering change</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use active mode (walk, cycle or public transport)</td>
<td>1</td>
<td>drive/ motorcycle/scooter</td>
<td>4.3%</td>
<td>3</td>
<td>29.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11.3% of segment)</td>
<td></td>
<td></td>
<td>(76.6% of segment)</td>
<td></td>
</tr>
<tr>
<td>Drive on own/ motorcycle/ scooter</td>
<td>2</td>
<td>active mode</td>
<td>15.1%</td>
<td>4</td>
<td>35.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(28.4% of segment)</td>
<td></td>
<td></td>
<td>(67.3% of segment)</td>
<td></td>
</tr>
</tbody>
</table>

Table excludes respondents dropped off, using carpool and not travelling to UWA. Percentage of total sample in parentheses.

\(^1\)Segment based on Sheth and Frazier (Sheth and Frazier 1982)

\(^2\)Considering change to driving for those using an active mode and considering change to active mode for those driving

The majority of staff and students live further than eight kilometers from the University and most staff and many students usually travel to UWA by single occupant vehicle. Nevertheless there is still some potential to increase the use of active modes of transport to and from UWA.

Three quarters of staff (74.7%) and two thirds of students (67.7%) currently live more than 8km from UWA. Nevertheless, a significant proportion of staff (25.3%) and students (32.3%) live within approximately 8kms from UWA, which is considered to be a reasonable distance in which to commute by walking or cycling. Where possible, these staff and students should be encouraged and supported to use modes other than driving to get to and from UWA.

Staff who currently live in areas with good public transportation connectivity to the University (e.g., Fremantle, Midland) - even if more than 8km from UWA - and/or within 8 km of the University, represent groups with the most potential to change.

Research conducted in Europe (Molina-García, Castillo et al. 2010) indicated that distance lived from the University campus did not influence students use of public transport to travel to campus. Rather it was noted that fast access to public transport from students home was associated with public transport use. Ease of access to public transport from home should be considered when encouraging staff and students to use public transport.

While students who live further away from UWA, were not confident they could walk or cycle, most students (66.4%) were confident they could regularly use public transport to travel to UWA on at least some days of the week. Fewer staff, on the other hand, were confident they could switch from their current mode: nevertheless 37.3% of staff living further than 8kms from UWA were confident they could switch to public transport at least on some days and 43.0% living between 1km and 8km were confident they could do so.

Notably, when attempting to change commuting behaviour the University needs to consider that both staff and students rated having a quick and cheap commute to UWA as more important than UWA’s or their own responsibility to preserve the environment. While students are likely to be motivated to actively commute by avoiding the need to find parking and by possibility of saving money, the data suggests staff were more likely to be motivated to active commute for other benefits such as health and fitness for cycling enjoyment as well as the potential to save money. Importantly, collection of family members and need to run errands during the day were important reasons for staff and students driving to UWA.
If public transport was perceived as a positive experience and considered worthier (of time, convenience, saving) then staff and students may be more likely to continue to use public transport even as their situation changes (i.e. access to car, access to parking permit).

While the decrease in travel by SOV as main mode between 2003 and 2010 was greater among students than staff, there is an opportunity for the University to further increase this trend: for example a significant number of staff and students living within 8km of the University claimed they were confident they could walk, cycle or use public transport to travel to UWA on at least some days of the week. Moreover, more than one quarter (28.4%) of staff and students who currently drive claimed they were considering changing to an active mode of transport to travel to UWA on some days of the week.

Notably, if parking prices were to be increased, the introduction of a subsidized public transport scheme was the one intervention supported by both staff and students.

However for a subsidized public transport scheme to be successful it will require barriers to using public transport being addressed as there is a perceived lack of adequate public transport services to and from UWA and poor connectivity. Suggested improvements include buses running more frequently (particularly outside of business hours), further efforts to decrease waiting time when buses connect and more direct routes to UWA. It is unlikely that reduced cost alone will increase public transport use on an ongoing basis. In addition to improving public transport services the University should also aim to improve staff and students’ knowledge of the public transport system and how to use it efficiently (i.e. provide information on travel routes and efficient ways to travel by public transport such as using SMS notification for leaving times etc). This may be achieved through the introduction of a Travel Smart Program targeting both staff and students.

The results of this study suggest that a flexible approach to transportation planning is required: this could encourage staff and students to switch at least on some days of the week. Given that commuting behavior needs to be habitual to be maintained (de Bruijn, Kremers et al. 2009), it will be critical to provide staff with access to alternatives (e.g., access to a fleet of university vehicles or taxi vouchers to facilitate attending work-related meetings or emergency trip home) that allow staff to maintain their commuting behavior rather than bring their vehicle to the University to accommodate work-related meetings.

There was prominent opposition to the increase of parking fees particularly by staff and students who currently drive and live far from UWA, face a lengthy public transport commute, have health issues or require their car for other trips during the day, such as dropping off children.

