

SMART MOVE

Travel Plan 2004 - 2009



working towards a
sustainable campus

Foreword from the Vice-Chancellor

With over 13,000 staff and students, in conjunction with our close proximity to city the centre, the University recognises that we play a significant role in influencing Bradford's transportation patterns.

With the University planning substantial investment in our estate and research activities to help grow the student population, it is inevitable that the volume of traffic coming to the University will increase and present some serious challenges to our aim of working towards a sustainable campus.

It is within this context that the travel plan has been developed. The plan contains measures to support and encourage our staff and students in commuting by alternative modes of transport such as walking, cycling, using the bus, taking the train and car sharing.

Professor Chris Taylor
Vice-Chancellor and Principal

Contents

An Introduction to Travel Planning	4
Motivations	5
Background	8
Understanding Current Travel Patterns	15
Understanding Emissions	26
Understanding Site Traffic Flow	27
Future Trends and Implications	28
Objective 1 - Reduce the Need to Travel	31
Objective 2 - Control Business Travel	32
Objective 3 - Encourage Public Transport Use	33
Objective 4 - Encourage Walking and Cycling	34
Objective 5 - Promote Sustainable Travel Choices	35
Objective 6 - Control Motor Vehicle Use	36
Organising For Success	38
Monitoring For Success	39

An Introduction to Travel Planning

What is a "travel plan"?

Travel plans provide a different approach to travelling to work and aim to reduce the amount of traffic and to promote a wider range of more environmentally friendly and healthy transport options.

Travel plans are not 'anti-car', but emphasise the travel choices that are available and accessible to everyone.

A travel plan is therefore a general term for a package of travel measures tailored to the needs of individual organisations and aimed at promoting greener, cleaner travel choices.

What Travel Plans seek to do

Travel plans are dependent upon the site circumstances of individual organisations and therefore can address a wide variety of travel issues. However, common aims include:

1. Informing employees of alternative modes of travel available to them
2. Identifying opportunities to provide new sustainable travel choices
3. Promoting the use of alternative modes of travel
4. Supporting employees to achieve a shift in travel behaviour away from single-occupancy car use towards more sustainable forms of transport
5. Reducing the environmental impact of travel

What are the options available?

Many initiatives can be introduced in a travel plan. These include measures to encourage:

- Flexible working practices
- Walking
- Cycling
- Greater use of public transport
- Car sharing
- Car parking management

Motivations

Individual Benefits

Health

Experts recommend being active for 30 minutes a day, five days a week, which can be made up of shorter bouts of 10 to 15 minutes. Active commuters, those who walk or cycle part or all of their journey, enjoy better fitness levels and better health, in particular from:

- Reduced risk of developing heart disease or stroke
- Preventing high blood pressure
- Helping to control weight
- Maintaining good mental health and minimising stress.

Yet, as a nation we are living increasingly sedentary lives, to the extent that car trips now account for 25% of all journeys under 1 mile as well as being the dominant mode of transport for all trips over 1 mile (*National Travel Survey*). A consequence of such lifestyles is that obesity in the UK has grown 400% in the past 25 years, and 60% of men and 70% of women are now so physically inactive they risk coronary heart disease, diabetes and stroke (*House of Commons Health Committee*).

Cost Savings

The costs of commuting by car can be considerable, and facilitating alternatives such as walking, cycling and public transport patronage can bring direct savings to employees.

While car users are prepared to pay the initial high purchase price, 40% of all motorists are unaware of how much their car costs to run (*RAC*). When adding up the direct costs of motoring including tax, insurance, maintenance and parking it can be an expensive way of commuting, especially for journeys under 5 miles. The average annual household spend on motoring running costs in 2004 was £5,368 (*RAC*). Yet, such costs still fail to account for the indirect costs of congestion, road maintenance, air pollution, road crashes, noise and climate change that we pay for through the tax system and currently amount to an additional 21p per mile (*Institute of Transport Studies*).

Time Savings

The UK has the most extensive traffic congestion in Europe (*CfIT*), and road traffic in Britain is forecast to increase by up to 48% by 2026, based on 1998 figures (*DETR*).

While travel planning measures such as flexi-time, compressed working week and teleworking offer staff greater flexibility in their working day, they also help reduce congestion by staggering arrival and departure times and by freeing up 'lost' commuter time altogether.

