



University of Edinburgh Travel Survey 2007



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Executive Summary

Introduction

The University of Edinburgh is committed to reducing its overall impact caused by travel, adopting an Integrated Travel Policy in 2000. A key objective of the Policy is to reduce the need for single occupancy car trips. Travel Plans have been developed for a number of the University campuses and a raft of measures are in place to help and encourage staff and students to travel by sustainable modes of transport.

Staff and student travel surveys are carried out periodically to monitor travel behaviour and inform the development of the Travel Plans. Staff surveys have been carried out in 2000 and 2004, and student surveys in 2004.

Colin Buchanan, transport planning consultants, were commissioned by the University of Edinburgh to design, manage and analyse the 2007 staff and student travel survey. In recognition of the contribution that transport makes to carbon emissions and climate change, and in tandem with assessments being carried out of energy consumption and carbon emissions across the University, the survey was designed to estimate the travel to work / study Carbon Footprint.

The Travel Surveys were carried out almost entirely on-line for a period of four weeks during late March / early April 2007. The overall staff response rate is 22% comprising valid responses from 1,720 staff members out of a total number of 7,944 staff then employed by the University.

Key Findings

Since the first travel survey carried out in 2000, there has been **a mode shift toward sustainable, non-car modes of transport, and a shift away from car driver alone** (single occupancy) by both staff and students, as shown in Figure S 1.

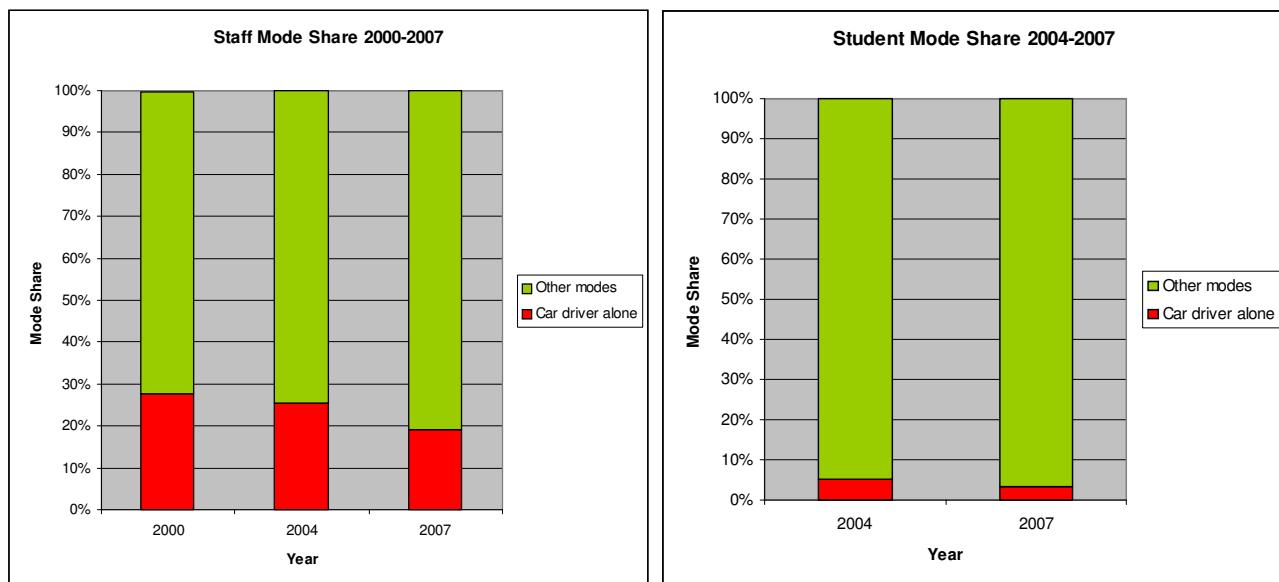


Figure S 1: Mode share for staff and students showing a decreasing car driver alone mode share

The mode share varies between the different University campuses, reflecting the proximity of sites to Edinburgh City Centre, and the varying degrees of accessibility by the different modes.

The University's **estimated annual Carbon Footprint** for travel to and from work / study is 4,689 tonnes of CO₂. Travelling to work / study by sustainable modes of transport or by car sharing produces a much lower Carbon Footprint. This is reflected in the lower average individual Carbon Footprint of students (0.07 tonnes) compared to staff (0.41 tonnes), because a significantly higher proportion of students travel by sustainable modes.

The 2007 Travel Survey indicated that of the staff and students currently travelling by car, **the vast majority are conscious of the link between CO₂ emissions from transport and climate change**, and therefore the addition of Carbon Footprint monitoring to the Travel Plan has the potential to further influence travel behaviour change.

A significant proportion of staff and students who currently drive alone to work or study, would prefer to travel by a different mode. This offers a real opportunity to further reduce the car driver alone mode share by working to offer these staff and students attractive alternatives.

There is a **distinct lack of awareness and use amongst staff and students of the raft of measures already in place to encourage sustainable travel behaviour.** There is a particularly low awareness and use of the Rideshare scheme, **recently re-launched as the Tripshare scheme**, which provides staff and students with an on-line matching service for potential car sharing partners.

However comments provided by respondents to the survey indicated that having been brought to their attention, they were impressed with the range of measures and incentives on offer.

Respondents to the Travel Surveys provided **suggestions for additional Travel Plan measures** which included measures to improve cycling infrastructure, shuttle bus provision, improved bus ticketing and services, and car parking management. Improved marketing of the Travel Plan measures was a key suggestion.

Recommendations

On the basis of a detailed analysis of the 2007 Travel Survey data, and a comparison with data from the 2000, and 2004 travel surveys, Colin Buchanan has developed recommendations for the ongoing development of the University of Edinburgh's Travel Plan.

In summary the recommendations are:

- ✓ **Ongoing development of site specific Travel Plans to tailor measures to the unique circumstances of each University site. Initial suggestions of the types of measures which could be implemented at each site are provided in the report.**
- ✓ **Improved marketing of existing Travel Plan measures through better use of the University's web pages, in particular the Transport and Parking Office website.**
- ✓ **Inclusion of a sustainable travel section in the University prospectus and provision of travel information to students on arrival at the University, and at staff induction.**
- ✓ **Communication to staff and students of the Carbon Footprint; setting of targets to reduce the Carbon Footprint; and provision of an on-line Carbon Footprint calculator.**
- ✓ **Investigation of the feasibility of recording business travel data in order to estimate the business travel Carbon Footprint. In the meantime introduce a business travel policy which favours the use of sustainable modes of transport.**
- ✓ **Undertake a pilot scheme of personalised travel marketing targeted at staff and students who are declined a permit through the new parking management scheme. The marketing would provide personalised information on modes of transport which could be used instead of the private car.**
- ✓ **Enhance the marketing of the Tripshare Scheme, with targeted marketing at campuses particularly suited to car sharing i.e. those located outside the city centre.**

These recommendations are intended as initial "concepts" upon which the University can continue to develop the site-specific Travel Plans through more detailed study and consultation with staff and students.

1. Introduction

1.1 Colin Buchanan

- 1.1.1 Colin Buchanan has been commissioned by the University of Edinburgh to design, manage and analyse the 2007 staff and student travel surveys. For the first time the surveys have been designed to provide an estimate of the Carbon Footprint for the University's staff and student travel to work and study.

1.2 Purpose of the 2007 Travel Surveys

- 1.2.1 The University of Edinburgh is committed to reducing its overall impact by travel through the adoption of an Integrated Transport Policy in 2000. In order to monitor the effects of measures put in place to encourage a reduction in the proportion of staff and students travelling by car, the University has undertaken periodic travel surveys in 2000, 2004 and now in 2007.

1.3 Integrated Travel Policy 2000

- 1.3.1 The University Court adopted an Integrated Transport Policy in 2000, with the overarching aim: *"to reduce the overall impact caused by travel – including staff and students commuting to and from University sites, business-related travel and travel by visitors and suppliers"*.
- 1.3.2 A number of objectives are set out in the policy, including the development of site specific Travel Plans, and the promotion of measures to improve access by walking, cycling, shared vehicles and public transport to and between sites, and to reduce the need for single occupancy car trips.
- 1.3.3 To date, the University has prepared Travel Plans for:
- King's Buildings
 - Central Area (George Sq, Teviot Pl, Old College, Chambers St, Infirmary St, Pleasance etc)
 - NRIE / QMRI at Little France
 - Easter Bush
- 1.3.4 The site specific Travel Plans set out targets and specific measures to be implemented in order to achieve them. The following measures have been implemented across the University sites:
- Shuttle Buses (serving various campuses)
 - Shower and locker facilities
 - Pool cars for those who need a car for business travel
 - University of Edinburgh Bus Guide and Map
 - Public transport information on the website: www.transport.ed.ac.uk
 - Interest free staff travel loan for purchase of public transport season ticket / bicycle purchase
 - Discount on One Ticket (for mixed mode public transport)
 - Bicycle User Groups at each main campus
 - Secure cycle stores in addition to Sheffield Racks
 - Bike Doctor visiting each University site every month in rotation
 - Discounts at bicycle shops
 - Bike Buddies Scheme for those who want a little support starting out
 - Free cycle training for learners / returners to cycling
 - Emergency toolkits for bikes in specific locations
- 1.3.5 The Transport and Parking Office is responsible for the development of the Travel Plans and implementation of the measures. A dedicated website providing information on the Travel Plans and all the measures that have been implemented is available at www.transport.ed.ac.uk.
- 1.3.6 A key objective of the Integrated Travel Policy is to *"endeavour to exceed appropriate modal split targets, set out in the City of Edinburgh Council's Local Transport Strategy, that are relevant to specific University sites"*.
- 1.3.7 It is essential therefore, to monitor the staff and student journey to work / study mode share.

1.4 Monitoring of the Travel Plans

- 1.4.1 Travel surveys of staff and students enable the University to monitor the effect of the Travel Plans. Travel surveys provide the data with which to identify the staff and student mode share (the proportion of staff and students travelling to work / study by each mode of transport), and provide information about travel behaviour and the factors which influence modal choice.
- 1.4.2 Travel surveys have been conducted by the University in 2000 and 2004. In 2000 a travel survey was conducted for staff only. It was designed, managed and analysed by Colin Buchanan. The University conducted the 2004 survey of staff and students, using an in-house web questionnaire.
- 1.4.3 In recognising the impact caused by travel, both on a local and world-wide scale, the University sought to collect additional information in the 2007 staff and student travel surveys which would enable the University to estimate its annual Carbon Footprint for travel to work / study.

1.5 2007 staff and student travel survey

- 1.5.1 The 2007 staff and student travel survey was designed as an entirely on-line questionnaire. The exception was a small number of paper surveys distributed to staff without access to the internet at work). Conducted during late March / early April 2007, the travel surveys provided data with which to compare with previous data from the 2000 and 2004 surveys, and to estimate the University's Carbon Footprint.

1.6 Purpose and structure of report

- 1.6.1 Chapter 2 of this report provides a summary of the key findings from the 2007 travel survey. Chapter 3 provides a detailed description of the survey and data analysis methodology. Chapters 4 and 5 provide a detailed analysis of the staff and student travel survey results. Finally, Chapter 6 presents recommendations for ongoing development of the Travel Plans.

2. Key findings

2.1 Purpose

- 2.1.1 Proceeding chapters present a detailed analysis of the data from the 2007 staff and student travel surveys. This chapter provides a summary of the key findings.

2.2 A more sustainable mode share

- 2.2.1 Comparing the 2007 mode share for staff and students combined, with the mode share from the 2000 and 2004 surveys, shows that there has been a mode shift towards non-car modes. Table 2.1 summarises the mode share for the entire University population (staff and students), and shows that 87.2% of the University population is travelling to work / study by non-car modes.

Table 2.1: 2007 Mode Share for the entire University of Edinburgh population (staff and students)

Location	Mode Share (%)								
	Foot	Bus	Car	Cycle	Rail	Shuttle bus	Motorcycle	Taxi	Total
Central Area	57.6	18.5	8.1	8.6	4.6	2.1	0.3	0.3	100
Easter Bush	3.2	22.3	61.7	3.3	0.3	7.4	1.8	0	100
KB / Royal Observatory	36.3	15.4	14.0	20.8	1.8	11.5	0.1	0.1	100
Moray House / Holyrood Rd	39.5	19.8	15.7	5.1	18.2	0	1.3	0.4	100
New College / Mylne's Ct	49.2	29.0	2.6	8.3	10	0	0	0.9	100
NRIE / QMRI, Little France	8.9	42.3	20.3	19.1	2.3	6.7	0.3	0	100
Other location	40.6	23.5	22.1	9.8	3.9	0	0	0	100
Other NHS sites	22.0	13.1	57.4	7.5	0	0	0	0	100
Pollock Halls of Residence	9.8	30.5	46.1	7.1	4.2	0	1.8	0.5	100
Summerhall	52.3	17.9	12.9	7.3	6.4	3.1	0	0	100
Western General Hospital	13.8	30.5	25.2	20	3.3	6.1	1.1	0	100
Total	46.0	19.7	12.8	11.7	4.8	4.5	0.4	0.2	100

Staff mode share since 2000

- 2.2.2 For staff, the bus now has the largest mode share at 25%, closely followed by walking at 21.3%. However bus and walking mode share is only slightly higher than recorded in 2000 travel survey. The 8.4% points reduction in car driver alone since 2000 has been achieved both through small increases in the bus and walking mode share, and significant increases in the cycle and rail mode share.
- 2.2.3 On a site specific basis, staff mode share varies considerably, reflecting the varying degrees of accessibility of individual sites, with some located outside Central Edinburgh. Easter Bush located out at Penicuik for example, has a car driver alone mode share of 62.2% and has achieved a reduction of just 0.7% since the 2000 survey. The bus and walking mode share is in decline, however there have been modest increases in the cycling, rail, motorcycling and car (multiple occupancy) mode share.
- 2.2.4 Car driver alone mode share has increased at the NRIE / QMRI, Little France, by 5.7% points since 2000. The transfer of departments from central areas to Little France since 2000 will have played a role in this, which is reflected in the significant reduction in the walking mode share by

- 16.1% points since 2000. Interestingly the increase in the car driver alone mode share has not been accompanied by an increase in the car (multiple occupancy) mode share. On a positive note, the bus mode share has increased by 7.4% since 2000.
- 2.2.5 The mode share at the Pollock Halls of Residence appears to be of concern, since the car driver alone mode share increased by 13.5% points and the bus mode share decreased by 9.1% points since the 2000 survey. Given the central location of this site it is not obvious why this mode shift may have occurred, though it should be noted that with only 35 unweighted responses to the 2007 survey, the mode share statistics will be more sensitive to statistical "white noise". On a positive note, the cycling and rail mode share has increased by just under 5% each.
- 2.2.6 New College / Mylne's Court, the King's Buildings / Royal Observatory, and Moray House / Holyrood Road have achieved the largest reductions in the car driver alone mode share. At the King's Buildings / Royal Observatory there has been a significant increase in cycling (up by 10.3% points since 2000) and the bus (up by 4.1% points since 2000). With the exception of motorcycling, all sustainable modes have seen an increase in mode share since 2000.
- 2.2.7 The Western General Hospital has seen a significant reduction in the car driver alone mode share (down by 13.2% points since 2000). Changes to parking regulations at the hospital are the likely cause of this. This has been achieved by a significant increase in the bus mode share (up by 8.5% points since 2000), and in the cycle and rail mode share.

2.3 Student mode share since 2004

- 2.3.1 For students, walking has the largest mode share at 53.9%, followed by the bus (18.0%), cycle (11.1%) and the Shuttle Bus (5.9%). The car driver alone mode share is low at 3.3%.
- 2.3.2 On a site specific basis, walking is the most popular mode at all sites apart from those located away from Central Edinburgh (NRIE / QMRI, Little France, Easter Bush, Western General Hospital and Other NHS Sites). For the student population as a whole, the walking mode share has actually declined by 8.6% points since 2004,. This is occurring across most of the sites, with the exception of Moray House / Holyrood Road, Other Locations, and the Western General Hospital where it has increased.
- 2.3.3 As for staff, the Western General Hospital has achieved a significant reduction in the car driver alone mode share (down by 33.4% points since 2004) such that the mode share is now just 2.9%. All sites have achieved modest reductions in the car driver alone mode share, apart from Summerhall and Other NHS sites where there has been a small increase.
- 2.3.4 The bus mode share has significantly increased at all locations, apart from Moray House / Holyrood Road where it has decreased slightly. The cycling mode share has also increased at all locations, with the exception of NRIE / QMRI, Little France where it has decreased slightly.

2.4 An estimate of the University's travel to work / study Carbon Footprint

- 2.4.1 The amount of carbon dioxide (CO_2) emitted by staff and students travel to work / study is related to the mode of transport they use and the distance they travel. The total amount of CO_2 emitted is referred to as the Carbon Footprint. Cycling and walking has a zero Carbon Footprint. Motorised forms of transport emit CO_2 and therefore have a Carbon Footprint, expressed in tonnes of CO_2 .
- 2.4.2 The estimated total annual Carbon Footprint (tonnes of CO_2 emitted) for University of Edinburgh staff and student travel to work / study is 4,869 tonnes, an average of 0.15 tonnes of CO_2 per individual (Table 2.2).

Table 2.2: The 2007 estimated annual Carbon Footprint for the University of Edinburgh travel to work / study

Staff / Student	Estimated annual Carbon Footprint (tonnes of CO ₂)	Estimated average annual Carbon Footprint (tonnes of CO ₂) per individual
Staff	3,236	0.41
Student	1,632	0.07
Total	4,869	0.15

- 2.4.3 Students have a much lower Carbon Footprint than staff due to the lower car mode share, and a significantly higher proportion living within 2 miles of the university. 63% of students travel by zero Carbon Footprint modes (on foot or by cycle), as opposed to 35% of staff.
- 2.4.4 The ability to travel by zero Carbon Footprint modes is related to the distance travelled. The travel survey showed that almost 80% of staff live more than 2 miles from their location of employment, and therefore there is a limit to how many staff can be encouraged to walk and cycle. However these staff can be encouraged to use public transport or car share which have a significantly lower Carbon Footprint than driving a car with no passengers.
- 2.4.5 Importantly, 4.2% of staff living within an easy walk or cycle distance of the University (less than 2 miles) are currently travelling as car drivers alone. There is significant scope to encourage these members of staff to switch to non-car modes and reduce their travel to work Carbon Footprint.
- 2.4.6 It is clear that by continuing to introduce measures to encourage staff and students to travel by non-car modes – in particular walking and cycling – the University will be able to reduce the estimated annual Carbon Footprint.

2.5 Contribution to climate change

- 2.5.1 Estimating the University's annual Carbon Footprint has the potential to form an important part of the University's Travel Plan, tapping into the conscience of the University community as a whole and the conscience of the individual to recognise their contribution to CO₂ emissions as a direct result of their travel behaviour.
- 2.5.2 In order to understand the degree to which Carbon Footprinting will influence travel behaviour change, the 2007 travel survey asked respondents about their attitude toward their travel behaviour and the contribution it makes to climate change.
- 2.5.3 Staff and students were asked to select which of the following sentences best describes their attitude to what they can personally do about their travel behaviour:
 1. I have already made changes to my own travel arrangements to reduce carbon emissions
 2. I am open to encouragement to change my travel arrangements and that's ok with me
 3. I am planning changes to my travel arrangements this year to reduce carbon emissions
 4. I am really reluctant to change my travel arrangements
 5. I believe I am doing all that I can to minimise my carbon emissions
 6. External circumstances may force changes to my travel arrangements and I would not be happy about it
- 2.5.4 The results showed that attitudes varied considerably between staff and students. For staff 43% selected "External circumstances may force changes to my travel arrangements and I would not be happy about it", however the majority of these staff are already travelling by non-car modes, with only 7% (of the 43%) travelling as car driver alone. Interestingly only 3% of students selected this as best describing their attitude.
- 2.5.5 Almost 50% of students selected "I am really reluctant to change my travel arrangements", however almost all of these students already travel by sustainable modes of transport.
- 2.5.6 Just over 70% of the staff and students who currently drive alone indicated that they are conscious of the contribution their travel behaviour makes to CO₂ emissions, by selecting attitudes 1,2,3 or 5.