In most cases concern over increase of parking fees was considered an issue of equity, whereby some staff and students believed it unfair to increase parking fees thereby penalizing staff and students who live further from UWA and have fewer transport alternatives. However, if 25% of staff and students who currently drive could be encouraged to switch their travel behavior from SOV on two days per week, this would decrease weekly trips to the University by SOV during term by approximately 7,170, freeing up approximately 717 car bays per day. This would make parking easier for those staff and students who have no choice but to drive.
There was some support for use of revenue raised through parking fees to be used for initiatives likely to encourage active commuting such as subsidized public transport. Respondents appear to believe it was important for UWA to encourage and support the use of alternative modes of transport to the campus however there were opposing view on whether or not this should be funded through an increase in parking costs as this was considered to discriminate against those who are least able to stop driving. In particular, students were opposed to parking increases to fund initiatives to assist people who live close to UWA to use cheaper and more accessible modes (i.e. shuttle bus to surround suburbs, cycle paths around UWA).

Any increase in parking fees should be accompanied with clear communication of how the generated revenue will be used by the University. Some staff and students suggested that parking fees should only be increased with consideration of those who have no alternative to drive.

Staff and students suggested scaled parking fees, mostly by distance lived from UWA and access to alternatives such as public transport, also for staff salary level.

4.1. Strategies to encourage use of active modes of travel to UWA

To change and maintain behavior will require a comprehensive approach that focuses on changes to individuals, the social or cultural environment, as well as the University’s built and policy environment. The need for a comprehensive approach to university transport planning is emphasized by Toor and Havlick (Toor and Havlick 2004) and more recently by Molina-García (Molina-García, Castillo et al. 2010). Both recommend utilizing a wide variety of strategies to meet the needs of the institution (such as improving infrastructure, educational programs to develop confidence and planning skills, reducing convenience of motorized travel and managing parking demand). It is the combination of these strategies which is likely to lead to the greatest change. To be most effective, social change, such as travel behaviour, needs to be planned for and managed. Based on the findings of this research, strategies that could be considered by UWA to encourage use of active transport are presented in Table 4.2. In many cases the strategies complement the changes suggested by Sinclair Knight Merz in the UWA Strategic Transportation Plan (SKM 2009).

<table>
<thead>
<tr>
<th>Target</th>
<th>Strategy</th>
<th>Possible approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td>Education and skills</td>
<td>Conduct a Travel Smart Program at the beginning of each year, to assist staff and students to make changes (Brög, Erl et al. 2009).</td>
</tr>
<tr>
<td>Information</td>
<td>Use UWA website (front page) to promote the Public Transport Authority’s transportation planner and availability of timetables, routes etc (Rose 2008).</td>
<td>Actively promote and provide support for car pooling services among staff and students.</td>
</tr>
<tr>
<td>Marketing</td>
<td>Promote the benefits of active commuting – health benefits (particularly to staff), time use, environment, cost savings (particularly to students), lack of parking on campus</td>
<td>Promote using active transport on some (i.e two) days of the week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promote cycling as convenient and easy mode of transport for which people don’t need specialized cycle clothing or equipment. Provide information on how to commute safely by bicycle</td>
</tr>
</tbody>
</table>
### Table 4.2 continued: Suggested strategies in encourage use of active modes of travel to UWA

<table>
<thead>
<tr>
<th>Target</th>
<th>Strategy</th>
<th>Possible approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social environment</td>
<td>Role modeling</td>
<td>Feature staff in UWA News who are currently using active modes or cycling as a mode of transport on campus (e.g., Professor Tracey Horten, Dean of the Business School, Professor Colin McLeod, Psychology; Lindy Brophy and Sally-Ann Jones Public Affairs)</td>
</tr>
<tr>
<td></td>
<td>Visible culture</td>
<td>Introduce a cycling ‘clock’ to promote how many people are cycling</td>
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<tr>
<td></td>
<td></td>
<td>Make active commuting modes visible on campus to develop the culture of active commuting around the University (i.e clear signage for end use facilities such as lockers and shower as well as signage for bus services)</td>
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<tr>
<td></td>
<td></td>
<td>Regular gatherings and events in public areas (such as bike to Uni breakfast on lawn outside University Club or Guild Village)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support staff and student advocacy groups (such as Bicycle Users Group and UWA Bicycle Collective) and make these groups visible on Campus. Encourage such groups to hold events and workshops such bike maintenance and information on commuting safely by bicycle. Consider having a commercially operated bicycle shop on campus.</td>
</tr>
</tbody>
</table>

![Photo courtesy of Billie Giles-Corti](image1)

**Figure 4.1: Showcasing role models who ride to work, or at work**
Professor Tracey Horten, Dean of Business, regularly seen cycling on campus

![Photo Copenhagen, courtesy of Billie Giles-Corti](image2)

**Figure 4.2: Promote cycling as something that ‘everyone’ is doing**
Two-way cycle paths could be installed along roads around the University
Photo taken from Heart Foundation Blue Print for an Active Australia