Workplace Benefits

Improved Accessibility

Workers in the UK now spend more time commuting to work than their European counterparts (*CfIT*) and the traffic delays they experience cost the country £20bn a year (*CBI*). Reducing congestion in accessing the workplace and the time searching for a parking space can therefore benefit both the employee and employer alike.

Estates Strategy (2004-2014)

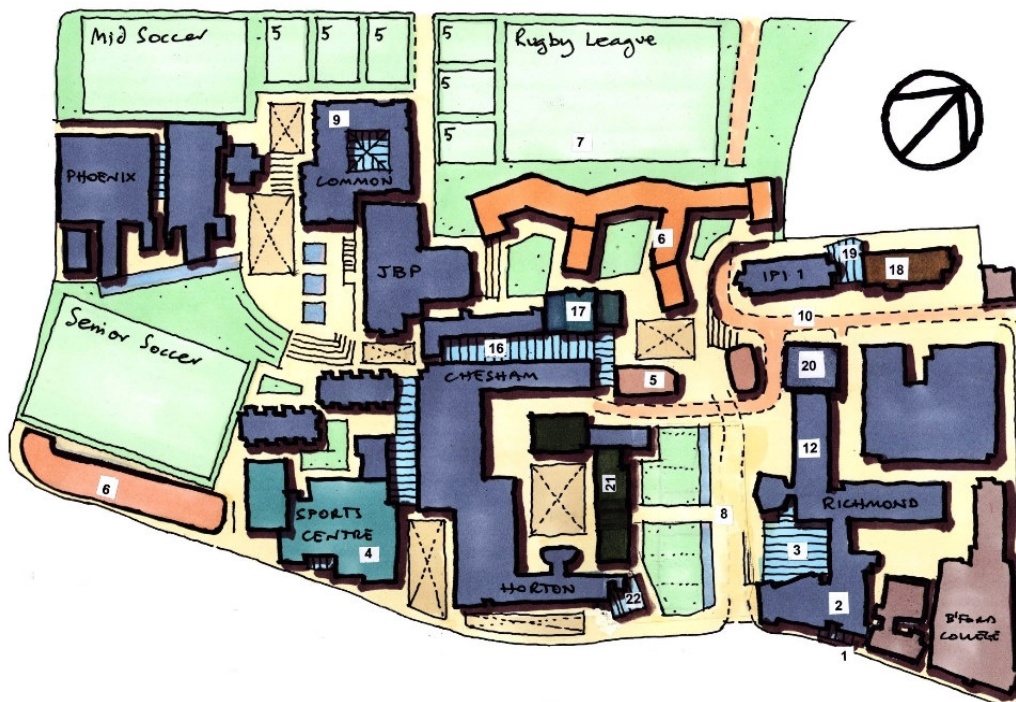
The Estates Strategy includes radical improvements (£75million) to the University with the aim of creating a vibrant City Centre Campus. The strategy has been designed to:

- Attract more students and help recruit/retain staff by investing in new facilities
- Reduce the University footprint and overhead costs by replacing end-of-life buildings
- Create a safe and secure University

Planned projects designed to attract additional students include developing a new School of Health Studies, Cancer Therapeutic Institute, 350-seat Lecture Theatre and new Sports Amenities Centre. Planned projects to reduce our footprint and overhead costs include replacing the existing halls with modern en-suite halls of residence; while planned projects to create a safe and secure University include closing neighbouring roads around the City Centre Campus, installing controlled barrier access points, an underground car park and a new pedestrian boulevard on Richmond Road. For a more detailed overview of planned improvements, see Chart 1 – Estates Strategy.

Naturally, in the absence of a forward-thinking travel plan, any measures to attract additional students, relocate others to the City Centre Campus and the closure of surrounding roads could have a detrimental impact on the local highway network.