- 2.5.7 The data derived from this question provides only an indication of the attitude of staff and students toward the issue of transport and climate change. It indicates that of the staff and students currently travelling by car, the vast majority are conscious of the issue and therefore the addition of Carbon Footprint monitoring to the Travel Plan has the potential to further influence travel behaviour change.

2.6 *Understanding travel behaviour*

- 2.6.1 Just less than 60% of students live less than 2 miles from the location at which they study, and 23% of staff live within 2 miles of their location of employment. Staff and students living within 2 miles of their main location are those most likely to be able to travel by non-car modes, and therefore it is important to identify the mode share within these groupings. The mode share within the student population is very positive, with just 0.9% of students using car driver alone. Within the staff population the car driver alone mode share is slightly higher at 4.2%.
- 2.6.2 Staff and students were asked why they drive to work, and for those who live less than 2 miles from University the most popular reason selected was "I have a much shorter journey time by car". Clearly, since many of these staff and students live within the city boundaries, a shorter journey time by car is likely to be more a perception of time rather than a reality (at least during the morning and evening peak). However it may be that the shorter journey time refers to the time spent in the car as opposed to walking to the bus stop, waiting for a bus, the bus journey, and then walking from the bus stop.
- 2.6.3 A significant proportion of staff using car driver alone who live within 2 miles of the University selected "I lack a suitable alternative". It is likely that the majority of these staff do have a suitable alternative, however a significant proportion also selected "I drive to other activities before / after the University day" and "I collect / drop others on route". Clearly, with these commitments, such staff would need to make a wholesale change not only to their travel behaviour to get to and from work, but to their travel behaviour for commitments outside work. Similar reasoning was provided by the students.
- 2.6.4 More than 25% of students living within 2 miles of the University and driving to University selected "I don't like public transport", and 14% of staff selected this reason. A very low proportion of staff and students (regardless of distance travelled) selected "I don't know public transport timetables".
- 2.6.5 For staff and students living more than 5 miles from their main location and who drive to work / study the most popular reason selected is "I have a much shorter journey time by car" followed by "I lack a suitable alternative". It is likely that such reasoning is understandable since the alternative is public transport which due to the distance is likely to require interchange which can increase journey times. Certainly for many interchange would at least be required in Edinburgh City Centre to access bus services to the University sites, but it is also highly likely that interchange would be necessary at the home end of their journey.

2.7 *Preferred mode of travel*

- 2.7.1 The majority of staff and students are happy with their current travel arrangements and those who are happiest are staff and students who walk or cycle to University.
- 2.7.2 There is a significant opportunity to encourage modal shift away from the car, since 40% of staff who are car driver alone and just under 60% of students who are car driver alone, stated that they would prefer to travel by a different mode. Similar proportions of these staff and students selected they would prefer to travel by car sharing, rail (using a season ticket), cycling, the bus (using a Ridacard season ticket), or walking.
- 2.7.3 If the 40% of staff who are car drivers alone who say they would prefer to travel by a different mode, did in fact switch to a different mode, the result would be a staff car mode share of 11.5% for the University as a whole (currently 19.2%).
- 2.7.4 If the 57.8% of students who are car drivers alone who say they would prefer to travel by a different mode, did in fact switch to a different mode, the result would be a student car mode share of 1% (currently 3.3%).

2.8 Awareness of existing Travel Plan measures

- 2.8.1 To encourage more staff and students to travel by alternative modes to the car, the University has introduced a raft of Travel Plan measures. The mode share data, in essence, reflects the effect of the travel plan measures. However it does not provide information on the efficacy of individual measures. In order to monitor how effective these measures are, staff and students were asked if they are aware of each measure and if they have used it.
- 2.8.2 The majority of staff and students are aware of the shuttle bus services and a large proportion are using them. In fact, 5.9% of the student population is using a shuttle bus service as a means of travelling to and from their main location of study.
- 2.8.3 Only staff can use the pool cars and are eligible for the interest free loan for a travel season ticket / bicycle. Just over 50% of staff are aware of these measures, but usage is less than 5%.
- 2.8.4 Staff and student awareness and use of measures to encourage cycling is very low, apart from awareness of cycling infrastructure i.e. shower and locker facilities and cycle parking.
- 2.8.5 The significant increase in the cycle mode share may therefore be largely attributable to infrastructure improvements, rather than the measures designed to encourage staff and students to try cycling such as free cycle training.
- 2.8.6 This is not to say that these measures do not have an important role to play, but perhaps that more needs to be done to make staff and students aware of them: infrastructure improvements are self-advertising, whereas soft measures require marketing.
- 2.8.7 A substantial proportion of the staff and student population is aware of the public transport measures, in particular the public transport information on the University website. However these measures are not particularly well used.
- 2.8.8 On the whole, awareness of the existing Travel Plan measures is very low, and usage even lower. Staff and students were invited to leave comments at the end of the questionnaire, and a common theme was that the existing measures sound like great ideas, but that they simply were not aware of them.

2.9 Awareness of the Tripshare scheme (formerly known as Rideshare)

- 2.9.1 Car sharing is effective way of reducing the number of single occupancy car trips made to and from the University, reducing congestion, and reducing the Carbon Footprint. A formal web-based car sharing scheme – Rideshare – has been available to staff and students since 2004.
- 2.9.2 Since the 2007 travel survey was completed the University has relaunched the car share scheme as Tripshare¹ which enables staff and students to search for potential car sharers from both within and outside the University.
- 2.9.3 The travel survey collected data on the level of awareness amongst staff and students of the Rideshare scheme (now Tripshare).
- 2.9.4 The travel surveys indicated there was a very low awareness of the Rideshare Scheme amongst both staff and students. More than half of the staff population and almost the entire student population were completely unaware of the scheme. Less than 3% of staff and less than 0.5% of students were members of the scheme, and the majority who were members are not active.
- 2.9.5 The lack of awareness and use of the scheme is reflected in the low car share mode share in 2007: 3.0% for staff; 0.9% for students.
- 2.9.6 There is a clear need to significantly improve staff and student awareness of the Tripshare scheme.

¹ <http://www.transport.ed.ac.uk/Tripshare/index.shtml>

2.10 Suggestions for further Travel Plan measures

2.10.1 Staff and students were invited to suggest additional measures that could be put in place as part of the Travel Plan. Suggestions focused on the following:

Cycling

- Improvements to the security of cycle parking facilities
- Covered cycle parking
- More cycle parking (comments indicated that at locations such as the King's Buildings, there are frequently no free cycle parking spaces during term time)
- Improved marketing of the measures to encourage cycling
- More showers and locker facilities
- Cycle paths within sites

Public transport

- Improved bus services to Easter Bush
- Negotiate with public transport operators outside the Edinburgh area for cheaper ticketing for staff and students
- More frequent buses and running into the evening
- Provide adequate public transport to locations outside the city centre
- Reduced rate Ridacard for mature students (currently only available to students under 26 years)

Shuttle Buses

- More frequent services at peak times
- More services along other common routes
- Services running into the evening

Parking

- Introduce parking charges
- Introduce a permit system based on need

Marketing

- Marketing of the existing measures needs to be improved (many commented that they had not known about many or all of the existing measures prior to completing the 2007 travel survey)

2.11 Location of car parking

2.11.1 Staff and students who drive a car to University were asked where they park. This is important information for the Travel Plan, as it provides an indication of the amount of parking taking place in the areas surrounding the University sites, and therefore the impact of parking associated with the University on surrounding areas, many of which are residential.

2.11.2 The majority of staff who drive to University park in a University car park. A significant proportion park in unmetered on-street parking spaces. With the exception of the Western General Hospital where on-site parking is limited, this is the case across all University sites. Parking in unmetered on-street parking spaces is most prevalent at the King's Buildings / Royal Observatory and Central Area. Just 1.9% of staff use park and ride and travel by rail or bus as their main mode.

2.11.3 The majority of students who drive to University park in unmetered on-street parking spaces, though a similarly high proportion park in a University car park. Parking in unmetered on-street parking spaces is most prevalent at the King's Buildings / Royal Observatory, and parking in a University Car Park is most prevalent at Easter Bush. Just 1.2% of students use park and ride and travel by rail or bus as their main mode.

2.12 Taking forward recommendations

2.12.1 The analysis of the 2007 Travel Survey and the key findings discussed above have been taken forward to develop recommendations for the ongoing development of the University's Travel Plan. These recommendations are presented in Chapter 6 of this report.

3. Travel survey methodology

3.1 The brief

- 3.1.1 Colin Buchanan were commissioned by the University of Edinburgh to develop an on-line travel survey capable of collecting data which will enable the ongoing monitoring of the University Travel Plan, and enable the estimation of the staff and student travel to work / study annual Carbon Footprint. The travel survey also needed to collect home postcode information to allow GIS mapping of staff and student home location. This will be used in discussion with public service bus providers for the purposes of relating transport provision and staff and student home location.

3.2 The travel survey questionnaire

- 3.2.1 A separate survey questionnaire was designed for staff and for students. The questionnaires are essentially identical, with slight differences to account for the need for slightly different wording i.e. travel to work or travel to study, and information e.g. staff number or matriculation number.
- 3.2.2 A paper version of the staff questionnaire was provided to a minority of staff (approximately 1,800) without work access to the internet. A copy of this questionnaire is provided in Appendix 1. The online versions of the survey have been provided to University of Edinburgh in electronic format.
- 3.2.3 The questionnaires were designed around the 2004 surveys to ensure consistency of data collection and to enable time series data analysis. However in order to calculate an estimate of the Carbon Footprint, it was necessary to adjust some questions to gather more detailed data.

3.3 Data capture for the Carbon Footprint calculation

- 3.3.1 In order to calculate an estimate of the University's travel to work / study Carbon Footprint it was necessary to identify the amount of carbon emitted by different modes of transport, referred to as the Carbon Conversion Factor. UK Government recognised Carbon Conversion Factors were used and these are provided in Appendix 3.
- 3.3.2 The Carbon Conversion Factors are average values expressed as kg of CO₂ per passenger mile from public transport, and otherwise expressed as kg of CO₂ per mile. The Carbon Conversion Factors refer to the CO₂ emitted by the mode of transport, they do not account for the emissions associated with the full life cycle of the mode of transport. Cycling and walking are considered to have a zero Carbon Conversion Factor.
- 3.3.3 Carbon Conversion Factors for specific car models are now provided by the Vehicle Certification Agency (VCA)². Ideally the survey would have been designed such that staff and students who drive to University would select the car model they drive from a list matching that produced by the VCA. However the VCA only collates information for new car models, with no information on car models produced before 2001.
- 3.3.4 A review of carbon footprint calculators available on the internet indicated that the vast majority do not request details of the specific car model and instead ask for the fuel type and engine size.
- 3.3.5 It was therefore concluded that average Carbon Conversion Factors for cars should be used which are based on the engine size and fuel type. This also meant that respondents to the survey were not required to recall very detailed information about their car, which could deter respondents from completing the survey.
- 3.3.6 In order to calculate the Carbon Footprint, the survey asked respondents to provide details of the entire journey to / from work or study. This ensured that multi-modal journeys were accounted for. Respondents were asked to select the modes they use on their journey and to provide the distance travelled by each. For car journeys they were also asked to provide the engine size and fuel type. For public transport they were asked whether they use a daily or a season ticket.
- 3.3.7 Details of the Carbon Footprint calculation are provided in Chapters 4 and 5, but to summarise :

$$((CCF^* \text{ of Mode A} \times \text{one-way distance} \times 2) + (CCF \text{ of Mode B} \times \text{one-way distance} \times 2) + \dots) \times \text{total number of days worked or studied per annum} = \text{Estimated Annual Carbon Footprint}$$

² <http://www.vcacarfueldata.org.uk/> * CCF = Carbon Conversion Factor

3.4 Travel survey design

- 3.4.1 The travel survey was designed, as in the 2000 and 2004 surveys, to be able to provide data for the University as a whole and for individual University sites. This provided detailed information about travel behaviour for each site which is essential for the monitoring and development of the site specific Travel Plans. To this end the surveys asked staff and students to identify their main location of work or study.
- 3.4.2 Questions included in the questionnaire captured information on:
- Staff / student category
 - Number of days per week worked / attending University
 - Main and other locations of study
 - College matriculated to (students only)
 - Main mode and other modes used
 - One way distance travelled by each mode used
 - Engine size and fuel type (if car used as a mode), type of ticket if public transport used
 - Car driver / passenger status (if car used as a mode)
 - Reason for bringing car (car drivers only)
 - Location of car parking (car drivers only)
 - Preferred mode of transport
 - Awareness of the Rideshare scheme
 - Awareness and use of existing Travel Plan measures
 - Suggestions for additional measures
 - Attitude toward climate change
 - Home postcode
 - Comments
- 3.4.3 The on-line questionnaires were designed to be self-validating. Respondents could not proceed through the questionnaire without correctly completing each question. Questions which were not relevant to a respondent e.g. questions relating to car driving if the respondent cycles to work or study, were automatically filtered out.
- 3.4.4 Respondents were able to save their partially completed questionnaire and return to it later using a username and password. It was also possible to navigate back through the questionnaire to review their responses. On submission of the questionnaire respondents could no longer review their answers.
- 3.4.5 After submitting the questionnaire the user was automatically redirected to a webpage which provided the respondent with their estimated personal annual Carbon Footprint. This webpage also provided a facility to show how by changing to a different mode or modes of transport to travel to work / study, the respondent could reduce their Carbon Footprint.
- 3.4.6 By selecting a different mode from a drop down list for each part of their journey to work, an alternative Carbon Footprint was automatically calculated. Internet links with information about Carbon Footprints and the University's Travel Plan were also included on this web page.

3.5 Consultation and pilot surveys

- 3.5.1 Draft questionnaires were developed by CB and were the subject of detailed discussions at an in-house workshop with key members of staff held at the University on 21st February 2007. At the workshop the wording and content of the questions was finalised.
- 3.5.2 A small pilot survey of the staff on-line and paper survey was conducted in the week prior to the launch of the survey on Monday 12th March 2007, and further minor improvements implemented.

3.6 Travel survey distribution

- 3.6.1 Staff and students were invited to complete the on-line survey by pan-University e-mails which included a direct hyperlink to the survey. Early completion of the survey was encouraged by a number of £100 prize draws available to both staff and students.
- 3.6.2 Links to the travel surveys were provided via the Transport and Parking Office's website www.transport.ed.ac.uk and the University's homepage www.ed.ac.uk.
- 3.6.3 Reminder e-mails were sent out to all staff and all students to maximize the response rate.
- 3.6.4 The staff and student surveys were "live" from Monday 12th March to 5th April 2007. This ensured that the survey was available to complete for two weeks prior to the end of teaching, and a total of 4 weeks prior to the Easter bank holidays.

3.7 Data validation

- 3.7.1 A large part of the data validation was undertaken by the on-line survey itself which was designed to prevent the submission of partially or incorrectly completed survey forms.
- 3.7.2 In addition CB undertook an extensive data validation exercise to ensure that the data could be used to produce a robust analysis of the University's travel to work / study behaviour.
- 3.7.3 This included the identification of the respondents' main mode of travel by cross referencing with the data on distance travelled by each mode (the main mode was identified as the mode which covered the greatest distance) and the car driver / passenger status to ascertain if a respondent was a car sharer.
- 3.7.4 The next two chapters provide detailed review of the findings for the Staff Travel Survey and Student Travel Survey respectively.

4. Staff travel survey analysis

4.1 Response Rates

- 4.1.1 Table 4.1 displays a breakdown of staff responses by main location of employment and Table 4.2 displays the overall response rate by academic/support staff and main location. The overall staff response rate is 22% comprising valid responses from 1,720 staff members out of a total number of 7,944 staff then employed by the University.
- 4.1.2 The highest response rate (39%) is from those who work at Other Locations. If this option was selected staff were requested to specify the name of the site where they work. The majority of staff who answered this question are based either at Robertson's Close or Causewayside.
- 4.1.3 The lowest response rate was from staff based at Moray House / Holyrood Road (13%), and Other NHS sites (13%). Table 4.2 indicates that 20% of academic staff and 23% of support staff returned a completed and valid survey.

Table 4.1: Overall survey response rate by main location of employment

Main location of employment	Total Number of Responses	Estimated Number of Staff	% Response
Central Area*	850	3,858	22%
Easter Bush	52	230	23%
King's Buildings / Royal Observatory	423	1,811	23%
Moray House / Holyrood Road	75	572	13%
New College / Mylne's Court	21	63	33%
NRIE / QMRI, Little France	115	581	20%
Other location	35	90	39%
Other NHS sites	10	76	13%
Pollock Halls of Residence	35	203	17%
Summerhall	28	108	26%
Western General Hospital	76	352	22%
Total	1,720	7,944	22%

*Central Area – George Square, Teviot Place, Old College, Chambers Street, Infirmary Street, Pleasance etc

Table 4.2: Overall survey response rate by academic/support staff and main location of employment

Main location of employment	Academic			Support Staff		
	Total No of Staff	Total Responses	%	Total No of Staff	Total Responses	%
Central Area	1,468	269	18%	2,390	581	24%
Easter Bush	98	24	24%	132	28	21%
King's Bldg / Royal Observatory	1,005	222	22%	806	201	25%
Moray House / Holyrood Road	207	36	17%	365	39	11%
New College / Mylne's Court	34	8	24%	29	13	45%
NRIE / QMRI, Little France	302	56	19%	279	59	21%
Other location	6	3	50%	84	32	38%
Other NHS sites	51	6	12%	25	4	16%
Pollock Halls of Residence	0	0	0%	203	35	17%
Summerhall	60	14	23%	48	14	29%
Western General Hospital	163	38	23%	189	38	20%
Total	3,394	676	20%	4,550	1,044	23%

*Central Area – George Square, Teviot Place, Old College, Chambers Street, Infirmary Street, Pleasance etc

4.2 Weighting factor

- 4.2.1 To account for the differential response rates a weighting factor has been applied to the dataset. A weighting factor for each respondent – depending on their location of employment and employment type – was calculated by dividing the total number of staff based at each employment location (split by employment type i.e. academic or support staff) by the number of respondents (by location of employment and employment type). The weighting factors used are in Table 4.3.
- 4.2.2 The weighting factors have been applied to the dataset prior to undertaking the data analysis. Therefore all data analysis in this chapter refers to the weighted data. It is important to note that all data referred to in this report is essentially an estimate based on the sample of staff who responded to the survey.

Table 4.3: Weighting factors calculated for staff main location and employment type

Main Location	Employment Type	Total No of Staff	Total No of Respondents	Weighting Factor
Other	Academic	6	3	2.00
Easter Bush	Academic	98	24	4.08
KB/Observatory	Academic	1,005	222	4.53
Summerhall	Academic	60	14	4.29
NRIE/QMRI/Little France	Academic	302	56	5.39
Western General	Academic	163	38	4.29
Other NHS Sites	Academic	51	6	8.50
Central Area	Academic	1,468	269	5.46
New College/Mylnes Ct	Academic	34	8	4.25
Moray Ho/Holyrood Rd	Academic	207	36	5.75
Pollock Halls	Support	203	35	5.80
Other	Support	84	32	2.63
Easter Bush	Support	132	28	4.71
KB/Observatory	Support	806	201	4.01
Summerhall	Support	48	14	3.43
NRIE/QMRI/Little France	Support	279	59	4.73
Western General	Support	189	38	4.97
Other NHS Sites	Support	25	4	6.25
Central Area	Support	2,390	581	4.11
New College/Mylnes Ct	Support	29	13	2.23
Moray Ho/Holyrood Rd	Support	365	39	9.36
Total		7,944	1,720	

- 4.2.3 During the data verification it became apparent that, when providing information about their main mode of travel to work, a significant minority of respondents indicated that they sometimes change their main mode.
- 4.2.4 For example a member of staff may sometimes take the bus, walk or cycle to work. This is an important and interesting piece of information which highlights the limitations of forcing respondents to identify their main mode as this is often not representative of their actual behaviour.
- 4.2.5 In recognition of these alternative modes sub-entries were made to the dataset to represent each alternative mode recorded by each respondent. The weighting factors were adjusted to account for this. For example, a number of respondents indicated that they walk, cycle or take the bus. In such cases three records were maintained for the respondent – one for each mode – and the weighting factor was adjusted by dividing the weighting factor for the individual by the number of modes i.e. three in this case. An additional 271 records were created by this exercise.