Table 4.2 continued: Suggested strategies in encourage use of active modes of travel to UWA

<table>
<thead>
<tr>
<th>Target</th>
<th>Strategy</th>
<th>Possible approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy environment</td>
<td>Enabling factor</td>
<td>Introduce a subsidised public transportation scheme. Make using public transport to travel to UWA cheaper than parking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Create a scheme for providing emergency 'ride home' to those who use active modes (walk, cycle, public transport) (as recommended in the UWA Draft Campus Plan 2010).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide pre-paid public transport passes to students at the beginning of each year to encourage trial of public transport use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide salary sacrificing of items such as bicycles and public transport passes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Partner with local and state government and Public Transport Authority to improve public transport infrastructure and services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manage parking demand through pricing strategies.</td>
</tr>
<tr>
<td>Built environment</td>
<td>Enabling factor</td>
<td>Provide high quality, accessible cycle end-use facilities on campus.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide access to University bicycles for commuting around campus and between UWA sites.</td>
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<td></td>
<td></td>
<td>Provide fleet of campus vehicles for use during work hours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide access to inexpensive items to assist using active modes of travel (for example bags, bike repair items, wet weather gear).</td>
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<tr>
<td></td>
<td></td>
<td>Work with local and state government to improve cycle paths leading to UWA (particularly from North, West, include a two way cycle path the Kings Park side of Thomas Street leading to the University).</td>
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<tr>
<td></td>
<td></td>
<td>Create a pedestrian and bicycle friendly campus by shifting from cars to pedestrian and bicycle paths (as suggested in the UWA Draft Campus Plan 2010).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase availability and affordability of residential accommodation for students within close proximity to UWA campus (as recommended in the UWA Draft Campus Plan 2010).</td>
</tr>
</tbody>
</table>
Figure 4.3: Actively promote (i.e salary sacrificing) bicycles that suit variety of needs

References


SKM (2009). The University of Western Australia Strategic Transport Plan. Perth, Sinclair Knight Merz.

Appendices

Appendix 1: Letter of invitation

[title][fname][sname]
[MBDP - staff]

Invitation to participate in a survey exploring commuting behaviour

Dear [insert preferred NAME],

Your name has been randomly selected by UWA Human Resources to be invited to participate in a study assessing patterns of commuting to and from UWA. This study is being conducted in collaboration with UWA Facilities Management and is investigating transport patterns and attitudes of UWA staff and students. The survey replicates a similar study conducted in 2003 and will inform the UWA’s transport planning and its efforts to reduce green house emissions.

What are you invited to do?

You are asked to complete an online survey about how you travel to and from UWA and your views on transport options. The survey is located at http://transportsurvey.sph.uwa.edu.au. The questionnaire is easy to complete and takes about ten minutes.

You will need to use this password [insert Staff ID] to access the site. Your responses are confidential and only aggregated data will be reported. The password will be used to identify those who have accessed the site, thereby enabling us to contact those people we have not heard from by 7th May 2010.

No matter what form of transport you use to travel to UWA, your participation is very important to the success of the study. As a small token of our appreciation, we are offering participants the opportunity to win one of ten $50 Co-Op Bookshop vouchers.

Please refer to the attached information sheet for more information about this project.

If you have any questions or concerns about this research, please contact either myself or Sarah French at the Centre for the Built Environment and Health, on 6448 1315 or email: sarah.french@uwa.edu.au.

Thanking you in advance for your time. We look forward to hearing from you.

Yours sincerely

Winthrop Professor Billie Giles-Corti
Director, Centre for the Built Environment and Health
If you do not wish to participate in the survey and would prefer to not be contacted by the researchers again please follow these instructions:

1. Fold this letter into thirds and staple with the below box showing on the outside.
2. Place in the University’s internal mail for collection, or place in an envelope, affix a postage stamp and mail back.

Thank you

Sarah French
M707
Centre for the Built Environment and Health
The University of Western Australia
35 Stirling Highway
CRAWLEY WA 6009
What are the benefits of this study to participants?
The information gained from the study will be used to assist the University develop its transportation plan. It will also contribute to research on commuting behaviours and attitudes within large organisations such as Universities. The survey examines University staff and students travel behaviour and seeks your views on transport options. The data collected in this survey will be compared with data collected in 2003 to observe how commuting to UWA has changed over the past seven years (if at all). Importantly, however, it will assist the UWA transport planning by providing information to inform the design of transport-related strategies.

How was your name selected?
Your name was randomly selected by Human Resources and letters forwarded to you by UniPrint. Your name has not been provided to the study team. The study team is only provided with your pin number to assist them in following-up those from whom we do not receive a reply in order to maximise the study’s response rate. This is important because the more people who participate, the more confident we are that the findings reflect the behaviour and opinions of the University community.