CHART 1 – ESTATES STRATEGY



- | | | | |
|---|--|----|---|
| 1 | New Entrance (Admissions and Enquiries) | 10 | Road closures around campus (Longside Lane, Richmond Road, Tumbling Hill Street and Norton Croft) |
| 2 | Renovated Great/Small Hall with Conference Centre | 12 | Cladding Richmond Building |
| 3 | New Atrium replacing Richmond visitor parking | 16 | Glazed links |
| 4 | Extended & Upgraded Sports Centre | 17 | New Language Laboratories & Peace Studies Centre |
| 5 | New Sports Amenities Centre | 18 | Cancer Therapeutic Institute (from Laisteridge Lane) |
| 6 | New Student Accommodation (replacing existing halls of residence) | 19 | New Conference & Lecture Room Facilities |
| 7 | New sports pitches and underground car park (replacing Longside and Kirkstone Halls) | 20 | New School of Health Studies (from Trinity Road) |
| 8 | New pedestrian boulevard (replacing Richmond Road) | 21 | New 350-seat lecture theatre |
| 9 | One-Stop Shop Student Info Centre (refurbished and glazed roof, Communal Building) | 22 | New Atrium Entrance |

Planning Permission

Planning authorities manage future travel to and from sites through regulatory controls, and recent changes in legislation allow planning authorities to require companies to submit a travel plan as part of any planning application for a development or expansion. As the University's planned Estates Strategy will bring more staff, students and visitors to our City Centre Campus, Bradford Metropolitan Council have stipulated the production of a travel plan as part of our planning application process.

Community Benefits

Local Air Quality

The majority of exhaust gases from cars have negative health effects, particularly respiratory effects. While air quality in the UK is slowly improving, many town centre and busy roads still fail to meet national air quality objectives and European limit values for particular (PM¹⁰) and nitrogen oxide (NOx) pollution, of which motor vehicles are the primary source. Motor vehicles currently produce 90% of all UK carbon monoxide, 51% of nitrogen oxides and 41% of volatile organic compounds released into the atmosphere (*Car Free London*) and travel-borne air pollution causes up to 24,000 premature deaths each year (*Committee on the Medical Effect of Air Pollutants*).

Climate Change

The most obvious environmental impact of transport is climate change, of which the principal cause is the gas carbon dioxide (CO₂), produced by the burning of fossil fuels in motor vehicle engines. The average carbon dioxide emissions for different modes of transport in grams per km are: air 330, car 114, bus 77 and rail 73 (*Strategic Rail Authority*).

The Royal Commission on Environmental Pollution states that globally we need to cut greenhouse gas emissions by 60% by 2050 if we are to avoid catastrophic climate change. Yet, road traffic is the fastest growing source of CO₂ (*DETR*) and now accounts for 26% of all UK emissions (*DfT*) with emissions set to rise by 30% by 2010 (*European Environment Agency*).

Noise

While the sound of traffic has improved in rural areas as a result of improvements to tyres and roads, the sound of traffic in towns and cities remains a significant problem. According to the National Railway Forum, around 32 million UK inhabitants are exposed to road noise in excess of 55 decibels, compared with 1 million exposed to rail noise and 4 million to aircraft noise of a similar level.

Resource Use

Cars have a major impact on the environment through their burning of fossil fuels, and energy consumption by road traffic stood at 34% of all UK energy use in 2000 (*DTLR*). Cars also have a significant resource use in terms of manufacturing, from the energy and materials needed to produce fuels and vehicles. The extraction and refining of oil also has a number of significant impacts, especially on the marine environment.

Background

The location, characteristics and facilities of the University have a major influence on how staff, students and visitors travel to and from the University, and the following site overview looks at how these various factors either enable and impede travel patterns.

The University

The University of Bradford received its Royal Charter in 1966, but its origins date back to the 1860s when it was founded as a college for scientific, technical and professional students.

The University now offers over 200 degree courses spread across our eight Academic Schools of:

- Archaeological, Geographical and Environmental Sciences
- Engineering, Design & Technology
- Health Studies
- Informatics
- Life Sciences
- Management
- Social & International Studies
- Lifelong Education and Development

Part-time and short courses are also available through our School of Lifelong Education and Development.

Academic Schools are supported by Corporate & Central Services, which includes departments of Finance, Human Resources, Student Services, Estates & Facilities, Marketing & Corporate Communications, Accommodation & Catering and Learning Support Services.

Student Population and Personnel

Following the development of our traditional disciplines and a major expansion in new courses, the University is currently experiencing a growth in student numbers and now attracts a student population of 9,882 (Student Registry 2003). The student community is supported by a staff population of 3,555 (Equal Opportunities Survey 2002).