4.3 Main mode of travel to work

- 4.3.1 Staff were asked to provide details on the mode or modes of transport they usually use for their journey to work. The question was designed both to capture information for the calculation of the carbon footprint, and to capture information about the main mode of transport used. Staff were asked to provide details of the whole journey (e.g. walk, bus, walk), and to provide details of the distance covered by each mode and the time taken by each mode.
- 4.3.2 The main mode of travel to work was identified as the mode used to cover the greatest distance on the journey to work. Table 4.4 shows the main mode of travel to work by the main location of employment.

Table 4.4: Staff main mode of travel by location of employment

Location	Percentage Mode Share (%)									
	Bus	Foot	Car driver alone	Cycle	Rail	Car driver + passenger(s)	Car share	Car passenger	Motorcycle	Taxi
Central Area	27.3	25.8	13.9	10.4	10.3	6.4	2.0	2.5	1.2	0.1
Easter Bush	10.8	2.0	62.2	4.6	1.0	5.9	5.9	3.8	3.8	0.0
King's Buildings / Royal Observatory	19.8	19.3	20.1	22.9	2.6	7.5	4.3	3.2	0.2	0.1
Moray House / Holyrood Road	21.9	23.6	12.4	7.7	17.2	4.3	4.3	3.3	5.3	0.0
New College / Mylne's Court	43.4	25.7	0.0	3.5	23.8	0.0	0.0	3.5	0.0	0.0
NRIE / QMRI, Little France	33.7	7.6	26.1	15.4	2.2	5.2	5.7	3.2	0.9	0.0
Other location	28.5	21.9	21.9	7.3	0.0	8.8	0.0	11.7	0.0	0.0
Other NHS sites	13.1	22.0	42.5	7.5	0.0	11.2	0.0	3.7	0.0	0.0
Pollock Halls of Residence	33.6	12.1	34.3	6.4	5.7	5.7	1.4	0.0	0.0	0.7
Summerhall	18.0	41.0	17.5	9.3	0.0	3.2	4.0	7.1	0.0	0.0
Western General Hospital	23.3	10.5	33.4	16.9	5.9	4.0	1.4	2.6	1.9	0.0
Total	25.0	21.3	19.2	13.3	7.6	6.3	3.0	2.9	1.3	0.1

- 4.3.3 The data shows that the largest mode share is **travel by bus** at **25.0%** of the staff population.
- 4.3.4 Although for the staff population as a whole, travel by bus has the largest mode share, on a site specific basis, travel by bus only has the largest mode share at the following sites: Central Area; New College / Mylne's Court; NRIE / QMRI Little France; and Other Location.
- 4.3.5 The second highest mode share overall for staff is travel to work **on foot** at **21.3%**. On individual site basis, the highest on foot mode share is at Summerhall (41.0%) and Central Area (25.8%). The lowest on foot mode share is at Easter Bush (2.0%) and NRIE / QMRI Little France (7.6%).
- 4.3.6 **Car driver alone** (**19.2%** over all staff) has the largest mode share at: Easter Bush (62.2%); Other NHS Sites (42.5%); Pollock Halls of Residence (34.3%); and Western General Hospital (33.4%). The lowest car driver alone mode share is for New College / Mylne's Court at 0%, Moray House / Holyrood Road at 12.4% and Central Area at 13.9%.
- 4.3.7 The **cycle mode** share is **13.3%** for the entire staff population. On a site specific basis, the King's Buildings / Royal Observatory has the highest cycle mode share at 22.9%. The lowest cycle mode share is at New College / Mylne's Court (3.5%), Easter Bush (4.6%), and Pollock Halls of Residence (6.4%).

- 4.3.8 The **rail** mode share for the entire staff population is **7.6%**. On a site specific basis, the rail mode share is highest at New College / Mylne's Court (23.8%), Moray House / Holyrood Road (17.2%) and Central Area (10.3%). In all other locations the rail mode share is below 6%.
- 4.3.9 For the staff population as a whole, **3.0% car share**. The highest proportion of staff car sharing is at Easter Bush (5.9%) and NRIE / QMRI Little France (5.7%). Interestingly, although there is a high proportion of staff travelling by car to Easter Bush; Other NHS Sites, Pollock Halls of Residence and Western General Hospital, only Easter Bush has a significant car share mode share at 5.9%. No car sharing was reported at New College / Mylne's Court, Other Locations, and Other NHS Sites – primarily due to very low car use and high public transport use.
- 4.3.10 **Car passenger** has a low mode share at all sites (**2.9%**), except at Other Location (11.7%).
- 4.3.11 The **motorcycle** mode share for the entire staff population is just **1.3%**, with the highest site specific mode of 5.3% at Moray House/Holyrood Road.
- 4.3.12 Figure 4.1 shows a comparison of the 2007 mode share for the University staff population with the mode share from the 2000 and 2004 staff travel surveys. Due to slightly different labels being used for different types of car users in previous surveys, the data for modes which involved cars in multiple occupancy have been grouped as "Car (multiple occupancy)".
- 4.3.13 The findings are very encouraging with the **car driver alone mode share dropping by 8.4%** (from 27.6% to 19.2%), and car **multiple occupancy dropping by 2.7%** (from 14.9% to 12.2%).
- 4.3.14 The largest mode share **increase of 5.4% is for cycling** (from 7.9% to 13.3%). **Rail** has also seen an **increase of 3.3%** (from 4.3% to 7.6%).

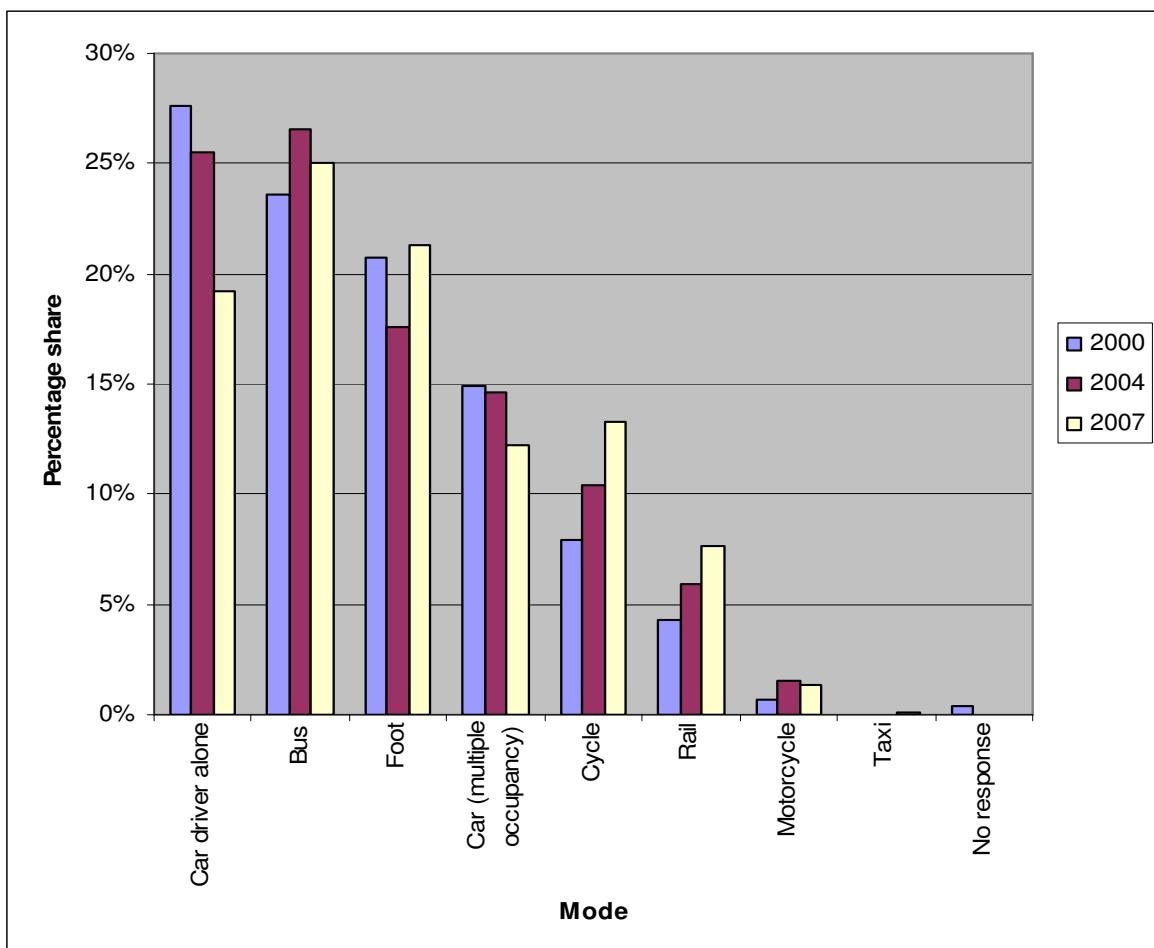


Figure 4.1: Mode share for the total University staff population from staff surveys undertaken in the year 2000, 2004 and 2007 (original data is provided in Table A 1, Appendix 2)

- 4.3.15 Table A 1 in Appendix 2 provides a comparison of the staff mode share in 2000, 2004 and 2007 for each University site. The total unweighted number of staff who responded at each site in the 2007 survey is also provided. This is a useful piece of information since the lower the number of staff who responded, the more sensitive the mode share is to significant changes.
- 4.3.16 To summarise, the data shows that New College / Mylne's Court, the King's Buildings / Royal Observatory, and Moray House / Holyrood Road have achieved the largest reductions in the car driver alone mode share. Pollock Halls of Residence appears to be a concern since the car driver alone mode share has increased by 13.5% since 2000 with the bus mode share and multiple occupancy car suffering the greatest mode share reductions. However with just 35 unweighted responses from Pollock Halls of Residence this time, the mode share will be susceptible to showing significant changes.
- 4.3.17 The King's Buildings / Royal Observatory and the NRIE / QMRI, Little France have seen the highest **increase in cycling** mode share by just **over 10%** each. At the NRIE / QMRI, Little France this has been matched by a similar reduction in the walking mode share, though this can be explained by the transfer of the Medical School from the Central Area to Little France after the first survey in 2000. **At the King's Buildings / Royal Observatory the increase in cycling is matched by a similar reduction in the car driver alone mode share.**
- 4.3.18 The most significant increases in the bus mode share have taken place at the Western General Hospital, Other NHS Sites (however there were just 10 unweighted responses from this location), NRIE / QMRI, Little France, and New College / Mylne's Court (however there were just 21 unweighted responses from this location). The most significant increases in the walking mode share have taken place at Summerhall and New College / Mylne's Court, though again there was only a small number of unweighted responses from these locations.

4.4 Car park location

- 4.4.1 Staff who stated that for their main mode of travel to work they are car driver alone, car driver with passenger(s) or they car share, were asked where they park their car. Table 4.5 shows that for the University as a whole 75.1% of staff park in a University car park, and 17.8% of staff park in an un-metered on-street parking space.
- 4.4.2 Looking at the data on an individual site basis, at least 70% of staff who drive to work park in a University car park at all sites apart from the Western General Hospital where only 6.8% of staff park in a University car park (and 61.9% of staff at Other Locations). At the Western General Hospital the majority of staff park in un-metered on-street parking spaces. Apart from at Other Locations (28.6%), the only other location with a high proportion of parking in un-metered on-street parking spaces is the King's Buildings / Royal Observatory (27.9%) – down overall from 2000.

Table 4.5: Staff location of car parking

Location	a University Car Park	an on-street parking space (free)	a Commercial Car Park	No response	an on-street parking space (metered)	Total
Central Area	701	105	12	38	2	859
Easter Bush	170	0	0	0	0	170
King's Buildings / Royal Observatory	400	161	0	13	4	578
Moray House / Holyrood Road	101	9	0	9	0	120
NRIE / QMRI, Little France	151	15	40	9	0	215
Other location	17	8	3	0	0	28
Other NHS sites	35	0	6	0	0	41
Pollock Halls of Residence	84	0	0	0	0	84
Summerhall	27	0	0	0	0	27
Western General Hospital	9	105	14	4	4	137
Total	1,695	403	75	74	10	2,258

4.5 Reason for driving to University

- 4.5.1 Staff who stated that their main mode of travel to work is car driver alone, car driver with passenger(s) or car share were asked to select from a list their reasons for driving to work. Staff could select as many reasons they felt were applicable.
- 4.5.2 Table 4.6 shows the proportion of staff who selected each reason, split by the distance that they travel to work. The most popular reason selected by 61.7% of staff who drive to work is "I have a much shorter journey time by car". This was a popular reason regardless of distance travelled, though proportionally more staff who live between 2 and 5 miles of work selected this reason.
- 4.5.3 A high proportion of staff selected "I lack a suitable alternative" (42.0%), and proportionally more staff who live more than 5 miles from work selected this reason.
- 4.5.4 Concerns about personal security, the need to move equipment from site to site, or a mobility impairment / disability were the reasons least frequently selected. Just 0.4% of drivers selected "I don't know public transport timetables". However a substantial proportion of staff who drive selected "I don't like public transport".
- 4.5.5 A significant proportion of staff believe the car is the cheapest option (20.9%), and proportionally more staff who live more than 2 miles from work selected this reason.

Table 4.6: Staff reasons for driving to work

Reasons	Less than 2 miles	Over 2 / less than 5 miles	More than 5 miles	Total*
I have a much shorter journey time by car	43.4%	69.6%	59.4%	61.7%
I lack a suitable alternative	35.9%	24.3%	51.1%	42.0%
I drive to other activities (eg study / leisure) before / after University day	29.4%	36.1%	31.1%	32.6%
I collect / drop others on route	24.0%	35.1%	27.7%	29.8%
I have carer responsibilities	29.1%	28.8%	24.6%	26.1%
I need to go on to other University site(s)	24.3%	25.7%	21.4%	22.9%
I believe the car is cheapest option	3.5%	21.7%	21.9%	20.9%
I need to travel elsewhere on University business	12.0%	20.2%	13.1%	15.2%
I don't like public transport	13.7%	17.8%	10.7%	13.0%
I am concerned about my personal safety	9.8%	10.1%	9.7%	9.9%
I move equipment from site to site	3.4%	10.5%	8.3%	8.7%
I have a mobility impairment / disability	7.0%	4.5%	3.5%	4.0%
I don't know public transport timetables	0.0%	0.0%	0.6%	0.4%

N.B: staff were able to select as many reasons for driving to work as applicable

* Total as a percentage of the total number of staff whose main mode is car driver alone, car driver with passenger(s) or car share. Therefore this column does not add up to 100%.

- 4.5.6 No staff respondents whose main mode is car driver said they park at a bus station, train station or at a park and ride. However staff do park at these locations but their main mode (the mode covering the greatest distance of the journey) is a different mode – bus or rail. Table 4.7 shows that the proportion of the entire staff population who do this is very small at just 1.9%.

Table 4.7: Staff whose main mode is rail or bus who drive as part of their journey to work and park at a bus station, rail station or park and ride

Main mode	Weighted Count	%*
Bus	19	0.2%
Rail	133	1.7%
Total	152	1.9%

* as a percentage of the total staff population (7,944)

4.6 **Distance travelled**

- 4.6.1 Staff were asked to provide the distance travelled by each mode they use on their journey to work. Each individual distance has been added together to provide an overall distance travelled per member of staff.
- 4.6.2 Table 4.8 shows the distance travelled by staff to work. It shows that 22.9% of staff travel less than 2 miles to work, and just over 60% of staff travel less than 5 miles.

Table 4.8: Distance travelled to work

Distance	Weighted count	Percentage
Under 2 miles	1,823	22.9%
2 miles or over, but under 5 miles	3,072	38.7%
5 miles or over, but under 10 miles	1,241	15.6%
10 miles or over, but under 15 miles	527	6.6%
15 miles or over, but under 25 miles	568	7.1%
25 miles or over, but under 50 miles	551	6.9%
50 miles or over	162	2.0%
Total	7,944	100%

- 4.6.3 Of the 1,823 staff who live within two miles of the University, it is interesting to analyse what their main mode of travel to work is as they are in an ideal position to walk or cycle to work, and are more likely to live close to a direct bus route to work. Table 4.9 shows that 80.8% of staff living within two miles of work walk or cycle and 10.7% travel by bus. Only a small proportion of staff living within two miles of their workplace are car driver alone (4.2%).

Table 4.9: Mode share for staff living within two miles of the University

Mode	Weighted Count	Mode Share
Foot	1,208	66.3%
Cycle	264	14.5%
Bus	196	10.7%
car driver alone	76	4.2%
car driver with passenger(s)	26	1.4%
Rail	19	1.1%
car share	14	0.8%
car passenger	12	0.7%
Motorcycle	7	0.4%
Total	1,823	100.0%

- 4.6.4 Table 4.10 shows the average distance travelled to work by location of employment. It shows that the average distance travelled to work by staff for the University as a whole was 7.1 miles in 2007.
- 4.6.5 The highest average distance travelled to work is by staff based at New College / Mylne's Court (13.2 miles). Interestingly, although the average distance travelled is highest, New College / Mylne's Court has no car driver alone and no car driver with passenger(s) trips reported. This demonstrates that when the absence of parking at this location is coupled with a reasonable location for access by public transport, that staff are able to use public transport even when travelling nearly double the average distance.
- 4.6.6 Easter Bush has the second highest average distance travelled to work (10.2 miles), which is expected given its remote location to central Edinburgh. However, unlike New College / Mylne's Court, Easter Bush has a 62.2% car driver alone mode share. This reflects the inability for many staff to walk or cycle due to distance, and that public transport availability is currently much less favourable than at more centrally located sites. This presents a major challenge to the University.

Table 4.10: Staff average distance travelled to work by location of employment

Location	Weighted count	Weighted distance (miles)	Ave distance (miles)
Central Area	3,858	27,254	7.1
Easter Bush	230	2,345	10.2
King's Buildings / Royal Observatory	1,811	10,679	5.9
Moray House / Holyrood Road	572	4,185	7.3
New College / Mylne's Court	63	833	13.2
NRIE / QMRI, Little France	581	4,937	8.5
Other location	90	589	6.5
Other NHS sites	76	297	3.9
Pollock Halls of Residence	203	1,563	7.7
Summerhall	108	499	4.6
Western General Hospital	352	3,584	10.2
Total	7,944	56,765	7.1

4.7 Preferred mode of travel

- 4.7.1 Table 4.11 indicates that majority of staff (71.9%) are happy with their current travel arrangements.
- 4.7.2 Respondents were requested to select one preference only, and in the on-line survey it was impossible to select more than one preference. However, in the paper survey some staff ticked more than one preference, and therefore these staff had to be assigned to "Multiple choice (paper version)". The analysis of the data shows that 13 staff respondents were assigned to this which is equivalent to 61 members of staff (1% of the total staff population).