Why do we ask for your address?
In the survey you have the option of providing the study team your address. Providing this information completely optional, however it is very useful because it will allow us to examine each study participant’s access to travel-related resources e.g., access to high quality public transport, cycle paths etc. We will do this using a Geographic Information System (GIS), to develop measures of the environment. Your address will be kept confidential. It will be separated from your survey information and will be identified only through a personal ID code that we will assign to each participant.

Your participation is completely voluntary
Any information that you provide will be kept strictly confidential. Participation in this study is completely voluntary and you are free to withdraw at any time and for any reason during this study. If you choose to withdraw and inform Sarah French of your pin number information provided by you up to that point will be removed from the study. To do so contact Sarah French: 6488 1315; sarah.french@uwa.edu.au.

This project has received ethics approval in accordance with the policies and procedures of The University of Western Australia.

The University of Western Australia that requires that anyone wanting to make a complaint should contact the Human Research Ethics Office on 6488-3703 or on hreo-research@uwa.edu.au. Any complaint regarding the manner in which a research project is conducted may be given to the researcher.
Appendix 2: Questionnaire
# 2010 UWA Commuting Survey

## Mode of transport

**Q1.1** How did you travel to and from UWA on each day of last week?

<table>
<thead>
<tr>
<th></th>
<th>Drove car on own</th>
<th>Dropped off by friend/family member who did not park at UWA</th>
<th>Car pool driver or passenger</th>
<th>Bus only</th>
<th>Bus AND other public transport</th>
<th>Walk</th>
<th>Cycle</th>
<th>Motorcycle/Scooter</th>
<th>Did not go to UWA</th>
<th>Other Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 17th - To UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Mon 17th - From UWA</td>
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<tr>
<td>Tues 18th - To UWA</td>
<td>○</td>
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<tr>
<td>Tues 18th - From UWA</td>
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<td>○</td>
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<tr>
<td>Wed 19th - To UWA</td>
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<td>Fri 21st - From UWA</td>
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</tbody>
</table>

## Public transport

**Display This Question:**

If How did you travel to and from UWA on each day of last week... - Bus only Is Greater Than or Equal to 1

Or How did you travel to and from UWA on each day of last week... - Bus AND other public transport Is Greater Than or Equal to 1

**Q2.1** You used public transport last week. Please describe your usual method of reaching the public transport stop

- Walk
- Cycle
- Drive
- Other method

**Display This Question:**

If How did you travel to and from UWA on each day of last week... - Bus only Is Greater Than or Equal to 1

Or How did you travel to and from UWA on each day of last week... - Bus AND other public transport Is Greater Than or Equal to 1

**Q2.2** Please indicate the CLOSEST INTERSECTION to the public transport stop you use to travel to and from your home to UWA

Street 1
Street 2

**Display This Question:**

If How did you travel to and from UWA on each day of last week... - Bus only Is Greater Than or Equal to 1

Or How did you travel to and from UWA on each day of last week... - Bus AND other public transport Is Greater Than or Equal to 1

**Q2.3** Suburb

ALEXANDER HEIGHTS
Q2.4 How long does it take you to walk or cycle from home to the station/bus stop?

(minutes)

Q2.5 How long does it take you to walk or cycle from the station/bus stop at UWA to your usual destination at UWA?

(minutes)

Q3.1 You walked to or from UWA last week.

How long does walking to campus usually take you?

(minutes)

Q4.1 You cycled to or from UWA last week.

How long does cycling to campus usually take you?

(minutes)

Q5.1 You did not travel to UWA on many days last week. Was that a usual week for you?

- Yes
- No
Q5.2 How do you usually travel to UWA?

- Drive car on my own
- Dropped off by friend/family member who did not park at UWA
- Carpool driver or passenger
- Bus only
- Bus AND other public transport
- Walk
- Cycle
- Motorcycle/scooter
- Other method

Q5.3 You use a variety of modes to travel to and from UWA. What would you say is your USUAL mode?

- Drive car on my own
- Walk
- Dropped off by friend/family member who did not park at UWA
- Cycle
- Carpool driver or passenger
- Motorcycle/scooter
- Bus only
- Other method
- Bus AND other public transport

Q6.1 What is your main reason for choosing driving car alone or motorcycle/scooter as your main method of travel to and from UWA?

- Run errands before, during or after work
- Poor public transport
- Comfort
- Need to drop off/pick up children on way
- Requires less forward planning to get to/from UWA
- Convenience
- Length of Travel Time
- Access to cheap/free parking
- Need car for work purposes
- Too much to carry
- Other reasons: 
### Main reason - being dropped off

**Display This Question:**
- How did you travel to and from UWA on each day of last week?  
  - Dropped off by friend/family member who did not park at UWA is greater than or equal to 6

**Q7.1** What is your main reason for choosing **being dropped off at UWA** as your main method of travel to and from UWA?