The growth in student numbers is expected to continue with Corporate Strategy (2004-09) targets to expand the student population by 12.5% over the next five years.

Key dates

The University divides the academic year into three terms as outlined in Table 1 - Key University Dates. Staff receive an average of seven weeks' holiday (35 days) and students receive an average of 13 weeks' holiday (65 days).

Other key dates include Graduation Days at the end of July (3 days) and start of December (1 day) and Open Days at the start of March (1 day), July (1 day) and October (1 day).

TABLE 1 – KEY UNIVERSITY DATES

Welcome Week	3 rd Week of September
Autumn Term	End of September to mid December
Christmas Holidays	Mid December to mid January
Spring Term	Mid January to mid March
Easter Holidays	Mid March to mid April
Summer Term	Mid April to mid June
Summer Holidays	Mid June to mid September

Campus Information and Access

The University is divided into four campuses - City Centre, School of Health Studies, Laisteridge Lane and the School of Management. In addition, the University has a limited number of sundry properties all within close proximity to the City Centre Campus.

City Centre Campus

The City Centre Campus is situated 300 metres west of the city centre off Great Horton Road. Six of our eight academic schools, the University's five main academic buildings (Richmond, Horton, Chesham, Pemberton and Phoenix) and five of our self-catering halls of residence are all based here.

Access arrangements include:

- Longside Lane (entry and exit access to Kirkstone / Longside Halls, the Communal Building and the University car parks)
- Shearbridge Road (entry and exit access to Shearbridge Green halls of residence)
- Great Horton Road (entry access to controlled area car parking and visitor parking)
- Richmond Road (entry and exit access to University car parks)

Even though the University is within close proximity of the city centre, it is not designated within the city centre, which ends at Smith Street. However, it is designated as a development alongside a public transport corridor.

School of Health Studies Campus

The School of Health Studies Campus is under half a mile away from the City Centre Campus and is based on Trinity Road.

Vehicle access arrangements are limited to Trinity Road (both entry and exit) and the campus is well served by bus due to its proximity (within 400 metres) of a public transport corridor.

Laisteridge Lane Halls of Residence Campus

The Laisteridge Lane Campus is also under half a mile away from the City Centre Campus, and is located off Laisteridge Lane. The campus consists of the majority of our halls of residence and includes the Revis Barber, Dennis Bellamy, and Trinity halls. Additional facilities include a health centre, nursery, conference venue and sports playing pitches.

Vehicle access arrangements are limited to Laisteridge Lane, with entry and exit access at two points. Laisteridge Lane also has good bus links due to its proximity (within 400 metres) of a public transport corridor.

School of Management Campus

The School of Management is just over two miles north from the city centre along Keighley Road. Facilities include academic buildings, conference venue, dedicated management library, a limited number of study bedrooms and a refectory.

Vehicle access arrangements include Keighley Road (entry and exit access) and Emm Lane (entry and exit access). The School of Management Campus is within 400 metres of a public transport corridor and a local train station.

On-site Facilities

The City Centre Campus is well serviced with both on and off site facilities. Most student amenities (the Sports Centre, Library, Computer Centre and Students' Union) are linked by a pedestrian spine traversing the campus. Additional banking services, a bookshop, printing shops, cafés, retail shops and an optician are based on site. The University also enjoys further banking services, numerous cafés and a post office in close proximity to the campus.

Transport Infrastructure

Walking



Walking from the city centre takes between 10-15 minutes from the Travel Interchange or 15-20 minutes from Forster Square Train Station.

Walking from the city centre to the University involves spending a significant part of the journey crossing or waiting to cross busy roads carrying vehicular traffic, which has priority. The journey therefore involves frequent detours and delays to find safe crossing places.

The poor layout and design of safe crossing places to traverse Prince's Street, which are mainly underground, and the run-down nature of some routes or sections of routes out of the city centre, compound fears over personal security.

Cycling

The cycling environment in the vicinity of the University is improving, with new cycle routes along Great Horton Road and Thornton Road allowing cycle access from the East and South.

University cycle parking facilities are limited, but expanding. The University provides a range of cycle parking facilities from long-stay secure lockers to short-stay stands.