Table 4.11: Preferred mode of travel

Mode	Weighted count	Percentage
Walk/run	574	7.2%
Cycle	517	6.5%
Bus, using a Ridacard / Season ticket	336	4.2%
Rail, using Season ticket	254	3.2%
Car, sharing with others	213	2.7%
Car, drive alone	168	2.1%
Multiple choice (paper version)	61	0.8%
Bus, buying ticket each day	49	0.6%
Rail, buying ticket each day	40	0.5%
Motorbike	19	0.2%
I am happy with my current travel arrangements	5,712	71.9%
Total	7,944	100.0%

- 4.7.3 In order to understand the possible effect on mode share if staff were encouraged to switch to their preferred mode, the data has been analysed against the existing staff mode share (Appendix 2).
- 4.7.4 The highest proportion of staff who are happy with their existing mode are those who cycle (93.5%), or walk (90.5%).
- 4.7.5 40% of car drivers alone did not select that they are happy with their current travel arrangements: 9.6% selected that they would prefer travel by rail using a season ticket; 8.3% said they would prefer to cycle; 8.3% said they would prefer to use the bus with a Lothian Ridacard / season ticket; 7.1% said they would prefer to walk / run; and 5.2% said they would prefer to car share.
- 4.7.6 If the staff who are currently car driver alone were able to use their preferred mode, there would be a 40% reduction in the existing car driver alone mode share, resulting in a staff car mode share of just 11.5% for the University as a whole.**

4.8 University Rideshare Scheme

- 4.8.1 Table 4.12 indicates that less than half of the staff population were aware of the University's Rideshare scheme. Just under 3% of staff are a member of the scheme, but only 0.4% were then active members. Over a third of all staff who are aware of the scheme said they did not wish to join it; but 7% of staff are aware of the scheme and would consider joining it. It has since been re-launched with the regional transport agency (SEStran) support as Edinburgh Tripshare.

Table 4.12: Awareness of Rideshare Scheme

Awareness	Weighted count	Percentage
Yes, and I am a member of the scheme	30	0.4%
Yes, I am a member of the scheme, but not active	192	2.4%
Yes, but I do not wish to join the scheme	3,045	38.3%
Yes, I may consider joining the scheme	556	7.0%
No, I have not heard of the scheme	4,106	51.7%
No answer	14	0.2%
Total	7,944	100.0%

4.9 Staff awareness of current travel plan measures

- 4.9.1 The University of Edinburgh offer a range of measures to promote sustainable transport options. Staff were asked if they are aware of these measures, and if so, whether they had made use of them. Table 4.13 displays current staff awareness and usage of travel plan measures.

Table 4.13: Staff usage and awareness of specific measures

Measure	Percentage Aware of	Percentage Aware of & make use of	Total Percentage aware of
Shuttle Buses (serving various campuses)	46%	39%	85%
Shower and locker facilities	43%	11%	54%
Pool Cars for those who need a car for business travel	48%	5%	53%
Interest free Staff Loan for season ticket / bicycle purchase	48%	3%	51%
Public transport information on web: www.transport.ed.ac.uk	34%	16%	50%
Bicycle User Groups at each main campus	35%	4%	38%
Secure cycle stores in addition to Sheffield Racks	31%	6%	37%
University of Edinburgh Bus Guide and Map	24%	9%	34%
Bike Doctor visiting each University site monthly in rotation	29%	3%	32%
Discounts at bicycle shops	27%	2%	29%
Bike Buddies Scheme for those seeking support starting out	25%	0%	25%
Discount on One Ticket (for mixed mode public transport)	17%	1%	18%
Free cycle training for learners / returners to cycling	17%	0%	17%
Emergency toolkits for bikes in specific locations	15%	1%	16%

- 4.9.2 Staff are mostly aware of the shuttle bus services with 85% of staff aware of this measure and 39% using it. Awareness of pool cars (53%) and the interest free loan for a travel season ticket / bicycle (51%) are also high, however use of these measures is low at 5% and 3% respectively.
- 4.9.3 On the whole, awareness of measures to encourage cycling is low, although 54% of staff are aware of, and 11% make use of, shower and locker facilities, and 37% of staff are aware of, and 6% make use of, secure cycle storage in addition to Sheffield Racks. There is a lack of awareness and use of the emergency toolkits and free cycle training. Awareness of Bicycle User Groups, Bike Buddies Scheme, Bike Doctor and discounts at bicycle shops is higher but use similarly low.
- 4.9.4 Awareness of the public transport information on the University website is high at 50%, though staff are less aware of the University of Edinburgh Bus Guide and Map first published in 2006, with just 34% aware of it and 9% using it.

4.10 Contribution to climate change

- 4.10.1 Staff were asked to select a statement which best describes their attitude to what they personally can do about their travel behaviour to reduce their carbon emissions.
- 4.10.2 Table 4.14 indicates that 5% of staff have already made a change to their current travel arrangements compared to 21% of students. However the majority of staff (43%) would be unhappy if external circumstances forced a change in current travel arrangements. This is significantly higher than the student attitude to this contribution.

Table 4.14: Staff attitude to climate change

Contribution	%*
External circumstances may force changes to my arrangements and I would not be happy about it	43%
I am open to encouragement to change my travel arrangements and that's OK with me	10%
I am planning changes to my travel arrangements this year to reduce carbon emissions	17%
I am really reluctant to change my travel arrangements	4%
I believe that I am already doing all that I can to minimise my carbon emissions	19%
I have already made changes to my own travel arrangements to reduce carbon emissions	5%
No answer (paper respondents only)	2%
Total	100%

* Staff could select only one statement

- 4.10.3 Table 4.15 shows the proportion of staff who selected “External circumstances may force changes to my arrangements and I would not be happy about it” ranked by existing main mode of travel. It shows that 32% of staff who are reluctant to change mode, currently travel on foot, 24% by bus and 19% cycle. Just 7% currently travel as car driver alone.

Table 4.15: Proportion of staff who selected “External circumstances may force changes to my arrangements and I would not be happy about it” by their main mode of travel

Main Mode	Weighted Count	Percentage
Foot	1,103	32%
Bus	829	24%
Cycle	643	19%
Rail	360	11%
Car driver alone	250	7%
Car driver with passenger(s)	100	3%
Car share	43	1%
Car passenger	41	1%
Motorcycle	24	1%
Taxi	1	0%
Total	3,395	100%

- 4.10.4 Table 4.16 shows the attitude of staff car driver alone towards climate change. It shows that almost a third are planning changes to travel arrangements this year to reduce carbon emissions, and fifth are open to encouragement to change travel arrangements. This is very encouraging.

Table 4.16: Staff (car driver alone) attitude towards climate change

Contribution	%
I am planning changes to my travel arrangements this year to reduce carbon emissions	28.0%
I am open to encouragement to change my travel arrangements and that's OK with me	21.3%
External circumstances may force changes to my arrangements and I would not be happy about it	16.4%
I believe that I am already doing all that I can to minimise my carbon emissions	14.9%
I am really reluctant to change my travel arrangements	11.3%
I have already made changes to my own travel arrangements to reduce carbon emissions	8.0%
No answer (paper respondents only)	0.2%
Total	100%

4.11 Further Measures

- 4.11.1 Staff were invited to indicate further measures that the University could put in place to encourage more staff to leave their car at home. 44% of respondents answered this question.
- 4.11.2 Of the staff who answered this question, 22% felt that more could be done to **increase public transport provision**. Comments included:
- 'Speak to, and put into place, deals with transport providers out with Edinburgh. Those of us who commute from out with the city find it awkward, lengthy and expensive to travel in by public transport every day. Why else would I drive if I didn't need to?'
 - 'More frequent buses, and better signage at bus stops on the time to wait for the next bus. Keeping public buses to their planned schedule, and in particular not being early.'
 - 'Encourage bus companies to maintain services till later in the evening. I regularly work after 6/7pm and have found that bus services are not available at times to suit me, which is one reason I continue to bring my car to work. I do sometimes take the bus part way to work in the a.m., and walk the rest.'
 - 'Consider the bus routes to KB and petition Lothian Buses e.g. the park and ride service from Riccarton only goes to the centre of town. It is not realistic to expect people from out of town to travel to the centre of town and then get a bus to KB. This would change my journey from a 30 minute journey to a 70 minute journey.'
- 4.11.3 21% of respondents who answered this question indicated that more could be done to **improve cycling facilities**.
- 'The facilities for bike parking at KB, although they have improved recently, are extremely poor for a University that claims to promote cycling. Come and take a look during term time - all the racks and spaces are full up. This is a massive discouragement'
 - 'More secure bicycle storage and actually FINISH building the ones that are being built. Lobby with the council for improving traffic situations in favour of bikes. Each building should have at least a bicycle repair kit and a pump.'
 - 'I don't think there are enough showering facilities for cyclists or joggers to make use of if they chose to use these modes to travel to work. There are some available in buildings but it isn't easily accessible for all.'
 - 'Although I have used the new cycle store by JCMB it is not clear that it is secure (is it ever locked and who has keys?). Also it is not possible to cycle directly to it. Cycle paths at KB would help -- my journey takes longer than it should.'
- 4.11.4 18% of respondents who answered this question indicated that the number of **parking spaces** should be reduced at University locations and / or **increase parking charges**.
- 'I think the issue is the absence of sufficient disincentives, rather than insufficient incentives. As a starting point, staff should be charged for parking on University premises at the same rate they would pay in a commercial car park, car parking spaces on campus should be reduced.'
 - 'Charge more for parking, not popular but effective – especially for any who live in a 2 mile radius??'
 - 'Removing ALL our car parks!'
 - 'Park and Ride scheme somewhere out of town? Bus provided by UoE!!!! for UoE staff!!!!'
- 4.11.5 11% of respondents who answered this question indicated that more could be done to improve the **shuttle bus service**.
- 'More diverse shuttle buses - for example, to the Easter Bush, Little France and the Western General.'
 - 'It is appalling that there is no shuttle bus for staff and students at Easter Bush. For many a car is the only alternative.'
 - 'More frequent shuttle buses that operate till later in the evening (e.g. till 7pm). '
 - 'Not getting rid of the GS to KB bus!'

4.12 Staff Carbon Footprint

4.12.1 Staff were asked to provide detailed information about the modes that they use on their normal journey to work, the distance they travel by each mode, and, if they travel by car, what size of engine the car has and what type of fuel it uses.

4.12.2 The annual carbon footprint for each respondent could then be estimated using the Carbon Conversion Factors (CCF) provided in

4.12.3 Table A 5, Appendix 4.

4.12.4 To calculate the daily Carbon Footprint (CF) the following calculation was used:

$$(CCF \text{ of Mode a} \times \text{distance} \times 2) + (CCF \text{ of Mode b} \times \text{distance} \times 2) \times \dots = \text{Daily CF}$$

4.12.5 In instances where respondents stated that they are a car passenger or a car driver they were asked to state how many other people travel in the car with them. The CCF for the car type they specified was then divided by the number of people in the car, before calculating the daily CF.

4.12.6 To calculate the annual CF the following calculation was carried out:

$$\text{Daily CF} \times \text{number of days per week at work} \times 47^* = \text{Annual CF}$$

*Total number of weeks per year staff work, assuming 5 weeks annual leave

4.12.7 In order to calculate the overall CF for staff travel to work at the University, the annual CF for each respondent was factored (as has been carried out for the entire data analysis).

4.12.8 Table 4.17 shows the CF for staff by each mode, and shows that the University of Edinburgh's annual staff travel to work CF is estimated to be 3,236.3 tonnes. It also shows that the estimated average Carbon Footprint for staff travel to work is 0.41 tonnes.

Table 4.17: Staff travel to work Carbon Footprint

Mode	Weighted Count	Average Distance (miles)	Annual Estimated Total CO ₂ (Tonnes)	Annual average estimated total CO ₂ (Tonnes) per staff member
Car driver alone	1,523	11.0	2,240.8	1.47
Car share	239	11.9	145.8	0.61
Car driver with passenger(s)	498	9.5	262.0	0.53
Rail	607	21.7	250.5	0.41
Car passenger	232	7.5	94.4	0.41
Motorcycle	103	11.2	12.5	0.12
Bus	1,990	5.5	229.6	0.12
Taxi	6	2.9	0.6	0.11
Cycle	1,058	3.0	0.0	0.00
Foot	1,689	1.4	0.0	0.00
Total	7,944	7.1	3,236.3	0.41

4.12.9 Table 4.18 shows the CF for staff by the location of employment. It shows that the Central Area makes the highest contribution to the University's CF at 1,358.3 tonnes, however the average staff CF is one of the lowest at 0.35 tonnes.

4.12.10 It is not surprising that with a car driver alone mode share of just over 60%, Easter Bush has the highest average staff CF at 1.08 tonnes. This is 54% higher than the next highest average staff CF of 0.71 for Pollock Halls of Residence and the Western General Hospital.

4.12.11 New College / Mylne's Court makes the lowest contribution to the University's CF, and has the lowest average staff CF.

Table 4.18: Staff travel to work annual Carbon Footprint by location of employment

Location	Weighted Count	Average Distance (miles)	Annual Estimated Total CO₂ (tonnes)	Annual average estimated total CO₂ (tonnes) / staff member
Central Area	3,858	7.1	1358.3	0.35
Easter Bush	230	10.2	248.4	1.08
King's Buildings / Royal Observatory	1,811	5.9	627.0	0.35
Moray House / Holyrood Road	572	7.3	169.9	0.30
New College / Mylne's Court	63	13.2	10.2	0.16
NRIE / QMRI, Little France	581	8.5	359.7	0.62
Other location	90	6.5	28.9	0.32
Other NHS sites	76	3.9	18.4	0.24
Pollock Halls of Residence	203	7.7	141.9	0.70
Summerhall	108	4.6	26.6	0.25
Western General Hospital	352	10.2	246.9	0.70
Total	7,944	7.1	3,236.3	0.41

5. Student travel survey results

5.1 Response rates

- 5.1.1 Table 5.1 displays a breakdown of student responses by study location and Table 5.2 Table 5.2 indicates the overall response rates by undergraduate/postgraduate and study location. The overall student response rate was 14%.
- 5.1.2 The highest number of returns are from students studying at King's Buildings / Royal Observatory. Results show that there is no substantial difference in response rates from the different locations.

Table 5.1: Overall survey response rate by study location

Study location	Total Responses	Estimated Total Student Population	% Responses
Central Area*	1,892	14,713	13%
Easter Bush	95	625	15%
King's Buildings / Royal Observatory	1,000	5,598	18%
Moray House / Holyrood Road	227	1,774	13%
New College / Mylne's Court	57	446	13%
NRIE / QMRI, Little France	162	1,080	15%
Other location	18	119	15%
Other NHS sites	11	73	15%
Summerhall	46	309	15%
Western General Hospital	40	271	15%
Total	3,548	25,008**	14%

* Central Area – George Sq, Teviot Pl, Old College, Chambers St, Infirmary St, Pleasance etc

** This is the actual total number of students matriculated in 2007. Information on the total number of students based at each location is not held by the University. All figures for each location are estimates based on responses received from students based at each location.

Table 5.2: Overall response rate by undergraduate/postgraduate and study location

Study location	Undergraduate			Postgraduate		
	Est'd Total Student Population	Total Responses	%age	Est'd Total Student Population	Total Responses	%age
Central Area*	11,280	1,358	12%	3,433	534	16%
Easter Bush	430	66	15%	195	29	15%
King's Buildings/Royal Observatory	4,183	712	17%	1,415	288	20%
Moray House / Holyrood Road	1,044	117	11%	730	110	15%
New College / Mylne's Court	259	29	11%	187	28	15%
NRIE / QMRI, Little France	769	118	15%	310	44	14%
Other locations	48	6	12%	71	12	17%
Other NHS sites	33	5	15%	40	6	15%
Summerhall	209	32	15%	99	14	14%
Western General Hospital	122	19	16%	149	21	14%
Total	18,378**	2,462	13%	6,630**	1,086	16%

* Central Area – George Square, Teviot Place, Old College, Chambers Street, Infirmary Street, Pleasance etc

** This is the actual total number of students matriculated in 2007. Information on the total number of students based at each location is not held by the University. All figures for each location are estimates, based on the responses received from students based at each location.

5.2 Weighting factor

- 5.2.1 To account for the differential response rates a weighting factor has been applied to the dataset. A weighting factor for each respondent depending on the College to which they are matriculated, and whether they are undergraduate or postgraduate, was calculated by dividing the total number of students based at each location (split by College and student status) by the number of respondents. Data on the total number of postgraduates and undergraduates split by College, was provided by the University of Edinburgh. Weighting factors used are provided in Table 5.3.
- 5.2.2 The weighting factors have been applied to the dataset prior to undertaking the data analysis. Therefore all data analysis in this chapter refers to the factored data. It is important to note that all data referred to in this report is essentially an estimate based on the sample of students who responded to the survey.

Table 5.3: Weighting factor calculated for students (by College in which they matriculated & course level)

College	Course Level	Total Number of Students	Total Number of Respondents	Weighting Factor
Medicine & Veterinary Medicine	Postgraduate	1,030	145	7.103448
Medicine & Veterinary Medicine	Undergraduate	2,066	316	6.537975
Science & Engineering	Postgraduate	1,851	379	4.883905
Science & Engineering	Undergraduate	5,364	919	5.836779
Humanities & Social Science	Postgraduate	3,749	562	6.670818
Humanities & Social Science	Undergraduate	10,948	1227	8.922575
Total		25,008	3,548	

- 5.2.3 During the data verification it became apparent that a significant minority of respondents when providing information about their main mode of travel to University indicated that they alternate their mode. For example a student may sometimes take the bus, walk or cycle to work. This is an important and interesting piece of information highlighting the limitations of forcing respondents to identify their main mode as this is often not representative of their actual behaviour.
- 5.2.4 In recognition of these alternative modes, sub-entries were made to the dataset to represent each alternative mode recorded by each respondent. The weighting factors were adjusted to account for this. For example, a number of respondents indicated that they walk, cycle or take the bus. In such cases 3 records were maintained for the respondent – one for each mode – and the weighting factor was adjusted by dividing the weighting factor for the individual by the number of modes i.e. 3 in this case. An additional 871 records were created by this exercise.

5.3 Main mode of travel to University

- 5.3.1 Students were asked to provide details on the mode or modes of transport they usually use to travel to and from University. The question was designed both to capture information for the calculation of the carbon footprint, and to capture information about the main mode of transport used. Students were asked to provide details of the whole journey (e.g. walk, bus, walk), and to provide details of the distance covered by each mode and the time taken by each mode.
- 5.3.2 The main mode of travel to study was identified as the mode used to cover the greatest distance. Table 5.4 shows the main mode by location of study.
- 5.3.3 The data shows that for the University as a whole **53.9% of students walk, 18.0% use the bus and 11.1% cycle**. The **car mode share is 6.9%**. (car driver alone, car driver with passengers, car passenger and car share)
- 5.3.4 Walking is the most popular mode for students in all but four University sites which are located away from central Edinburgh; Easter Bush where bus (26.6%) is the most common mode used; NRIE / QMRI, Little France where bus (46.9%) is the most common mode used; Other NHS sites where car driver alone (26.4%) is the most common mode used; and the Western General Hospital where bus (39.9%) is the most common mode used.