- Cost saving
- No car available/don't have license
- Weather (rain, wind or heat)
- Poor public transport
- Comfort
- Unable to get parking permit
- Other reasons

---

### Main reason - carpool driver or passenger

**Display This Question:**
- How did you travel to and from UWA on each day of last week?  
  - Carpool driver or passenger is greater than or equal to 6

**Q8.1** What is your main reason for choosing **carpool driver or passenger** as your main method of travel to and from UWA?

- Cost saving
- No car available/don't have license
- Weather (rain, wind or heat)
- Poor public transport
- Comfort
- Unable to get parking permit
- Cost of parking at UWA
- Need to drop off/pick up children on the way

---

### Main reason - public transport
Q9.1 What is your main reason for choosing public transport as your main method of travel to and from UWA?

- Cost saving
- No car available/don't have license
- Comfort
- Unable to get parking permit
- Cost of parking at UWA
- Need to drop off/pick up children on the way
- Convenience
- Availability of parking at UWA
- Environmental concerns
- Other reason ____________

Main reasons - walking

Q10.1 What is your main reason for choosing walking as your main method of travel to and from UWA?

- Cost saving
- No car available/don't have license
- Enjoyment
- Live close to UWA
- Exercise
- Unable to get parking permit
- Cost of parking at UWA
- Availability of parking at UWA
- Environmental concerns
- Other reason ____________

Staff - travel and use of vehicles

Q11.1 Does your School/Department provide a vehicle for you to travel between UWA and home?

- Yes
- No

Q11.2 Does your School/Department provide a vehicle for you to use during working hours?

- Yes
- No
- Unsure
Q11.3 Does your School/Department provide a bicycle for you to use during working hours?
- Yes
- No
- Unsure

Q11.4 Have you ever used the vehicle supplied by your School/Department?
- Yes
- No

Q11.5 Have you ever used the bicycle supplied by your School/Department?
- Yes
- No

Off campus travel

Q12.1 When you are at UWA, do you travel to any other location off the Crawley/Nedlands campus for study or work related business?
- Yes
- No

Q12.2 On average, how many times a week do you go to study or work related business off campus?
- [ ] times per week

Q12.3 How did you travel for your most recent study or work related trip?
- Drive car/motorcycle/scooter on my own
- Car pool driver or passenger
- Public transport (bus, train, ferry)
- Taxi
- Walk
- Cycle
- Other method: [ ]
Display This Question:
If When you are at UWA, do you travel to any other location ... Yes is Selected

Q12.4
For your most recent study or work related trip, what was the suburb of destination? (metro region only, including Mandurah)

ALEXANDER HEIGHTS

Main reason - cycle

Display This Question:
If How did you travel to and from UWA on each day of last we... Cycle is Greater Than or Equal to 6
Or How do you usually travel to UWA? Cycle is Selected
Or You use a variety of modes to travel to and from UWA. Wha... Cycle is Selected

Q13.1
What is your main reason for choosing cycling as your main method of travel to and from UWA?

- Cost saving
- Unable to get parking permit
- No car available/don’t have license
- Cost of parking at UWA
- Enjoyment
- Availability of parking at UWA
- Live close to UWA
- Environmental concerns
- Exercise
- Other reason

Alternative mode

Display This Question:
If How did you travel to and from UWA on each day of last we... Drove car on own is Greater Than or Equal to 6
Or How do you usually travel to UWA? Drove car on my own is Selected
Or You use a variety of modes to travel to and from UWA. Wha... Drove car on my own is Selected

Q14.1
Your main mode of travel to UWA last week was Drove car on your own.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?

- Yes
- No

Display This Question:
If How did you travel to and from UWA on each day of last we... Dropped off by friend/family member who did not park at UWA is Greater Than or Equal to 6
Or How do you usually travel to UWA? Dropped off by friend/family member who did not park at UWA is Selected
Or You use a variety of modes to travel to and from UWA. Wha... Dropped off by friend/family member who did not park at UWA is Selected

Q14.2
Your main mode of travel to UWA last week was to be dropped off by friend/family member.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?

- Yes
- No
Q14.3
Display This Question:
If How did you travel to and from UWA on each day of last week? - Car pool driver or passenger is Greater Than or Equal to 6
Or How do you usually travel to UWA? Car pool driver or passenger is Selected
Or You use a variety of modes to travel to and from UWA. What?... Car pool driver or passenger is Selected
Your main mode of travel to UWA last week was car pool driver or passenger.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?
- Yes
- No

Q14.4
Display This Question:
If How did you travel to and from UWA on each day of last week? - Bus only is Greater Than or Equal to 6
Or How do you usually travel to UWA? Bus only is Selected
Or You use a variety of modes to travel to and from UWA. What?... Bus only is Selected
Or How do you usually travel to UWA? Bus AND other public transport is Selected
Or How do you usually travel to UWA? Bus AND other public transport is Selected
Your main mode of travel to UWA last week was public transport.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?
- Yes
- No