- 5.3.5 The bus mode share is relatively high at all locations, with the highest mode share at NRIE / QMRI, Little France and the Western General Hospital. The lowest bus mode share is at the King's Buildings / Royal Observatory (14.0%).
- 5.3.6 The cycling mode share is highest at the Western General Hospital at 23.9%. It is also high at NRIE / QMRI, Little France (21.1%) and the King's Buildings / Royal Observatory (20.1%). The lowest cycle mode share is at Easter Bush (2.9%), though this is not surprising given the distance of the campus from central Edinburgh.
- 5.3.7 High shuttle bus mode share reflects the locations which are served by a shuttle bus service (Central Area, King's Buildings, Summerhall, Easter Bush, Western General and NRIE / QMRI, Little France), with the Western General Hospital (14.0%), King's Buildings / Royal Observatory (15.3%) and NRIE / QMRI, Little France (10.4%) having the highest mode share.
- 5.3.8 The rail mode share is very low at all locations with the exception of Moray House / Holyrood Road which has a mode share of 18.5%. This is likely to be due to the proximity of the location to Waverley train station, and that there is a higher proportion of students who live outside Edinburgh studying at this location.
- 5.3.9 Car driver alone has the highest mode share at Other NHS Sites (25.3%) and Easter Bush (16.1%). At all other locations the mode share is between 0% and 6.7%. The Western General Hospital recorded no car driver alone mode share. Car driver with passenger(s) has the highest mode share at Easter Bush (12.6%) and is also high at Other NHS Sites (9%). The Western General Hospital, Summerhall, Other Locations and New College / Mylne's Court have none recorded.
- 5.3.10 Students who selected "Car driver" or "Car passenger" as a mode were then asked about their driver / passenger status in order to identify if they car share i.e. share responsibility for driving. The mode share for car share was highest at Other NHS Sites (9.7%) and Easter Bush (9.0%). No car sharing was recorded at Other Locations and Summerhall.

Table 5.4: Students main mode of travel by location of study

Location	Mode Share Percentage (%)											Total
	Foot	Bus	Cycle	Shuttle Bus	Rail	Car driver alone	Car passenger	Car driver with passenger(s)	Car Share	Taxi	Motorcycle	
Central Area*	65.9	16.2	8.1	2.7	3.1	1.9	0.8	0.6	0.5	0.3	0.0	100
Easter Bush	3.6	26.6	2.9	10.1	0.0	17.2	17.6	12.1	9.0	0.0	1.0	100
King's Buildings / Observatory	41.8	14.0	20.1	15.3	1.6	3.4	1.4	1.2	1.1	0.1	0.1	100
Moray House / Holyrood Rd	44.6	19.2	4.3	0.0	18.5	8.1	2.5	1.8	0.6	0.5	0.0	100
New College / Mylne's Court	52.5	27.0	9.0	0.0	8.0	1.5	1.0	0.0	0.0	1.0	0.0	100
NRIE / QMRI, Little France	9.7	46.9	21.1	10.4	2.3	4.7	1.3	2.7	0.8	0.0	0.0	100
Other location	54.7	19.7	11.7	0.0	6.9	6.9	0.0	0.0	0.0	0.0	0.0	100
Other NHS sites	3.2	21.9	8.9	0.0	0.0	26.4	13.4	9.7	9.7	0.0	6.7	100
Summerhall	56.3	17.9	6.6	4.2	8.7	3.2	1.1	0.0	2.1	0.0	0.0	100
Western General Hospital	18.1	39.9	23.9	14.0	0.0	2.9	1.2	0.0	0.0	0.0	0.0	100
Total	53.9	18.0	11.1	5.9	3.8	3.3	1.5	1.2	0.9	0.3	0.1	100

* Central Area: George Square, Teviot Place, Old College, Chambers St, Infirmary St, Pleasance etc

- 5.3.11 Figure 5.1 shows a comparison of the 2007 mode share for the University student population with the mode share from the 2004 student travel survey. Due to slightly different labels being used for different types of car users in previous surveys, the data for modes which involved cars in multiple occupancy have been grouped as "Car (multiple occupancy)".
- 5.3.12 The data is encouraging with the car driver alone mode share dropping by 1.8% (from 5.10% to 3.3%), and car multiple occupancy dropping by 0.3% (from 3.9% to 3.6%). The largest mode share increase of 8.0% is for bus (from 15.9% to 23.9%), and cycling has increased by 1.9% (from 9.20% to 11.1%). The walking mode share has decreased by 8.6% which may be attributable to the complete or partial transfer of some departments out of the more central locations e.g. the medical school, and Dick Vet School. There has however been a net increase in the sustainable mode share by 3.10%, with more students travelling by bus.

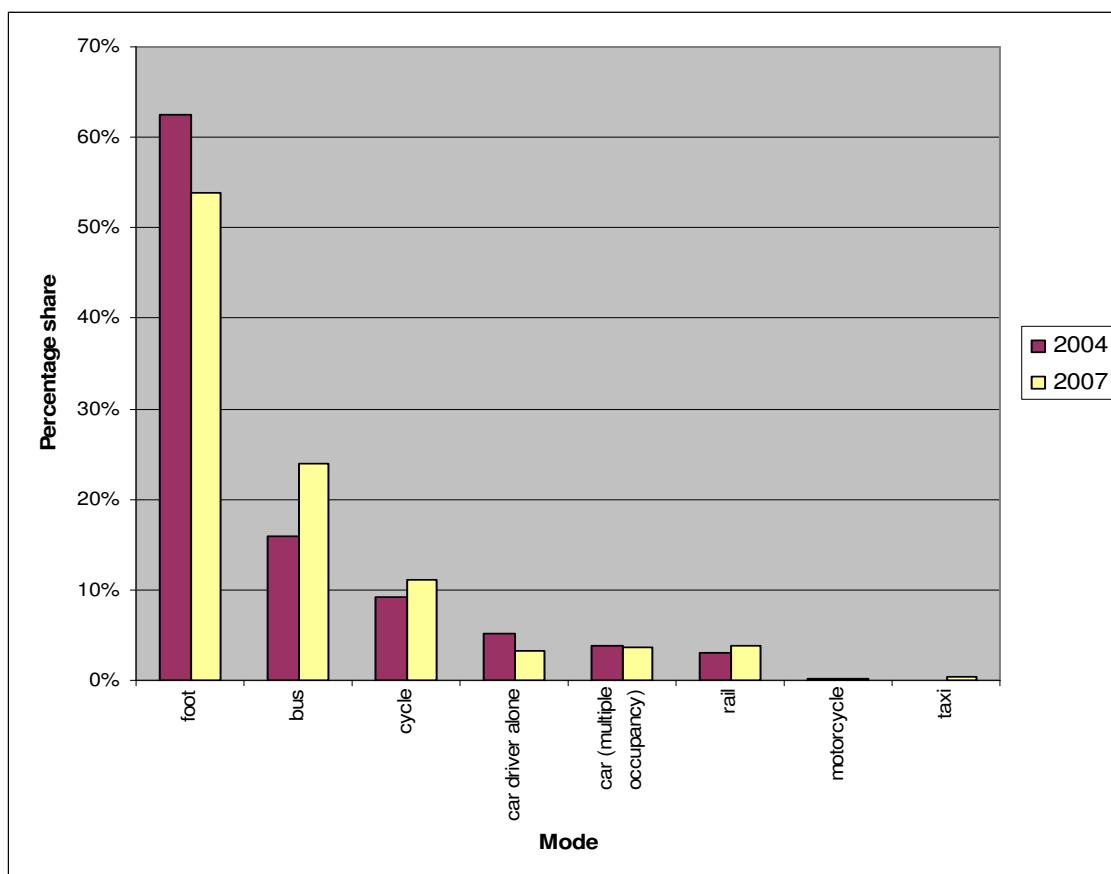


Figure 5.1: Mode share for the total University student population from student surveys undertaken in the year 2004 and 2007 (original data is provided in Table A3, Appendix 3)

- 5.3.13 Table A 3 in Appendix 3 provides a comparison of the 2004 and 2007 student mode share for each University site. The total unweighted number of students who responded at each site in the 2007 survey is also provided. This is a useful piece of information since the lower the number of students who responded, the more sensitive the mode share is to significant changes.
- 5.3.14 To summarise, the Western General Hospital has achieved the largest reduction in the car driver alone mode share, decreasing by 33.4% (from 36.3% to 2.9%). However this projected reduction may in part be due to the low number of unweighted responses from this location (40). All other locations have achieved modest reductions in the car driver alone mode share with the exception of Summerhall (+0.5%) and Other NHS Sites (+2.5%), but these locations had a low unweighted number of responses.
- 5.3.15 At Summerhall the slight increase in the car driver alone mode share has been accompanied by a reduction in the walking mode share by 21.5% and in the car (multiple occupancy) by 2.3%. However there has been a significant increase in the bus mode share by 13.3%. This change in mode share may be attributed to small number of unweighted responses from Summerhall.

- 5.3.16 At Other NHS Sites the slight increase in car driver alone mode share has been accompanied by a reduction in the walking mode share by 20.7% from a mode share of 23.9% in 2004 to a mode share of 3.2% in 2007. However, just 11 unweighted responses were received from this location.
- 5.3.17 The Western General Hospital and Other Locations have seen the highest increase in the cycling mode share by 7.4% and 11.7% respectively. All locations have achieved modest increases in the cycling mode share except for NRIE / QMRI, Little France (a 3.4% reduction).
- 5.3.18 All of the locations, with the exception of Moray House / Holyrood Road, have achieved significant increases in the bus mode share of between 5.1% and 18.9%. The Western General Hospital has achieved the most significant increase by 18.9% from 35.0% in 2004 to 53.9% in 2007.
- 5.3.19 With the exception of the Western General Hospital, Moray House / Holyrood Road and Other Locations, the walking mode share has decreased significantly at all locations by between 2.7% and 21.5%. Summerhall has seen the largest reduction of 21.5%, which, as discussed previously, may be attributable to more teaching taking place at Easter Bush, even though students are based at Summerhall. It will also be sensitive to the small number of unweighted responses from this location.
- 5.3.20 All locations are moving towards a more sustainable mode share, with the exception of Other NHS Sites. This may be because students are based at these sites on a temporary basis, and many of these sites are located outside the Edinburgh area.

5.4 Reason for driving to University

- 5.4.1 Students who stated that their main mode is car driver alone, car driver with passenger(s) or car share were provided with a list of possible reasons why they travel by car and asked to tick any that apply to them.
- 5.4.2 Table 5.5 shows the proportion of students who selected each possible reason, split by the distance they travel. The reason "*I have a much shorter journey time by car*" is the most popular with 61.9% of car drivers selecting this. Proportionally more students who live closer to University selected this reason.
- 5.4.3 The next most popular reason selected was "*I drive to other activities (e.g. study / leisure) before / after University day*" (37.1%). Interestingly this reason was proportionally more popular amongst students who live close to the University than those who live more than 5 miles away, perhaps reflecting the fact that by living closer to University these students have more time outside the University day because they spend less time travelling.
- 5.4.4 The next most popular reason selected was "*I lack a suitable alternative*" (34.0%). Proportionally more students selected this reason who live more than 5 miles from University (49.2%) than those who live closer.
- 5.4.5 Students who live more than 5 miles from University are more likely to select "*I believe the car is the cheapest option*".
- 5.4.6 Students who live less than 2 miles from University are more likely to select "*I don't like public transport*", "*I am concerned about my personal safety*" and "*I move equipment from site to site*".
- 5.4.7 The need to travel elsewhere for University studies was selected by proportionally more students who live more than 5 miles from University.
- 5.4.8 Less than 3% of all students who drive selected "*I don't know public transport timetables*" or "*I have a mobility impairment / disability*".

Table 5.5: Reasons for driving to University

Reason	Less than 2 miles	2+ miles, less than 5 miles	More than 5 miles	Total*
I have a much shorter journey time by car	74.1%	54.5%	62.1%	61.9%
I drive to other activities (eg study / leisure) before / after University day	55.9%	48.2%	26.2%	37.1%
I lack a suitable alternative	12.3%	15.5%	49.2%	34.0%
I believe the car is cheapest option	7.0%	11.9%	31.5%	22.2%
I collect / drop others on route	23.1%	19.5%	18.0%	19.2%
I don't like public transport	25.6%	16.3%	13.1%	16.0%
I need to travel elsewhere for my University studies e.g. field studies / work experience	7.6%	13.7%	16.4%	14.3%
I need to go on to other University site(s)	8.2%	7.3%	14.5%	11.5%
I am concerned about my personal safety	10.5%	9.4%	7.9%	8.7%
I move equipment from site to site	13.7%	9.3%	5.2%	7.7%
No response	0.0%	3.6%	7.0%	5.0%
I don't know public transport timetables	2.7%	3.7%	1.7%	2.4%
I have a mobility impairment / disability	2.7%	3.6%	1.2%	2.1%

N.B: students were able to select as many reasons for driving to University as applicable

* Total as a percentage of the total number of students whose main mode is car driver alone, car driver with passenger(s) or car share. Therefore this column does not add up to 100%.

5.5 Car park location

5.5.1 Students who stated that their main mode is car driver alone, car driver with passenger(s) or car share were asked where they park their car. Table 5.6 shows that for the University as a whole 559 students park in un-metered on-street parking spaces, and 428 park in a University car park.

Table 5.6: Students location of car parking

Location	Commercial Car Park	University Car Park	On-street parking space (free)	On-street parking space (metered)	Train / bus station / Park + Ride	No response	Total
Central Area	20	97	159	144	13		433
Easter Bush		206	26	7			239
King's Buildings / Royal Observatory	3	62	241	2	6	6	319
Moray House / Holyrood Road	78	30	37	12	27		183
New College / Mylne's Court		4					4
NRIE / QMRI, Little France	10	13	67				89
Other location	3	5					8
Other NHS sites		7	24	2			33
Summerhall		3		13			16
Western General Hospital			6	2			8
Total	114	428	559	182	45	6	1,335

- 5.5.2 The highest number of students parking in un-metered on-street parking spaces is at the King's Buildings / Royal Observatory and at Central Area. A similarly high number of students who park in un-metered on-street parking spaces park in metered parking spaces in the Central Area.
- 5.5.3 The highest number of students who park in a University Car Park are based at Easter Bush. Just 45 students whose main mode is as a car driver park at a train station, bus station or park and ride. The majority of these students are based at Moray House / Holyrood Road.
- 5.5.4 Students who drive a car as part of their journey to work, but who cover a greater distance by another mode i.e. bus or rail, were also able to provide information on where they park. Table 5.7 shows that the proportion of the entire student population who park at a bus station, rail station or park and ride is very low at 1.2%.

Table 5.7: Students whose main mode is rail or bus who drive as part of their journey to work and park at a bus station, rail station or park and ride

Main Mode	Weighted Count	%*
Bus	15	0.1%
Rail	273	1.1%
Total	289	1.2%

* as a percentage of the total student population (25,008)

5.6 *Distance travelled*

- 5.6.1 Students were asked to provide the distance travelled by each mode they use on their journey to University. Each individual distance has been added together to provide an overall distance travelled per student.
- 5.6.2 Table 5.8 shows the distance travelled by students to University. It shows that 57.9% of students live less than 2 miles from their main location of study, and 84.6% of students live less than 5 miles from their main location of study. A slightly higher proportion of undergraduates (85.2%) than postgraduates (82.8%) live less than 5 miles from the University.

Table 5.8: Distance travelled to main location of study

Distance	Undergraduate		Postgraduate		Total	
	Weighted Count	%	Weighted Count	%	Weighted Count	%
Under 2 miles	11,120	60.5%	3,353	50.6%	14,472	57.9%
2 miles or over, but under 5 miles	4,543	24.7%	2,140	32.3%	6,683	26.7%
5 miles or over, but under 10 miles	1,322	7.2%	570	8.6%	1,892	7.6%
10 miles or over, but under 15 miles	383	2.1%	137	2.1%	520	2.1%
15 miles or over, but under 25 miles	454	2.5%	158	2.4%	612	2.4%
25 miles or over, but under 50 miles	449	2.4%	224	3.4%	673	2.7%
50 miles or over	102	0.6%	48	0.7%	150	0.6%
No response	6	0.0%	0	0.0%	6	0.0%
Totals	18,378	100%	6,630	100%	25,008	100%

- 5.6.3 Of the 14,472 students that live within 2 miles of the University, it is interesting to analyse what their main mode of travel to University is as they are in an ideal position to walk or cycle, and are more likely to live close to a direct bus route to University.

- 5.6.4 Table 5.9 shows that 87.6% of students who live within 2 miles of the University walk or cycle, and 10.2% take the bus or shuttle bus. **Just 1.9% of students living within 2 miles of the University travel by car (0.9% are car driver alone).**

Table 5.9: Mode share for students living within 2 miles of the University

	Weighted Count	Percentage %
Foot	11,129	76.9%
Cycle	1,551	10.7%
Bus	1,067	7.4%
Shuttle Bus	409	2.8%
Car driver alone	136	0.9%
Car driver with passenger(s)	59	0.4%
Car passenger	58	0.4%
Taxi	35	0.2%
Car share	22	0.2%
Motorcycle	5	0.0%
Total	14,472	100%

- 5.6.5 Table 5.10 shows the average distance travelled to University by location of study. For the University as a whole the average distance is 3.78 miles.
- 5.6.6 The highest average distance travelled is 20.69 miles by students who are based at Other NHS sites. Moray House / Holyrood Road has a high average distance at 9.50 miles. This is likely to be attributable to a higher proportion of mature students who study at this campus.
- 5.6.7 Not surprisingly given its remote location to central Edinburgh, Easter Bush also has a high average distance of 8.10 miles.
- 5.6.8 The lowest average distance is by students who are based in the Central Area at 2.78 miles.

Table 5.10: Student average distance travelled to University by location of study

Location	Weighted Count	Weighted Distance (miles)	Average Distance (miles)
Central Area	14,713	40,848.60	2.78
Easter Bush	625	5,063.81	8.10
King's Buildings / Royal Observatory	5,598	18,010.29	3.22
Moray House / Holyrood Road	1,774	16,862.00	9.50
New College / Mylne's Court	446	1,696.01	3.81
NRIE / QMRI, Little France	1,080	6,889.67	6.38
Other location	119	769.20	6.45
Other NHS sites	73	1,512.38	20.69
Summerhall	309	1,630.53	5.28
Western General Hospital	271	1,301.17	4.80
Total	25,008	94,583.66	3.78

5.7 Preferred mode of travel

- 5.7.1 Table 5.11 indicates that majority of students (71%) are happy with current travel arrangements. **However 9% of students would prefer to walk / run and 7% of students would prefer to cycle.**

Table 5.11: Preferred mode of travel

Mode	Weighted Count	Percentage %
Cycle	2,344	9.4%
Walk/run	1,831	7.3%
Car, sharing with others	919	3.7%
Bus, using a Ridacard / Season ticket	832	3.3%
Car, drive alone	694	2.8%
Rail, using Season ticket	282	1.1%
Motorbike	167	0.7%
Bus, buying ticket each day	69	0.3%
Rail, buying ticket each day	42	0.2%
I am happy with my current travel arrangements	17,829	71.3%
Total	25,008	100%

- 5.7.2 To understand the possible effect on mode share if students were encouraged to switch to their preferred mode, the data has been analysed against the existing student mode share (
- 5.7.3 Table A 4, Appendix 3). The highest proportion of students who are happy with their existing mode are those who walk (88.2%) or cycle (83.3%).
- 5.7.4 **Encouraging modal shift from car driver alone is of greatest interest and the analysis shows that 57.8% of students using this mode would prefer to travel by another mode.** 13.8% selected that they would like to car share, 12.7% would prefer to cycle, 12.6% would prefer to walk/run and 9.4% would prefer to travel by rail, using a season ticket.
- 5.7.5 If the 57.8% of students who are car drivers alone who say they would prefer to travel by different mode, did in fact switch to a different mode, the result would be a student car mode share of 1%.

5.8 University Rideshare Scheme [since renamed Edinburgh Tripshare]

- 5.8.1 Table 5.12 shows that 93.5% of students were not aware of the Rideshare Scheme and 5.1% were aware of the scheme but do not wish to join it. Just 0.3% of the student population was a member of the scheme and only a third of these active. A further 1.1% would consider joining it.

Table 5.12: Awareness of Rideshare Scheme

Awareness	Weighted Count	Percentage %
Yes, and I am a member of the scheme	37	0.1%
Yes, I am a member of the scheme, but not active	38	0.2%
Yes, but I do not wish to join the scheme	1,275	5.1%
Yes, I may consider joining the scheme	278	1.1%
No, I have not heard of the scheme	23,380	93.5%
Total	25,008	100.0%

5.9 Student awareness of current travel plan measures

- 5.9.1 The University of Edinburgh offer a range of measures to promote sustainable transport options. Students were asked if they are aware of these measures, and if so, whether they had made use of them. Table 5.13 shows the results.

Table 5.13: Student usage and awareness of specific measures

Measure	Weighted % aware of	Weighted % aware of and make use of	Weighted % total aware of*
Shuttle Buses (serving various campuses)	47.1%	42.3%	89.4%
University of Edinburgh Bus Guide and Map	22.2%	13.5%	35.7%
Public transport information on the website: www.transport.ed.ac.uk	22.8%	9.3%	32.2%
Shower and locker facilities	24.0%	5.6%	29.6%
Secure cycle stores in addition to Sheffield Racks	18.8%	3.5%	22.2%
Bicycle User Groups at each main campus	12.3%	0.9%	13.3%
Discounts at bicycle shops	11.5%	1.3%	12.7%
Bike Doctor visiting each University site every month in rotation	7.2%	0.9%	8.0%
Bike Buddies Scheme for those who want a little support starting out	4.8%	0.2%	5.0%
Free cycle training for learners / returners to cycling	3.6%	0.3%	3.9%
Emergency toolkits for bikes in specific locations	3.0%	0.5%	3.4%

*as a proportion of the total student population

- 5.9.2 Students are very aware of the shuttle bus services with 89.4% of students aware of this measure and 42.3% using it. Awareness of public transport information is high relative to the awareness of other measures, with 35.7% of students aware of the Bus Guide and Map, and 32.2% aware of the public transport information available on the University's website. Use of these measures is low at 13.5% and 9.3% respectively.
- 5.9.3 Measures to encourage cycling are the least well known and used. Just 3.4% are aware of, and 0.5% make use of the emergency toolkits, and just 3.9% are aware of, and 0.3% make use of the free cycle training. Just 5.0% of students are aware of, and 0.2% make use of the Bike Buddies scheme.
- 5.9.4 Awareness of the Bicycle user groups and discounts at bicycle shops is slightly higher at 13.3% and 12.7% respectively, however only around 1% of students have made use of these. Awareness of cycle infrastructure is much higher, with 22.2% of students aware of, and 3.5% making use of the secure cycle stores, and 29.6% aware of, and 5.6% making use of the shower and locker facilities.

5.10 Contribution to climate change

- 5.10.1 Table 5.14 shows that 47.6% of students are reluctant to change their current travel arrangements. Just under a quarter of all students are open to encouragement to change their current travel arrangements.
- 5.10.2 When analysed in further detail 98.2% of the students who said they were reluctant to change are in fact already travelling by sustainable modes of transport (Table 5.15).
- 5.10.3 Encouragingly 40.9% of students with a main mode of car driver alone stated that "I am open to encouragement to change my travel arrangements and that's OK with me" and 9.4% said "I am planning changes to my travel arrangements this year to reduce carbon emissions" (Table 5.16).

Table 5.14: Student attitude to climate change

Attitude	Count	Percentage %
External circumstances may force changes to my travel arrangements and I would not be happy about it	755	3.0%
I am open to encouragement to change my travel arrangements and that's OK with me	5,916	23.6%
I am planning changes to my travel arrangements this year to reduce carbon emissions	903	3.6%
I am really reluctant to change my travel arrangements	11,912	47.6%
I believe that I am already doing all that I can to minimise my carbon emissions	319	1.3%
I have already made changes to my own travel arrangements to reduce carbon emissions	5,202	20.8%
Totals	25,008	100%

Table 5.15: Proportion of students who selected "I am really reluctant to change my travel arrangements" by their main mode of travel

Mode	Weighted Count	Percentage %
Foot	7,565	63.5%
Bus	1,572	13.2%
Cycle	1,511	12.7%
Shuttle Bus	635	5.3%
Rail	387	3.3%
Car driver alone	113	0.9%
Car passenger	60	0.5%
Car share	28	0.2%
Taxi	20	0.2%
Car driver with passenger(s)	17	0.1%
Motorcycle	3	0.0%
Total	11,912	100.0%

Table 5.16: Student (car drivers alone) attitude towards climate change

Attitude	Weighted Count	%*
External circumstances may force changes to my travel arrangements and I would not be happy about it	102	12.5%
I am open to encouragement to change my travel arrangements and that's OK with me	336	40.9%
I am planning changes to my travel arrangements this year to reduce carbon emissions	77	9.4%
I am really reluctant to change my travel arrangements	113	13.7%
I believe that I am already doing all that I can to minimise my carbon emissions	39	4.7%
I have already made changes to my own travel arrangements to reduce carbon emissions	154	18.8%
Total	822	100%

* as a proportion of the total weighted count of students with main mode: car driver alone

5.11 **Further measures**

- 5.11.1 Students were invited to indicate further measures that the University could put in place to encourage more students to leave their car at home. 44% of all respondents stated further measures that could be put in place.
- 5.11.2 Of the students who answered this question, 30% indicated that more could be done to improve the current shuttle bus service. The majority of comments indicated that students would like a more frequent shuttle bus service especially to King's Buildings and Easter Bush:
- 'Better bus service to Easter Bush'
 - 'Make the shuttle bus more reliable. I used to leave my car at home sometimes then one day the bus didn't turn up and there wasn't another one. I had to walk 45 mins home in the rain'
 - 'more frequent shuttle buses at peak times, 9-10 am and 4-5 pm'
 - 'The shuttle buses are good but only if you are travelling on that route. For a lot of students it would take far longer to get to one of the bus stops, wait for the bus (in the hopes that it's not full) and then ride. More buses along other common routes'
- 5.11.3 Of the students who answered this question, 19% indicated that more could be done to improve cycling facilities:
- 'Better information about all the help with cycling that is available. 'Especially safer places to lock up in or near George Square.'
 - 'More covered cycle parking in central area (Old College!)'
 - 'More water fountains. It took me three years to find the cooler/filter in the psychology building!'
 - 'I used my bike to get to university until it was stolen last year. Perhaps the lack of secure storage space and shelters for bikes deters people from using this method of transport'
- 5.11.4 Of the students who answered this question, 13% indicated that the number of parking spaces at University locations should be reduced and/or increase the parking charges:
- 'Charge more for parking centrally or make it permit only'
 - 'Maybe you could charge people parking rates depending on where they travel from i.e. if they could walk quite easily then charge them more, or make them get permission, as sometimes people are put off by legislative procedures they have to go through'
 - 'Removing the car parks would hit the nail on the head'
 - 'fully pedestrianise central campus'

5.11.5 Of the students who answered this question, 17% indicated that more could be done to improve public transport provision: 61% of students who indicated that more should be done to improve public transport provision would like free/subsidised travel on public transport.

- 'Student Railcards are only valid for travel outwith peak times. This means I and many other students are unable to use this cheaper method of transport due to all our lectures starting at 9 am'
- 'Some friends doing medicine aren't provided with adequate transport to locations outside the city/city centre'
- 'Reduced rate Ridacard for mature students, as currently Lothian Buses only gives student Ridacard to students aged under 26 years'
- 'Lobby for tram line 3 to be built, serving the university sites plus the RIE'

5.11.6 10% of students who answered this question stated that more marketing of the measures is required. A selection of comments are provided below:

- 'From what I have learnt from this survey, the measures in place seem like a very good idea, but perhaps more advertising to raise awareness would encourage still more people to avoid car usage'
- 'More publicity about all the measures to help cyclists. I haven't heard of any of them but would have found it useful when I first started cycling each day'
- 'Let us know about the measures!'
- 'Advertise more widely the measures that have been put in place - I didn't know of most of them!'

5.12 Student Carbon Footprint

5.12.1 Students were asked to provide detailed information about the modes that they use on their normal journey to University, the distance they travel by each mode, and, if they travel by car, what size of engine the car has and what type of fuel it uses.

5.12.2 The annual carbon footprint for each respondent could then be estimated using the Carbon Conversion Factors (CCF) provided in

5.12.3 Table A 5, Appendix 4.

5.12.4 To calculate the daily carbon footprint (CF) the following calculation was used:

$$(CCF \text{ of Mode a} \times \text{distance} \times 2) + (CCF \text{ of Mode b} \times \text{distance} \times 2) \times \dots = \text{Daily CF}$$

5.12.5 In instances where respondents stated that they are a car passenger or a car driver they were asked to state how many other people travel in the car with them. The CCF for the car type they specified was then divided by the number of people in the car, before calculating the daily CF.

5.12.6 To calculate the annual CF the following calculation was carried out:

$$\text{Daily CF} \times \text{number of days per week at University} \times 30^* \text{ or } 44^{**} = \text{Annual CF}$$

*Total number of weeks per year undergraduates study

** Total number of weeks per year postgraduates study

5.12.7 In order to calculate the overall CF for student travel to University, the annual CF for each respondent was factored (as has been carried out for the entire data analysis).

5.12.8 Table 5.17 shows the CF for students by each mode, and shows that the University of Edinburgh's annual student travel to study CF is estimated to be 1,632.5 tonnes tonnes, and the estimated average CF per student is 0.07 tonnes.

Table 5.17: Student travel to study Carbon Footprint

Mode	Weighted Count	Average Distance (miles)	Annual Estimated Total CO₂ (Tonnes)	Annual Average estimated total CO₂ (Tonnes) per student
Bus	4,498	4.72	274.43	0.06
Car driver alone	822	11.99	701.10	0.85
Car driver with passenger(s)	303	8.22	95.35	0.31
Car passenger	377	8.6	111.57	0.30
Car share	226	14.29	117.99	0.52
Cycle	2,781	1.95	0.67	0.00
Foot	13,482	1.19	6.58	0.00
Motorcycle	19	4.95	0.66	0.03
Rail	960	29.23	261.34	0.27
Shuttle Bus	1,474	3.23	56.47	0.04
Taxi	66	2.31	6.34	0.10
Total	25,008	3.78	1632.50	0.07

- 5.12.9 Table 5.18 shows the annual Student CF by location of study. It shows that the Central Area makes the largest contribution to the University's student CF, though this is not surprising given just under 60% of the student population is based in the Central Area.
- 5.12.10 It is therefore more helpful to look at the average CF which shows that in fact the Central Area has the lowest average CF at 0.04 tonnes, which is due to students who are based in the Central Area travelling the lowest average distance to University and because Central Area has a high sustainable mode share.
- 5.12.11 The King's Buildings / Royal Observatory also has a low average CF at 0.04 tonnes.
- 5.12.12 Other NHS sites have the highest average CF at 0.98 tonnes. This is caused both by the higher average distance travelled compared to other locations and by a higher car mode share.

Table 5.18: Student travel to University annual CF by location of study

Location	Weighted Count	Average Distance (miles)	Annual Estimated Total CO₂ (Tonnes)	Annual Average estimated total CO₂ (Tonnes) per student
Central Area	14,713	2.78	518.69	0.04
Easter Bush	625	8.10	182.03	0.29
King's Buildings / Royal Observatory	5,598	3.22	251.34	0.04
Moray House / Holyrood Road	1,774	9.50	381.98	0.22
New College / Mylne's Court	446	3.81	21.21	0.05
NRIE / QMRI, Little France	1,080	6.38	148.70	0.14
Other location	119	6.45	19.31	0.16
Other NHS sites	73	20.69	71.62	0.98
Summerhall	309	5.28	19.21	0.06
Western General Hospital	271	4.74	18.40	0.07
Total	25,008	3.78	1,632.50	0.07

6. Travel Plan recommendations

6.1 Introduction

6.1.1 The results of the 2007 Travel Surveys, and comparison of the mode share data with the 2000 and 2004 data, provide the information with which to assess the efficacy of the University's existing Travel Plan measures.

6.2 Mode share targets

6.2.1 The Integrated Transport Policy 2000 states the following as one of its seven objectives:

"Endeavour to exceed appropriate modal split targets, set out in the City of Edinburgh Council's Local Transport Strategy, that are relevant to specific University sites"

6.2.2 Whilst it does identify particular issues on a site specific basis, this travel survey analysis and review of existing Travel Plan measures does not go into the detail of the content of the site specific Travel Plans. This would require a more detailed assessment.

6.2.3 Table 6.1 compares the most recent City of Edinburgh (CEC) Local Transport Strategy (2007 – 2012) mode share targets for travel to work, with the actual 2007 University of Edinburgh mode share. It shows that the University as a whole community has surpassed all but the public transport target by a considerable margin.

Table 6.1: Comparison of the CEC Local Transport Strategy mode share targets for travel to work, with the actual 2007 University of Edinburgh mode share

Mode	CEC Local Transport Strategy Target Mode Share 2007	University of Edinburgh actual Mode Share 2007
Walk	25% (by 2010)	46%
Cycle	6%	12%
Public Transport	30%	24%
Car	39%	13%

6.2.4 On a site specific basis, progress towards the CEC targets will vary considerably. In seeking to increase the sustainable mode share it is essential that the University identify where the greatest headway can and needs to be made.

6.2.5 It is recommended that ongoing development of Travel Plans for individual sites is prioritised on the basis of their car mode share; and that specific measures appropriate to each location are identified and implemented. Later in this chapter key issues for individual locations are identified and some initial suggestions are made about the types of measures that could be prioritised.

6.3 Promotion of existing measures

6.3.1 It is clear – both from the results of the question regarding awareness and use of the existing Travel Plan measures, and from the suggestions made by staff and students for new Travel Plan measures – that the marketing of the existing measures must be improved. There were a number of congratulatory comments on the existing measures, indicating that staff and students would be interested in the using the measure, were they aware of them.

6.3.2 The 2007 Travel Survey was, in itself, a valuable marketing tool. However it relied on staff and students opting to complete the questionnaire, and the majority of staff and students chose not to. More effective marketing of Travel Plan measures is needed – which has the ability to reach the wider University population.

6.3.3 Use of the internet provides the opportunity for reaching a wide audience and the ability to continually update information. Recommendations for marketing via the web are as follows:

- Provide a direct link from the University homepage to the Transport and Parking homepage. The University has committed itself to reducing its overall impact created by travel through the adoption of the Integrated Transport Policy. This needs to be better communicated to staff and students and such a link helps emphasise this priority.

- Provision of a direct link also makes it easier for staff and students to access information about transport and travel. Currently staff and students have to search for the Transport page using the search engine
- Re-design the existing Transport website. The page does not effectively display information the website contains, and would benefit from more use of graphics and easier navigation
- Upfront advertising of intermittent measures such as Dr Bike on the Transport web pages
- Carbon Footprint calculator for staff and students available on-line
- Further marketing could be achieved as follows:
 - An e-mail “drop” at key times during the University year e.g. at the start of each term, highlighting some of the measures and directing staff and students to the Transport web site for more information. Periodic marketing will maintain the promotion of sustainable travel behaviour as a priority for the University
 - Include a sustainable travel section in the University prospectus
 - Include sustainable travel information in the new student introduction packs. Travel information could be provided for each University Accommodation site and distributed to students on arrival. This would provide information on how to access the various University locations by walking, cycling and public transport
 - Provide sustainable travel information in staff induction packs, similar to that suggested for students (above).

6.4 The Carbon Footprint

6.4.1

Estimating the University's annual Carbon Footprint is an important measure of the impact of staff and student travel behaviour in terms of the global environment. As a major employer and world-renowned institution the University recognises both its role in contributing to climate change and in the role it can take in leading by example by seeking to reduce its Carbon Footprint. The following is recommended:

- Communicate to staff and students the Carbon Footprint estimates and that the University is committed to reducing them by providing assistance to change to sustainable modes of transport
- Communicate to staff and students that the University is committed to reducing the Carbon Footprint associated with ALL of its activities and that travel to work / study forms a component of a wider issue
- Set Carbon Footprint reduction targets and monitor these through future travel surveys
- Provide an on-line Carbon Footprint calculator for staff and students to use as a means of monitoring their personal Carbon Footprint
- Provide advice to staff and students on how to reduce their travel to work / study Carbon Footprint.

6.4.2

The Carbon Footprint for business travel will be far higher than that for travel to work / study, and if the University is to be taken seriously in its commitment to reduce its travel related Carbon Footprint, it must address this issue. The process of claiming for business travel expenses could offer the opportunity to record the necessary information. The existing expenses claim system does not record the necessary data to be able to make an estimate of the Carbon Footprint.

6.4.3

The University should seek to ensure a system is in place to provide the necessary information. It is unlikely that this system will capture University students study-related travel e.g. travel to and during fieldwork, and therefore an additional system of monitoring may need to be developed.

6.4.4

The development of new systems to record business and study related travel could take some time. It is suggested that the system is developed and implemented incrementally, for example:

1. Collection of pool car mileage
2. Collection of car mileage, engine size and fuel type
3. Collection of all business travel data e.g. public transport type and mileage, walking, cycling.
4. Collection of internal flights data
5. Collection of international travel data

6.4.5

In the meantime the University should strongly consider the adoption of a business and study travel policy which favours travel by sustainable modes, and promote the use of video and telephone conferencing.

6.5 Site specific measures

- 6.5.1 Site specific Travel Plans have been introduced at the King's Buildings, the Central Area, NRIE / QMRI at Little France, and Easter Bush. It is strongly recommended that Travel Plans are developed for all University sites.
- 6.5.2 Whilst the existing and future Travel Plan measures are applicable at all sites, to achieve modal shift it is important that measures are adjusted to account for the unique circumstances of each site. For example, measures to encourage walking and cycling should be emphasised at the centrally located sites, whereas measures to encourage car sharing should be emphasised at the more remote locations where the choice of modes is more limited.
- 6.5.3 Detailed measures for specific sites can only be drawn up through the development of site specific Travel Plans. However the 2007 Travel Survey has highlighted a number of issues upon which site specific measures may be developed. Measures which are particularly applicable to specific sites are discussed below, however many will be applicable to all sites:

Central Area

- 6.5.4 Central Area is in a highly accessible location for access by sustainable modes with a key bus corridor running through it, and on and off road cycle and walking links throughout the area. The bus mode share has increased, but the walking mode share has decreased, and the cycling mode share has increased by only a small amount.
- 6.5.5 The reduction in the walking mode share may be related to the transfer of the Medical School from the Central Area to Little France (though this would assume a higher proportion of medical staff and students walked than other staff and students based in the Central Area).
- 6.5.6 However, though not commented on by respondents to the travel survey, the issue of personal security may well be a significant factor in the reduction of the walking mode share. Reports of attacks on pedestrians walking through the Meadows has been on the increase. The walking and cycling routes through the Meadows are key routes to the Central Area from the densely student populated area of Marchmont. It is essential therefore that the University liaises with the City of Edinburgh Council and Lothian and Borders Police to seek to improve security on these routes.
- 6.5.7 The Central Area has the potential to be the flagship location for walking and cycling due to its central location in Edinburgh and proximity to off-road cycle lanes and footpaths through the Meadows area. It is recommended therefore that a particular focus on marketing the existing (and future) measures to encourage walking and cycling is implemented for the Central Area.
- 6.5.8 The Central Area is also well placed for access by public transport, and in particular more use of rail should be encouraged. The production of maps detailing walking and cycling routes between the Central Area and Waverley Train Station would be beneficial. These could indicate the distance and average travel time, and consideration could be given to providing the average calories burned. These maps should also provide information on the bus services between the Central Area and Waverley Station.
- 6.5.9 Encouraging staff and students to travel by sustainable modes can be linked to the health agenda by promoting the health benefits of travelling by sustainable modes. Maps showing the walking and cycling links to the Central Area could also include an estimate of the calories burned, for example, from Waverley Station to George Square. Travelwise Merseyside produce maps of this type and may be able to advise on their development.