Q14.5
Display This Question:
If How did you travel to and from UWA on each day of last week? - Walk is Greater Than or Equal to 6
Or How do you usually travel to UWA? Walk is Selected
Or You use a variety of modes to travel to and from UWA. What?... Walk is Selected
Your main mode of travel to UWA last week was walking.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?
- Yes
- No

Q14.6
Display This Question:
If How did you travel to and from UWA on each day of last week? - Cycle is Greater Than or Equal to 6
Or How do you usually travel to UWA? Cycle is Selected
Or You use a variety of modes to travel to and from UWA. What?... Cycle is Selected
Your main mode of travel to UWA last week was cycling.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?
- Yes
- No

Q14.7
Display This Question:
If How did you travel to and from UWA on each day of last week? - Motorcycle/ Scooter is Greater Than or Equal to 6
Or How do you usually travel to UWA? Motorcycle/scooter is Selected
Or You use a variety of modes to travel to and from UWA. What?... Motorcycle/scooter is Selected
Your main mode of travel to UWA last week was motorcycle/scooter.
Have you recently considered switching to an alternative method of transport for any of your trips to or from UWA?
- Yes
- No
Barriers - public transport

Q14.8 What is the main alternative you have considered?

- Drive car/motorcycle/scooter on my own
- Car pool driver or passenger
- Public transport (bus, train, ferry)
- Walk
- Cycle
- Dropped off by a friend or family member
- Work from home/Telework
- Other

Barriers - Cycling

Q15.1 How important are each of the following reasons in explaining why you do not currently use public transport to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport between my home and UWA is too infrequent</td>
<td></td>
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<tr>
<td>Time involved</td>
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<tr>
<td>Weather (rain, wind or heat)</td>
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<td>Distance to UWA is too far</td>
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<tr>
<td>Additional forward planning would be required</td>
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<tr>
<td>Lack of knowledge of quickest and easiest bus route to UWA</td>
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<tr>
<td>Access to cheap/free parking at UWA</td>
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<tr>
<td>Need to travel to/from UWA at night</td>
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<tr>
<td>Need to run errands before, during or after work/classes</td>
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<tr>
<td>Necessity of taking children to/from school/daycare</td>
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<tr>
<td>Need vehicle for work/study purposes</td>
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<td>Too much to carry</td>
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<td>Need to start work early or finish late</td>
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<tr>
<td>Public transport route has too many connections</td>
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</tbody>
</table>

Display This Question:
- If Your main mode of travel to UWA last week was Drive car o... Yes is Selected
- Or Your main mode of travel to UWA last week was to be&nbsp;... Yes is Selected
- Or Your main mode of travel to UWA last week was car pool dr... Yes is Selected
- Or Your main mode of travel to UWA last week was public tran... Yes is Selected
- Or Your main mode of travel to UWA last week was walking... Yes is Selected
- Or Your main mode of travel to UWA last week was cycling. Ha... Yes is Selected
- Or Your main mode of travel to UWA last week was motorcycle/... Yes is Selected

Display This Question:
- If What is the main alternative you have considered? Public transport (bus, train, ferry) is Selected

http://new.qualtrics.com/ControlPanel/?ClientAction=EditSurvey&Sect...
**Display This Question:**

If What is the main alternative you have considered? **Cycle is Selected**

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<thead>
<tr>
<th>Reasons</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
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<tbody>
<tr>
<td>Lack of continuous cycle paths to UWA</td>
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<tr>
<td>Lack of secure bicycle parking facilities at UWA</td>
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<td>Lack of secure lockers</td>
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<tr>
<td>Lack of or poor changing /showering facilities at UWA</td>
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<td>Lack of knowledge of quickest and easiest cycle route to UWA</td>
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<tr>
<td>Necessity of bringing a change of clothes</td>
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<tr>
<td>Access to cheap/free parking at UWA</td>
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<tr>
<td>Danger from vehicular traffic</td>
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<tr>
<td>Need to travel to/from UWA at night</td>
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<td>Physical effort involved</td>
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<tr>
<td>Need to run errands before, during or after work/classes</td>
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<tr>
<td>Need vehicle for work/study purposes</td>
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<tr>
<td>Necessity of taking children to/from school/daycare</td>
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<td>Too much to carry</td>
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<td>Need to start work early or finish late</td>
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**Barriers - Walking**
**Q17.1**

How important are each of the following reasons in explaining why you do not currently walk to or from UWA more frequently?

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<thead>
<tr>
<th>Reason</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of continuous pedestrian paths to UWA</td>
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<tr>
<td>Lack of or poor changing /showering facilities at UWA</td>
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<tr>
<td>Time involved</td>
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<td>Physical effort involved</td>
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</table>

**Barriers - active commuting not considering alternative (for non AT)**

[Display This Question](http://new.qualtrics.com/ControlPanel/?ClientAction=EditSurvey&Sect...)