King's Buildings / Royal Observatory

- 6.5.10 There has been a significant reduction in the car mode share at this site, achieved in particular by an increase in the cycling and bus mode share.
- 6.5.11 To support the continued growth in cycling it is essential that the cycling infrastructure to and within the site is maintained to a high standard and that periodic audits are undertaken of the cycle parking facilities to ensure that there is adequate provision. The very fact that more staff and students are choosing to cycle to this location indicates that it is an attractive option and therefore the potential to attract more staff and students to cycle is high. It is therefore recommended that the measures to encourage more cycling such as free cycle training, are well marketed here.

- 6.5.12 From 10th June 2007 Lothian Buses Service 41 enters the Kings Buildings site which should encourage more staff and students to travel by bus as it becomes a more convenient option. The service should be heavily promoted through the provision of timetables at locations across the site. It is essential that this promotion is ongoing to maintain awareness. Consideration should also be given to the provision of real time passenger information (RTPI) at the site.

NRIE / QMRI At Little France

- 6.5.13 The NRIE / QMRI is located away from Central Edinburgh having formerly been located in the Central Area. It is therefore not surprising that the walking mode share has reduced. Unfortunately, in the case of students, the car driver alone mode share has risen and the car (multiple occupancy) has fallen. The bus mode share has risen and it is therefore recommended that measures to encourage bus use are emphasised at this location.
- 6.5.14 Clearly however, the car is favoured and this may be due to the unsociable hours medical students work and therefore public transport provision is limited. It is therefore recommended that the Tripshare Scheme is heavily marketed at this location to encourage car drivers to car share.
- 6.5.15 Interestingly, the cycle mode share at this location has significantly increased for staff (more than a 10% increase since 2000), but reduced for students. Further investigation into the reason for this is needed, but it is recommended that an audit be undertaken of the existing cycle infrastructure to ensure it is meeting the needs of staff and students. Promotion of existing measures to encourage more cycling (particularly by students) should be prioritised for this site.

Western General Hospital

- 6.5.16 The car driver alone mode share has decreased significantly, with substantial rises in the bus and cycle mode share.
- 6.5.17 It is recommended that that an audit be undertaken of the existing cycle infrastructure to ensure it is meeting the needs of staff and students. Measures to encourage cycling should be emphasised at this location.

Summerhall

- 6.5.18 Like Central Area, Summerhall is centrally located and ideally positioned to encourage more walking and cycling, situated next to the Meadows and within the main student accommodation area. The measures described for the Central Area are also applicable to Summerhall.

Easter Bush

- 6.5.19 Despite Easter Bush's location away from Central Edinburgh, it has achieved a reduction in the car driver alone mode share. More staff are now travelling in multiple occupancy cars, cycling or motorcycling. More students are travelling by bus or cycling. There is however still a substantial proportion of staff and students who are car drivers alone. Given the location of Easter Bush, reducing the car drive alone mode share would best be achieved through encouraging more car sharing and bus use.
- 6.5.20 It is therefore recommended that the provision of bus services to Easter Bush is reviewed to ensure that they are serving the areas where staff and students live. This will require liaison with the bus operators. The provision of bus infrastructure and timetable information at the site should also be reviewed, and consideration given to the provision of real time passenger information (RTPI) at the site.
- 6.5.21 Easter Bush is a prime location to encourage staff and students to use the Tripshare Scheme and therefore this measure should be heavily promoted here.

Moray House / Holyrood Road

- 6.5.22 Moray House/ Holyrood Road has achieved a significant reduction in the car mode share, achieved through increases in walking and rail.

- 6.5.23 Just under 20% of students based here travel by rail. As the School of Education it attracts a greater proportion of mature students and as such they tend to travel from further afield, hence the high rail mode share. Whilst mature students are eligible for the Young Persons Railcard, the discount is not available before 10am and therefore students with lectures starting at 9am are unable to make use of the discount. It may therefore be worth investigating the views of students on this issue to consider if any action can be taken.
- 6.5.24 There has been a reduction in the bus mode share for students and only a very small increase for staff. As highlighted by comments made in the travel survey, mature students are not eligible for the Lothian Buses Ridacard student discount, which will be a factor in discouraging students based at this site to travel by bus. It is recommended that the University negotiate with Lothian Buses to resolve this issue.

New College / Mylne's Court

- 6.5.25 New College / Mylne's Court has achieved a significant reduction in the car mode share, through increases in bus use and an increase in cycling (by students) and walking (by staff). The cycle mode share has significantly reduced for staff, but since it has increased for students it seems unlikely that this is related to infrastructure issues. It is therefore recommended that the "softer" measures to encourage cycling are pushed at this location.
- 6.5.26 The proximity of this location to Waverley Station offers the opportunity to promote measures to encourage rail use. The proximity of this location to Park and Ride bus services also offers the opportunity to encourage staff and students to park and ride.

Pollock Halls of Residence

- 6.5.27 With just a small number of unweighted responses received from this location the mode share was particularly sensitive to any changes in the data. However the car mode share is high and the data does indicate it is rising. The bus and walking mode share is decreasing and therefore measures to encourage more use of these modes need to be encouraged at this location.
- 6.5.28 There are no bus services which currently serve Pollock Halls of Residence. The nearest bus services are accessed outside the Commonwealth Pool at Old Dalkeith Road. Though only a short walk away, it may be the lack of a direct bus service which is deterring use.
- 6.5.29 In view of the high number of students living at the Halls of Residence (approximately 2,000), and the high numbers of tourists / visitors staying at the accommodation during non-term time, there would appear to be a strong case to introduce a direct bus service to the site. This could involve the diversion of an existing bus service or an entirely new service. The University would need to approach bus operators to discuss the feasibility of this.

6.6 Parking Management

- 6.6.1 A new parking management system is being introduced for the 2007/08 session, which will use a criteria based application process based on the following criteria (in order of importance):
- Mobility
 - Essential business use / working unsociable hours
 - Equality and diversity
 - Lack of suitable alternatives to the car
 - Distance travelled home to work
 - RideShare
- 6.6.2 Obviously this management system is only applicable to University owned car parks and without controls implemented by the City of Edinburgh Council, staff and students are free to park in the areas surrounding University sites.
- 6.6.3 The new management system will assist in reducing the car mode share of staff and students who live within 2 miles of the University, since distance is one of the criteria. However, as already highlighted, in locations surrounded by areas with no parking controls there is nothing to prevent staff and students who have been unsuccessful in applying for a permit to simply park elsewhere.

- 6.6.4 It is therefore recommended that consideration be given to providing staff and students who are unsuccessful in their application for a permit with detailed information on the alternative modes of transport available to them, and the measures available to encourage use of these modes. It may or may not be possible to personalise this information i.e. by identifying where individuals live and providing specific travel information. Clearly this has the potential to be a significant undertaking, and it may therefore be appropriate to pilot such an initiative at a University location with a high car mode share e.g. Easter Bush. The initiative could then be rolled out across the University.

6.7 *Tripshare Scheme*

- 6.7.1 The University has recently re-launched the Rideshare Scheme as the Tripshare Scheme. The new scheme is funded by the Scottish Executive through SEStran, the South East of Scotland Transport Partnership and supported by Edinburgh Council. By registering with the scheme staff and students at the University of Edinburgh can identify potential car sharers both from within the University and, if they choose, potential car sharers from other organisations who use the Tripshare scheme.
- 6.7.2 Only a very small proportion of the University population were aware of the Rideshare scheme, and fewer still were members. It is therefore essential that the Tripshare scheme is better marketed to potential members.
- 6.7.3 The Tripshare scheme should be marketed to the entire University population, but additional targeted marketing should be carried out at specific locations where car sharing would be particularly appropriate. Locations with a high car driver alone mode share, such as Easter Bush, are ideal candidates for targeted marketing.
- 6.7.4 As one of the criteria in the car parking management scheme, membership of the Tripshare scheme should be marketed to parking permit applicants. Applicants currently must request an application form from the Transport and Parking Office. Information about the Tripshare scheme should be sent out with the application form.

6.8 *Site specific Travel Plans*

- 6.8.1 It is through the development, implementation, monitoring and evaluation of site specific Travel Plans that the University of Edinburgh will be able to continue to improve its sustainable transport mode share.
- 6.8.2 The travel survey analysis has identified how the mode share varies considerably across the University locations, reflecting how the accessibility of each location varies. Measures to encourage modal shift must therefore be refined and targeted to account for the individual characteristics and existing mode share of specific locations.
- 6.8.3 The preparation of site specific Travel Plans will provide the mechanism to introduce and target site specific measures.

Appendix 1 Copy of the paper version of the staff questionnaire

The University of Edinburgh Staff Travel Survey 2007

Address Label



Dear colleague

You are invited to complete this year's survey on paper as you don't have access to the internet at work.

If, however, you can access the internet elsewhere we encourage you to complete survey online at:
www.transport.ed.ac.uk/PoliciesAndReports/StaffTravelSurvey.shtm

If you complete online you will be advised of your "Carbon Footprint" for your own travel to and from work – we cannot do this for staff who use this paper form.

To encourage you to complete the survey as soon as possible, the first 100 received will be entered into a £100 cash Prize Draw. All other entries will be entered into two further £100 cash Prize Draws.

A Student Travel Survey is being done at the same time as this Staff Travel Survey. Together they will provide vital information on how staff and students travel to and from the University. This will be used to improve the measures to widen choice of transport modes for staff and students.

For the first time, this Travel Survey will enable us to calculate how much CO₂ is emitted into the atmosphere due to staff and student travel to and from the University. This is commonly known as a Carbon Footprint.

The University seeks to reduce this overall environmental impact – of staff and student travel to and from University sites, of business related travel and of travel by visitors and suppliers. We recognise that our activities contribute to traffic congestion and pollution; and, on a wider scale how these activities contribute to carbon emissions directly linked to climate change. Through our actions we can all make a difference.

Vice-Principal Professor Geoff Boulton, Convenor of the Transport Advisory Group

To help us verify your response while maintaining the confidentiality of this survey please enter your staff ID number and initials in the boxes below

Staff ID Number:

Your initials:

Section A: About your work at the University

1	Which of the following describes your area of work?	(Tick ONE only)
Academic	<input type="radio"/>	
Support Staff	<input type="radio"/>	

2	How many days a week do you USUALLY attend work? (Tick ONE only)			
1 day	<input type="radio"/>	5 days	<input type="radio"/>	
2 days	<input type="radio"/>	6 days	<input type="radio"/>	
3 days	<input type="radio"/>	7 days	<input type="radio"/>	
4 days	<input type="radio"/>			

3 At which of these locations do you normally work?

Select only ONE location in first column for MAIN location. If you often work at Other locations tick them in far column	Main location (Tick ONE only)	Other locations (Tick ALL that apply)
Easter Bush	<input type="radio"/>	<input type="checkbox"/>
King's Buildings / Royal Observatory	<input type="radio"/>	<input type="checkbox"/>
Summerhall	<input type="radio"/>	<input type="checkbox"/>
NRIE / QMRI, Little France	<input type="radio"/>	<input type="checkbox"/>
Western General Hospital	<input type="radio"/>	<input type="checkbox"/>
*Other NHS sites	<input type="radio"/>	<input type="checkbox"/>
Central Area: George Square, Teviot Place, Old College, Chambers Street, Infirmary Street, Pleasance etc	<input type="radio"/>	<input type="checkbox"/>
New College / Mylne's Court	<input type="radio"/>	<input type="checkbox"/>
Moray House / Holyrood Road	<input type="radio"/>	<input type="checkbox"/>
Pollock Halls of Residence	<input type="radio"/>	<input type="checkbox"/>
*Other location	<input type="radio"/>	<input type="checkbox"/>
If "Other location" or "Other NHS sites" selected - please write in location		

Section B: About your travel to work

4

6.8.4 Thinking about your USUAL journey to work, what mode or modes of transport do you use? For example if you drive to a Park & Ride site and then catch a bus to your place of work you would enter information below relating to BOTH the car AND the bus journey.

Mode	Tick any used	Distance travelled by this mode (please be as accurate as possible)*	Time taken by this mode minutes	Car engine capacity (Tick ONE only)	Fuel type or ticket type (Tick ONE only per row)
Walk/run	<input type="checkbox"/>	_____ miles	_____		
Cycle	<input type="checkbox"/>	_____ miles	_____		
Motorcycle	<input type="checkbox"/>	_____ miles	_____		
Car driver	<input type="checkbox"/>	_____ miles	_____	Up to 1.5 litres 1.5-2 litres More than 2 litres	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Car passenger	<input type="checkbox"/>	_____ miles	_____	Up to 1.5 litre 1.5-2 litres More than 2 litres Don't know	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Bus	<input type="checkbox"/>	_____ miles	_____		daily ticket other travel card
Rail	<input type="checkbox"/>	_____ miles	_____		daily ticket season ticket
Taxi	<input type="checkbox"/>	_____ miles	_____		

*to calculate your travel to study Carbon Footprint it is important that you provide a reasonably accurate estimate of the distance you travel by the usual mode or modes you use. We suggest that you use the website to determine the distance that you travel: www.mapquest.co.uk/mq/directions/mapbydirection.do

If you DID NOT tick "Car driver" or "Car passenger" GO STRAIGHT TO Section C

5

We are interested to know about your driver/pasenger status and also how the car you USUALLY travel to work in is used by yourself and others. Please complete the following sentence

	Tick ONE only		Tick ONE only
I am the driver...	<input type="radio"/>	...in a car which carries the following number of people for the majority of the journey (including the driver)	<input type="radio"/> 1
I am a passenger...	<input type="radio"/>		<input type="radio"/> 2
I share responsibility for driving...	<input type="radio"/>		<input type="radio"/> 3
			<input type="radio"/> 4 or more

If you ticked "I am a passenger..." GO STRAIGHT TO Section C

6	I USUALLY drive my car to University because....	(Tick ALL that apply)
	...I need to go on to other University site(s)	<input type="checkbox"/>
	...I need to travel elsewhere on University business	<input type="checkbox"/>
	...I move equipment from site to site	<input type="checkbox"/>
	...I collect / drop others on route	<input type="checkbox"/>
	...I drive to other activities (eg study / leisure) before / after the University day	<input type="checkbox"/>
	...I have carer responsibilities	<input type="checkbox"/>
	...I have a mobility impairment / disability	<input type="checkbox"/>
	...I lack a suitable alternative	<input type="checkbox"/>

...I don't know public transport timetables	<input type="checkbox"/>
...I believe the car is cheapest option	<input type="checkbox"/>
...I have a much shorter journey time by car	<input type="checkbox"/>
...I don't like public transport	<input type="checkbox"/>
...I am concerned about my personal safety	<input type="checkbox"/>

7	I USUALLY park my car in...	(Tick ONE only)
	...a University Car Park	<input type="radio"/>
	...a Commercial Car Park	<input type="radio"/>
	...an on-street parking space (metered)	<input type="radio"/>
	...an on-street parking space (free)	<input type="radio"/>

Section C: About other travel options for you

8	If given the choice, how would you prefer to travel to work?	My Preference (Tick ONE only)
	Walk/run	<input type="radio"/>
	Cycle	<input type="radio"/>
	Bus, buying ticket each day	<input type="radio"/>
	Bus, using a Ridacard / Season ticket	<input type="radio"/>
	Rail, buying ticket each day	<input type="radio"/>
	Rail, using Season ticket	<input type="radio"/>
	Motorbike	<input type="radio"/>
	Car, sharing with others	<input type="radio"/>
	Car, drive alone	<input type="radio"/>
	I am happy with my current travel arrangements	<input type="radio"/>

9	Are you aware of the University RideShare scheme?	(Tick ONE only)
	Yes, and I am a member of the scheme	<input type="radio"/>
	Yes, I am a member of the scheme, but not active	<input type="radio"/>
	Yes, but I do not wish to join the scheme	<input type="radio"/>
	Yes, I may consider joining the scheme	<input type="radio"/>
	No, I have not heard of the scheme	<input type="radio"/>

10	Are you aware of the following measures that the University has put in place to encourage more staff to leave their car at home? Have you made use of any of them?	I am aware of this measure (Tick ALL that apply)	I have made use of this measure (Tick ALL that apply)
	University of Edinburgh Bus Guide and Map	<input type="checkbox"/>	<input type="checkbox"/>
	Public transport information on the website: www.transport.ed.ac.uk	<input type="checkbox"/>	<input type="checkbox"/>
	Interest free Staff Travel Loan for season ticket / bicycle purchase	<input type="checkbox"/>	<input type="checkbox"/>
	Discount on <i>One Ticket</i> (for mixed mode public transport)	<input type="checkbox"/>	<input type="checkbox"/>
	Shuttle Buses (serving various campuses)	<input type="checkbox"/>	<input type="checkbox"/>
	Pool Cars for those who need a car for business travel	<input type="checkbox"/>	<input type="checkbox"/>
	Bicycle User Groups at each main campus	<input type="checkbox"/>	<input type="checkbox"/>
	Bike Buddies Scheme for those who want a little support starting out	<input type="checkbox"/>	<input type="checkbox"/>
	Bike Doctor visiting each University site every month in rotation	<input type="checkbox"/>	<input type="checkbox"/>
	Free cycle training for learners / returners to cycling	<input type="checkbox"/>	<input type="checkbox"/>
	Emergency toolkits for bikes in specific locations	<input type="checkbox"/>	<input type="checkbox"/>
	Discounts at bicycle shops	<input type="checkbox"/>	<input type="checkbox"/>
	Secure cycle stores in addition to Sheffield Racks	<input type="checkbox"/>	<input type="checkbox"/>
	Shower and locker facilities	<input type="checkbox"/>	<input type="checkbox"/>

11	Are there any further measures that the University could put in place that you think would encourage more staff to leave their car at home?

12	The contribution to climate change that the carbon emissions generated by our travel behaviour makes is much in the news. Which statement below best describes your attitude to what you personally can do about your travel behaviour?	(Tick ONE only)
I have already made changes to my own travel arrangements to reduce carbon emissions		<input type="radio"/>
I am planning changes to my travel arrangements this year to reduce carbon emissions		<input type="radio"/>
I am open to encouragement to change my travel arrangements and that's OK with me		<input type="radio"/>
I am really reluctant to change my travel arrangements		<input type="radio"/>
External circumstances may force changes to my arrangements and I would not be happy about it		<input type="radio"/>

Section D: About you

The University is committed to working closely with the City of Edinburgh Council and public transport operators to provide greater choice of travel to work and study for staff and students. To help identify gaps in public transport provision and sustainable transport links for travel to each campus, the University is asking staff and students to provide their home / term-time residence postcode. Your postcode will be used strictly for the purposes of identifying how staff and student home location relates to the provision of transport links. It will not be used to identify individuals and will be treated as confidential.

13	My home postcode is:						
		For example E H 8 9 Y L					

14	Your transport related comments are invited. Please use this space for any further comments you wish to make about travel to the University.

Data Protection Information

Your Staff ID number and initials will only be used to uniquely identify the data you submit and to prevent accidental duplications. The University commissioned the transport planning consultancy, Colin Buchanan, to do this year's Staff and Student Travel Surveys. Their staff will analyse all the responses and provide an overall report which will be published. No individual travel habits or personal information will be revealed. Only members of the survey team and University staff analysing data will have access to the information.

By submitting a completed survey form you consent to the University's use of the information given for the purposes of the Travel Survey. If you have any queries regarding the University's use of your information please contact the University's Data Protection Officer by sending an e-mail to Data-Protection@ed.ac.uk.

Prize draws will be conducted entirely separately – using Staff ID numbers to elicit contact details from HR – should *you* be a lucky prize winner! Winners will be personally notified.

Thank you for completing the survey. Now fold this in three and insert one edge in to make a little envelope with this address showing:

University of Edinburgh Travel Survey
Charles Stewart House, 9-16 Chambers Street
Please put completed surveys into the Internal Mail

Appendix 2

Staff Data

Table A 1: Staff mode share (main mode) by location of employment and year (staff surveys were undertaken in 2000, 2004 and 2007)

	Mode Share			% change since 2000	
	2000	2004	2007		
Central Area					
(Total number of unweighted responses for the 2007 survey = 850)					
bus	25.1%	24.0%	27.3%	2.2%	
car (multiple occupancy)	11.6%	12.9%	10.9%	-0.7%	
car driver alone	20.7%	20.2%	13.9%	-6.8%	
cycle	8.2%	8.8%	10.4%	2.2%	
foot	28.1%	23.1%	25.8%	-2.3%	
motorcycle	0.7%	1.7%	1.2%	0.5%	
no response	0.3%	0.0%	0.0%	-0.3%	
rail	5.4%	9.4%	10.3%	4.9%	
taxi	0.0%	0.0%	0.1%	0.1%	
Easter Bush					
(Total number of unweighted responses for the 2007 survey = 52)					
bus	12.6%	16.9%	10.8%	-1.8%	
car (multiple occupancy)	13.3%	7.9%	15.6%	2.3%	
car driver alone	62.9%	71.1%	62.2%	-0.7%	
cycle	1.4%	1.2%	4.6%	3.2%	
foot	7.7%	1.5%	2.1%	-5.7%	
motorcycle	2.1%	1.2%	3.8%	1.7%	
no response	0.0%	0.0%	0.0%	0.0%	
rail	0.0%	0.0%	1.0%	1.0%	
taxi	0.0%	0.0%	0.0%	0.0%	
King's Buildings / Royal Observatory					
(Total number of unweighted responses for the 2007 survey = 423)					
bus	15.7%	16.9%	19.8%	4.1%	
car (multiple occupancy)	18.0%	19.7%	15.0%	-3.0%	
car driver alone	33.5%	27.5%	20.1%	-13.4%	
cycle	12.6%	18.5%	22.9%	10.3%	
foot	18.2%	15.4%	19.3%	1.1%	
motorcycle	0.5%	0.5%	0.2%	-0.3%	
no response	0.2%	0.0%	0.0%	-0.2%	
rail	1.3%	4.2%	2.6%	1.3%	
taxi	0.0%	0.0%	0.1%	0.1%	
Moray House / Holyrood Road					
(Total number of unweighted responses for the 2007 survey = 75)					
bus	-	21.60%	21.88%	0.3%	
car (multiple occupancy)	-	16.40%	11.83%	-4.6%	
car driver alone	-	25.50%	12.41%	-13.1%	
cycle	-	8.60%	7.73%	-0.9%	
foot	-	14.70%	23.63%	8.9%	
motorcycle	-	2.30%	5.28%	3.0%	
rail	-	10.80%	17.24%	6.4%	
taxi	-	0.00%	0.00%	0.0%	

	Mode Share			% change since 2000	
	2000	2004	2007		
New College / Mylne's Court					
(Total number of unweighted responses for the 2007 survey = 21)					
bus	35.9%	37.2%	43.4%	7.5%	
car (multiple occupancy)	7.7%	7.7%	3.5%	-4.2%	
car driver alone	23.1%	12.0%	0.0%	-23.1%	
cycle	10.3%	13.7%	3.5%	-6.8%	
foot	7.7%	20.7%	25.7%	18.0%	
motorcycle	0.0%	0.0%	0.0%	0.0%	
no response	2.6%	0.0%	0.0%	-2.6%	
rail	12.8%	8.8%	23.8%	11.0%	
taxi	0.0%	0.0%	0.0%	0.0%	
NRIE / QMRI, Little France					
(Total number of unweighted responses for the 2007 survey = 115)					
bus	26.3%	33.1%	33.7%	7.4%	
car (multiple occupancy)	16.6%	21.2%	14.1%	-2.5%	
car driver alone	20.4%	28.2%	26.1%	5.7%	
cycle	5.2%	7.4%	15.4%	10.2%	
foot	23.7%	4.1%	7.6%	-16.1%	
motorcycle	0.8%	1.8%	0.9%	0.1%	
no response	1.0%	0.0%	0.0%	-1.0%	
rail	6.2%	4.3%	2.2%	-4.0%	
taxi	0.0%	0.0%	0.0%	0.0%	
Other Location					
(Total number of unweighted responses for the 2007 survey = 35)					
bus	-	39.8%	28.5%	-11.3%	
car (multiple occupancy)	-	20.0%	20.4%	0.4%	
car driver alone	-	20.1%	21.9%	1.8%	
cycle	-	0.0%	7.3%	7.3%	
foot	-	10.0%	21.9%	11.9%	
motorcycle	-	5.0%	0.0%	-5.0%	
rail	-	5.0%	0.0%	-5.0%	
taxi	-	0.0%	0.0%	0.0%	
Other NHS Sites					
(Total number of unweighted responses for the 2007 survey = 10)					
bus	6.1%	6.2%	13.1%	7.0%	
car (multiple occupancy)	15.2%	12.0%	14.9%	-0.3%	
car driver alone	54.5%	49.1%	42.5%	-12.0%	
cycle	9.1%	6.2%	7.5%	-1.6%	
foot	15.2%	21.2%	22.0%	6.8%	
motorcycle	0.0%	5.4%	0.0%	0.0%	
no response	0.0%			0.0%	
rail	0.0%	0.0%	0.0%	0.0%	
taxi	0.0%	0.0%	0.0%	0.0%	

	Mode Share			% change since 2000	
	2000	2004	2007		
Pollock Halls of Residence					
(Total number of unweighted responses for the 2007 survey = 35)					
bus	42.7%	59.4%	33.6%	-9.1%	
car (multiple occupancy)	16.4%	7.8%	7.1%	-9.3%	
car driver alone	20.8%	20.4%	34.3%	13.5%	
cycle	1.7%	1.8%	6.4%	4.7%	
foot	16.9%	7.8%	12.1%	-4.8%	
motorcycle	0.0%	0.9%	0.0%	0.0%	
no response	0.6%			-0.6%	
rail	1.1%	1.8%	5.7%	4.6%	
taxi	0.0%	0.0%	0.7%	0.7%	
Summerhall					
(Total number of unweighted responses for the 2007 survey = 28)					
bus	20.0%	30.0%	18.0%	-2.0%	
car (multiple occupancy)	21.4%	21.3%	14.3%	-7.1%	
car driver alone	20.0%	21.0%	17.5%	-2.5%	
cycle	13.8%	12.7%	9.3%	-4.5%	
foot	22.5%	12.8%	41.0%	18.5%	
motorcycle	0.0%	0.0%	0.0%	0.0%	
no response	0.0%			0.0%	
rail	2.5%	2.1%	0.0%	-2.5%	
taxi	0.0%	0.0%	0.0%	0.0%	
Western General Hospital					
(Total number of unweighted responses for the 2007 survey = 76)					
bus	14.8%	20.9%	23.3%	8.5%	
car (multiple occupancy)	12.5%	13.7%	8.1%	-4.4%	
car driver alone	46.6%	40.1%	33.4%	-13.2%	
cycle	12.5%	11.3%	16.9%	4.4%	
foot	10.2%	10.7%	10.5%	0.3%	
motorcycle	1.1%	2.6%	1.9%	0.8%	
no response	0.0%			0.0%	
rail	2.3%	0.8%	5.9%	3.6%	
taxi	0.0%	0.0%	0.0%	0.0%	
Total					
(Total number of unweighted responses for the 2007 survey = 1720)					
bus	23.6%	26.6%	25.1%	1.5%	
car (multiple occupancy)	14.9%	14.6%	12.2%	-2.7%	
car driver alone	27.6%	25.5%	19.2%	-8.4%	
cycle	7.9%	10.4%	13.3%	5.4%	
foot	20.7%	17.6%	21.3%	0.6%	
motorcycle	0.7%	1.5%	1.3%	0.6%	
no response	0.4%	0.0%	0.0%	-0.4%	
rail	4.3%	5.9%	7.6%	3.3%	
taxi	0.0%	0.0%	0.1%	0.1%	

Table A 2: Staff existing main mode by preferred mode of travel to work (staff could only select one preferred mode of travel)

Existing Main Mode	Preferred Mode											
	I am happy with my current travel arrangements	Walk/run	Cycle	Bus, using a Ridacard / Season ticket	Rail, using Season ticket	Car, sharing with others	Car, drive alone	Multiple choice (paper version)	Bus, buying ticket each day	Rail, buying ticket each day	Motorbike	Total
Cycle	93.5%	3.8%	0.0%	0.8%	0.0%	0.4%	0.6%	0.8%	0.0%	0.1%	0.0%	100%
Foot	90.5%	0.0%	6.9%	0.9%	0.0%	0.1%	0.6%	0.7%	0.3%	0.1%	0.0%	100%
Motorcycle	77.5%	5.6%	7.6%	0.0%	1.3%	4.0%	4.0%	0.0%	0.0%	0.0%	0.0%	100%
Car share	72.0%	1.7%	3.8%	6.8%	2.0%	0.0%	3.4%	0.0%	6.0%	0.5%	3.8%	100%
Rail	66.5%	11.5%	4.8%	0.7%	8.9%	0.0%	4.3%	0.0%	0.0%	3.3%	0.0%	100%
Car driver + passenger(s)	66.5%	5.0%	4.5%	6.4%	4.7%	8.6%	1.5%	0.0%	1.2%	0.8%	0.8%	100%
Car driver alone	60.0%	7.1%	8.3%	8.3%	9.6%	5.2%	0.0%	0.3%	0.8%	0.4%	0.0%	100%
Car passenger	58.8%	8.5%	7.9%	8.4%	1.8%	8.3%	2.8%	1.7%	1.8%	0.0%	0.0%	100%
Bus	58.0%	15.0%	9.4%	5.8%	1.0%	3.1%	5.0%	1.6%	0.4%	0.3%	0.3%	100%
Taxi	57.8%	42.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	71.9%	7.2%	6.5%	4.2%	3.2%	2.7%	2.1%	0.8%	0.6%	0.5%	0.2%	100%

Appendix 3

Student Data

Table A 3: Student mode share (main mode) by location of study and year (students surveys were undertaken in 2004 and 2007)

	Mode Share			% change since 2004	
	2000	2004	2007		
Central Area					
(Total number of unweighted responses for the 2007 survey = 1892)					
bus	-	11.5%	18.9%	7.4%	
car (multiple occupancy)	-	1.7%	1.9%	0.2%	
car driver alone	-	3.1%	1.9%	-1.2%	
cycle	-	6.9%	8.1%	1.2%	
foot	-	74.6%	65.9%	-8.7%	
motorcycle	-	0.1%	0.0%	-0.1%	
rail		0.0%	0.0%	0.0%	
taxi	-	0.0%	0.3%	0.3%	
Easter Bush					
(Total number of unweighted responses for the 2007 survey = 95)					
bus	-	29.1%	36.7%	7.6%	
car (multiple occupancy)	-	44.1%	38.7%	-5.4%	
car driver alone	-	17.6%	17.2%	-0.4%	
cycle	-	1.2%	2.9%	1.7%	
foot	-	6.8%	3.6%	-3.2%	
motorcycle	-	1.2%	1.0%	-0.2%	
rail	-	0.0%	0.0%	0.0%	
taxi	-	0.0%	0.0%	0.0%	
King's Buildings / Royal Observatory					
(Total number of unweighted responses for the 2007 survey = 1000)					
bus	-	18.6%	29.3%	10.7%	
car (multiple occupancy)	-	4.2%	3.7%	-0.5%	
car driver alone	-	5.4%	3.4%	-2.0%	
cycle	-	16.3%	20.1%	3.8%	
foot	-	54.0%	41.8%	-12.2%	
motorcycle	-	0.4%	0.0%	-0.4%	
rail	-	1.1%	1.6%	0.5%	
taxi	-	0.0%	0.1%	0.1%	
Moray House / Holyrood Road					
(Total number of unweighted responses for the 2007 survey = 227)					
bus	-	21.7%	19.2%	-2.5%	
car (multiple occupancy)	-	8.1%	4.9%	-3.2%	
car driver alone	-	8.9%	8.1%	-0.8%	
cycle	-	4.2%	4.3%	0.1%	
foot	-	42.5%	44.6%	2.1%	
motorcycle	-	0.0%	0.1%	0.1%	
rail	-	14.6%	18.5%	3.9%	
taxi	-		0.5%	0.5%	

	Mode Share			% change since 2004	
	2000	2004	2007		
New College / Mylne's Court					
(Total number of unweighted responses for the 2007 survey = 57)					
bus	-	18.2%	27.0%	8.8%	
car (multiple occupancy)	-	1.4%	1.0%	-0.4%	
car driver alone	-	5.0%	1.5%	-3.5%	
cycle	-	4.5%	9.0%	4.5%	
foot	-	64.1%	52.5%	-11.6%	
motorcycle	-	0.0%	0.0%	0.0%	
no response					
rail	-	6.8%	8.0%	1.2%	
taxi	-	0.0%	1.0%	1.0%	
NRIE / QMRI, Little France					
(Total number of unweighted responses for the 2007 survey = 162)					
bus	-	51.9%	57.3%	5.4%	
car (multiple occupancy)	-	3.7%	4.8%	1.1%	
car driver alone	-	6.1%	4.7%	-1.4%	
cycle	-	24.5%	21.1%	-3.4%	
foot	-	12.4%	9.7%	-2.7%	
motorcycle	-	0.8%	0.0%	-0.8%	
rail	-	0.5%	2.3%	1.8%	
taxi	-	0.0%	0.0%	0.0%	
Other Location					
(Total number of unweighted responses for the 2007 survey = 18)					
bus	-	9.5%	19.7%	10.2%	
car (multiple occupancy)	-	21.1%	0.0%	-21.1%	
car driver alone	-	39.8%	6.9%	-32.9%	
cycle	-	0.0%	11.7%	11.7%	
foot	-	25.5%	54.7%	29.2%	
motorcycle	-	0.0%	0.0%	0.0%	
rail	-	4.2%	6.9%	2.7%	
taxi	-	0.0%	0.0%	0.0%	
Other NHS Sites					
(Total number of unweighted responses for the 2007 survey = 11)					
bus	-	16.8%	21.9%	5.1%	
car (multiple occupancy)	-	29.1%	32.8%	3.7%	
car driver alone	-	23.9%	26.4%	2.5%	
cycle	-	6.5%	8.9%	2.4%	
foot	-	23.9%	3.2%	-20.7%	
motorcycle	-	0.0%	6.7%	6.7%	
rail	-	0.0%	0.0%	0.0%	
taxi	-	0.0%	0.0%	0.0%	

	Mode Share			% change since 2004	
	2000	2004	2007		
Summerhall					
(Total number of unweighted responses for the 2007 survey = 46)					
bus	-	8.8%	22.1%	13.3%	
car (multiple occupancy)	-	5.5%	3.2%	-2.3%	
car driver alone	-	2.7%	3.2%	0.5%	
cycle	-	4.0%	6.6%	2.6%	
foot	-	77.8%	56.3%	-21.5%	
motorcycle	-	0.0%	0.0%	0.0%	
rail	-	1.4%	8.7%	7.3%	
taxi	-	0.0%	0.0%	0.0%	
Western General Hospital					
(Total number of unweighted responses for the 2007 survey = 40)					
bus	-	35.0%	53.9%	18.9%	
car (multiple occupancy)	-	0.0%	1.2%	1.2%	
car driver alone	-	36.3%	2.9%	-33.4%	
cycle	-	16.5%	23.9%	7.4%	
foot	-	12.2%	18.1%	5.9%	
motorcycle	-	0.0%	0.0%	0.0%	
rail	-	0.0%	0.0%	0.0%	
taxi	-	0.0%	0.0%	0.0%	
Total					
(Total number of unweighted responses for the 2007 survey = 3548)					
bus	-	15.9%	23.9%	8.0%	
car (multiple occupancy)	-	3.9%	3.6%	-0.3%	
car driver alone	-	5.1%	3.3%	-1.8%	
cycle	-	9.2%	11.1%	1.9%	
foot	-	62.5%	53.9%	-8.6%	
motorcycle	-	0.2%	0.1%	-0.1%	
rail	-	3.1%	3.8%	0.7%	
taxi	-		0.3%	0.3%	

Table A 4: Student existing main mode by preferred mode of travel to work (students could only select one preferred mode of travel)

Existing Main Mode	Preferred Mode										
	I am happy with my current travel arrangements	Cycle	Walk/run	Car, sharing with others	Bus, using a Ridacard / Season ticket	Car, drive alone	Rail, using Season ticket	Motorbike	Bus, buying ticket each day	Rail, buying ticket each day	Total
Cycle	88.2%	0.0%	8.8%	0.8%	0.4%	0.9%	0.0%	0.7%	0.2%	0.0%	100%
Foot	83.3%	10.5%	0.0%	1.6%	2.5%	1.5%	0.0%	0.3%	0.2%	0.0%	100%
Car share	62.8%	8.6%	11.0%	0.0%	8.7%	2.9%	6.1%	0.0%	0.0%	0.0%	100%
Rail	54.6%	2.3%	12.7%	7.3%	0.9%	6.4%	10.8%	0.9%	0.2%	3.7%	100%
Car driver + passenger(s)	54.2%	4.3%	11.9%	9.5%	11.8%	2.9%	5.3%	0.0%	0.0%	0.0%	100%
Shuttle Bus	51.8%	13.3%	19.7%	6.0%	5.3%	2.4%	0.0%	0.9%	0.6%	0.0%	100%
Bus	45.4%	11.5%	21.1%	6.5%	5.8%	6.9%	1.3%	1.5%	0.2%	0.0%	100%
Car driver alone	42.2%	12.7%	12.6%	13.8%	5.8%	0.0%	9.4%	1.1%	1.6%	0.8%	100%
Motorcycle	40.6%	0.0%	0.0%	0.0%	34.0%	0.0%	0.0%	25.4%	0.0%	0.0%	100%
Car passenger	35.5%	13.7%	12.4%	20.7%	3.7%	10.9%	2.1%	0.5%	0.5%	0.0%	100%
Taxi	34.1%	17.0%	24.5%	3.0%	18.1%	3.4%	0.0%	0.0%	0.0%	0.0%	100%
Total	71.3%	9.4%	7.3%	3.7%	3.3%	2.8%	1.1%	0.7%	0.3%	0.2%	100%

Appendix 4

Carbon Conversion Factors

Table A 5: Carbon Conversion Factors used in the Carbon Footprint calculation, and source of the data used

Mode	Carbon Conversion Factor (kg CO ₂ / mile or /passenger mile)	Source of Data
Walk	0	
Cycle	0	
Motorcycle	0.024	National Atmospheric Emissions Inventory. 2005 data for petrol motorcycles (average taken of rural, urban and motorway emissions)
Bus	0.045	All Party Parliamentary Climate Change Group: 25/5 Challenge
Train	0.024	All Party Parliamentary Climate Change Group: 25/5 Challenge
Taxi	0.23	assume to be large diesel (see below)
Petrol, small, car	0.28	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
Petrol, medium, car	0.36	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
Petrol, large, car	0.44	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
Diesel small, car	0.19	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
Diesel, medium, car	0.19	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
Diesel, large, car	0.23	DEFRA: Environmental Reporting - Guidelines for Company Reporting on Greenhouse Gas Emissions
LPG, small, car	0.20	Assumed 30% less C produced than by an equivalent sized petrol car
LPG, medium, car	0.25	Assumed 30% less C produced than by an equivalent sized petrol car
LPG, large, car	0.31	Assumed 30% less C produced than by an equivalent sized petrol car
Hybrid	0.08	0.1283kg/km as provided by DfT (Chris Parkin) for registered weighted average of Hybrid vehicles