Qualtrics Survey Software

31/05/2010 4:33 PM
Q18.1 How important are each of the following reasons in explaining why you do not currently walk or cycle or take public transport to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather (rain, wind or heat)</td>
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<tr>
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<tr>
<td>Access to cheap/free parking at UWA</td>
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<tr>
<td>Necessity of bringing a change of clothes</td>
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<tr>
<td>Lack of continuous cycle paths to UWA</td>
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<tr>
<td>Lack of showers, lockers or bike parking facilities at UWA</td>
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<tr>
<td>Public transport between my home and UWA is too infrequent</td>
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<tr>
<td>Lack of continuous cycle paths leading to and from UWA</td>
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<tr>
<td>Public transport route has too many connections</td>
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</tbody>
</table>

_Motivators - Public transport_
### Display This Question:

**Q19.1**

How important are each of the following factors in explaining why you are currently considering using public transport to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Potential to save money</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Cost of parking at UWA</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Improvement of health/fitness</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I do not like driving</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**Motivators - walk**

### Display This Question:

**Q20.1**

How important are each of the following factors in explaining why you are currently considering walking to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Potential to save money</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Cost of parking at UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Improvement of health/fitness</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I do not like driving</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**Motivators - cycle**
### Q21.1

**Display This Question:**
If What is the main alternative you have considered? *Cycle* is Selected

How important are each of the following factors in explaining why you are currently considering cycling to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to save money</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement of health/fitness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not like driving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Q22.1

**Display This Question:**
If What is the main alternative you have considered? *Dropped off by a friend or family member* is Selected

How important are each of the following factors in explaining why you are currently considering being dropped off at and picked up from UWA more frequently?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to save money</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not like driving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Q23.1
**Display This Question:**
If What is the main alternative you have considered? **Car pool driver or passenger** is **Selected**

How important are each of the following factors in explaining why you are currently considering carpooling to or from UWA more frequently?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to save money</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not like driving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Q24.1
**Display This Question:**
If Your main mode of travel to UWA last week was Drive car on own... **No** is **Selected**

Or Your main mode of travel to UWA last week was to be... **No** is **Selected**

Or Your main mode of travel to UWA last week was car pool driver... **No** is **Selected**

Or Your main mode of travel to UWA last week was public transport... **No** is **Selected**

Or Your main mode of travel to UWA last week was walking or cycling... **No** is **Selected**

Or What is the main alternative you have considered? **Drive car/motorcycle/scooter on my own** is **Selected**

How important are each of the following factors in encouraging you to use (or continue using) a mode of travel other than a private vehicle to or from UWA?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid the need to find parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to save money</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement of health/fitness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not like driving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to obtain parking permit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal contributions to reducing air pollution levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My friends/colleagues use this mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of parking at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to good quality shower and storage facilities at UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Confidence
**Q25.1** How confident are you that you could adopt the following modes of transport to/from UWA on a regular basis on at least some days of the week and continue doing so?

<table>
<thead>
<tr>
<th>Mode</th>
<th>Not at all confident</th>
<th>Neither confident nor not confident</th>
<th>Very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public transport</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Stage of change - walk**

**Q26.1** In relation to **walking** part or all of the journey to or from UWA, which statement best describes you:

- I do not regularly walk and do not intend to do so in the next 6 months
- I do not regularly walk but am thinking about starting to do so in the next 6 months
- I sometimes walk
- I regularly walk but have only begun to do so in the last 6 months
- I regularly walk and have been doing so regularly for more than 6 months
- Until recently I walked but have stopped doing so

**Stage of change - cycle**

**Q27.1** In relation to **cycling** part or all of the journey to or from UWA, which statement best describes you:

- I do not regularly cycle and do not intend to do so in the next 6 months
- I do not regularly cycle but am thinking about starting to do so in the next 6 months
- I sometimes cycle
- I regularly cycle but have only begun to do so in the last 6 months
- I regularly cycle and have been doing so regularly for more than 6 months
- Until recently I cycled but have stopped doing so

**Stage of change - public transport**

**Q28.1** In relation to **using public transport** for part or all of the journey to or from UWA, which statement best describes you:

- I do not regularly use public transport and do not intend to do so in the next 6 months
- I do not regularly use public transport but am thinking about starting to do so in the next 6 months
- I sometimes use public transport
- I regularly use public transport but have only begun to do so in the last 6 months
- I regularly use public transport and have been doing so regularly for more than 6 months
- Until recently I used public transport but have stopped doing so

**Norms**
### Q29.1
Please indicate how important it is for **you personally** to:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Not at all important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help reduce air and water pollution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help protect the environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help reduce green house gas emissions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have a quick commute to work/study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have a cheap commute to work/study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use public transport to travel to UWA when possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk or cycle to UWA when possible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Q29.2
Please indicate how important it is to you that **UWA** adopts policies and practices that:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Not at all important</th>
<th>Somewhat Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help reduce air and water pollution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help protect the environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce green house gas emissions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage staff and students to use public transport to travel to UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage staff and students to walk and cycle to UWA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Q29.3
To what extent do you agree or disagree with the following statement:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel a social responsibility to reduce my car use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Q29.4
How many people important to you do you think are currently trying to reduce their car use?

- None
- Some
- Many
- All
- Don't Know

**AC strategies**
### Q30.1
How likely or unlikely is it that each of the following measures will encourage you to commence (or continue) walking, cycling, car pooling or using public transport to get to or from UWA?

<table>
<thead>
<tr>
<th>Measure</th>
<th>Not at all likely</th>
<th>Undecided</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased parking fees for single occupant vehicles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Reduced parking fees for carpool drivers</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A university subsidised public transport pass providing unlimited access to all services to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Night time minibus service from campus to various key locations in surrounding suburbs (5km radius)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Improved shower/change room or locker facilities on campus</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Improved bicycle parking on campus</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Access to UWA fleet vehicles during work hours (for staff use)</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A more user-friendly cycle path system leading to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A more user-friendly pedestrian path system leading to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

### Q31.1
Currently, around 13,000 staff, students and visitors travel to UWA Crawley and Nedlands campus daily. This number will grow in coming years increasing parking demands and traffic congestion. The State Government will not permit UWA to increase the number of car parking spaces it provides. In addition, UWA is committed to showing leadership to reduce its carbon footprint.

Given these constraints, what suggestions do you have about how UWA could encourage staff and students to use alternatives to driving (e.g. public transport, walking and cycling) to access the Crawley and Nedlands campus?

(Type your suggestions in the box below)

### Q31.2
To what extent would you agree or disagree with UWA increasing parking fees in order to fund any or all of the following initiatives:

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A shuttle bus linking UWA Crawley campus with other UWA sites (e.g. UWA Sports Park, the Medical Faculty)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A bicycle loan scheme for travel around UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A subsidised public transport pass for all bus and train services to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>An after-hours minibus service from UWA to various key locations in surrounding suburbs (5km radius)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Improved cycling facilities on campus, such as showers, lockers and secure bicycle storage</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A more user-friendly cycle path system leading to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A more user-friendly pedestrian path system leading to/from UWA</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Display This Question:
If StaffYN is Equal to Y

Q31.3 To what extent would you agree or disagree with UWA increasing parking fees in order to fund any or all of the following initiatives:

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A scheme providing taxi vouchers to attend meetings off campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A scheme providing a limited number of free emergency rides home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishment of a fleet of UWA vehicles for use by staff to travel off campus during work hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q32.1 And finally a few questions about yourself.

Gender
- Male
- Female

Q32.2 Age group
- 16-20
- 21-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51-55
- 56-60
- 61 and over

Display This Question:
If StaffYN is Equal to Y

Q32.3 Which of the following best describes your job category?

Accountant/Accouting Clerk/Assistant/Officer

Display This Question:
If StaffYN is Equal to Y

Q32.4 Which Faculty or Department do you belong to?

Administration

Display This Question:
If StaffYN is Equal to Y

Q32.5 Which of the following best describes your employment loading?

Full time
Q32.6 Which course are you currently enrolled in?

Bachelor

Q32.7 What is your current enrolment load?

- Part-time
- Full-time

Q32.8 Year of study

- 1st
- 2nd
- 3rd
- 4th
- 5th plus

Q32.9 In order to assess the distribution and availability of facilities.

Please name the UWA building that you work/study in most often.

Q32.10 To help us understand how location and distance affect staff and students' transport mode, please provide the address from which you usually travel to UWA and/or the nearest intersection.

- House number (optional):
- Street (optional):
- Closest intersecting street (optional):

Q32.11 Suburb

ALEXANDER HEIGHTS

Q32.12 Do you have a 2010 UWA parking permit?

- Yes
- No, I choose not to have a parking permit
- No, I am not eligible for parking permit
Display This Question:
If How did you travel to and from UWA on each day of last week?  - Drove car on own is Greater Than or Equal to 1

Q32.13
What type of car do you usually drive to UWA?

Make (optional)

Model (optional)

Year (optional)

Display This Question:
If How did you travel to and from UWA on each day of last week?  - Drove car on own is Greater Than or Equal to 1

Q32.14
What type of fuel does this car use?

- Diesel
- LPG
- Unleaded

Q32.15
Thank you for taking the time to complete this survey!

To enter the draw to for one of 20 $50 Co-op Bookshop vouchers please enter your email address.

Note - this email address will only be used to contact you if you are a prize winner. It will be removed from your survey answers and will not be used for any other purpose.

Email address (optional):

Q92
We welcome your feedback.
Please enter additional thoughts or comments in the box below.

Q32.16
PLEASE PROCEED TO THE NEXT PAGE TO SUBMIT YOUR SURVEY

If you have any questions or comments about the study please contact
Sarah French, Survey Coordinator, Centre for the Built Environment and Health
on 6488 1315 sarah.french@uwa.edu.au
or
Matt Buckels, Transport Planner, Facilities Management
on 6488 4693 matt.buckels@uwa.edu.au