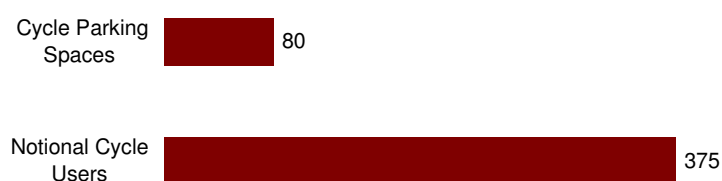


However, the majority lack meaningful signage, cover and security. In addition, shower facilities are available in three buildings on the City Centre Campus.

Cycle parking facilities include Long-Stay Secure Cycle Lockers (14), Short-Stay Sheffield Cycle Stands (62) and Bi-Stander Cycle Stands (4). Cycle parking provision currently falls short of the estimated number of cycle users, see Chart 2 – University Cycle Parking Provision.

Cycle parking coverage is particularly good at the City Centre and School of Health Studies campuses. Facilities could be deemed lacking at both the Laisteridge Lane and School of Management Campuses. No coverage is currently provided at our sundry properties, due to their small size.

CHART 2 - UNIVERSITY CYCLE PARKING PROVISION



Public Transport Accessibility

All of the University's four campuses are situated along or within 400 metres of key public transport corridors.

Bus

The City Centre Campus, Laisteridge Lane Campus and School of Health Studies Campus all take less than 10 minutes to access the city centre, while the School of Management Campus takes approximately 20 minutes.

While no bus service directly connects the University with the city centre, Travel Interchange or Forster Square Station, the existing services are both frequent and quick. Buses include the 610 Shipley – Queensbury 611 Shipley – Buttershaw, 612 Shipley – Buttershaw, 613 Fagley – Buttershaw and 614 Fagley – Mayo Avenue. All buses leave for the University, every 6-9 minutes from Channing Way, outside City Hall, a short walk from the Interchange.

For the School of Management, 662 buses (Bradford – Keighley) leave at regular intervals (every 10 minutes) travelling along Manningham Lane.

An extensive coach service connects most parts of the country to Bradford's Travel Interchange.

UBUS

The UBUS (safety bus) is a free service for students. It takes students to their front door within a two-mile radius of campus and runs every weekday evening during term time. There are 11 timetabled rounds per evening.

A99 UniBus Service

A University bus service (A99) runs between the City Centre Campus and the School of Management Campus, operating hourly Monday to Friday (9 return trips per day) throughout the academic year. It is basically a standard public service calling at all stops between the two sites and caters for an average 7,300 journeys per month.

Rail

Bradford Travel Interchange and Forster Square Station have extensive rail links. Regional services are frequent and inexpensive from Leeds (every 15 minutes), Halifax (every 15 minutes), Keighley (every 30 minutes), Ilkley (every 30 minutes), with a less frequent service from Huddersfield (every hour).

The University's City Centre, School of Health Studies and Laisteridge Lane Campuses are served by both the Travel Interchange and Forster Square Station, which are a less than a mile away.



The School of Management Campus is served by the Frizinghall rail station which is less than 500 metres away (or a five-minute walk).

Staff Company MetroCard Scheme

The University operates a scheme for staff to purchase discounted regional travel passes. The Staff Company MetroCard Scheme enables staff to purchase MetroCards at a 5% discount off the normal annual cost. The MetroCard can be used for travel on West Yorkshires extensive bus and rail network. The scheme is administered by the Personnel Department and currently has 70 subscribers.

Public Transport Information Points

The University, in co-operation with Metro, operate three public transport information points. The information points provide staff, students and visitors with route and timetable information on all local bus and train services. Information points are located at:

- City Centre Campus – Students Union
- School of Management Campus
- School of Management Campus



Cars

Bradford is connected to the national motorway network via the M62 and the M606. The majority of road signs on the major routes into the city have the route to the University indicated by a mortarboard symbol. Congestion in the vicinity of the University during rush hour periods is slight.

Car users arriving from the south, east or west of Bradford mainly use the M62 and the M606. Car users from the north-west mainly use the A650 and car users from the north-east mainly use the A59.

Car Parking Management

The University operates a car parking permit system to control access to our various car parks with the following basic principles:

- Permit fees shall cover costs and any planned improvements to the car parks
- Provision of car parking is detrimental to the environment in that it encourages car travel as a means of commuting to work and study
- High over-subscription of available spaces means that unless a permit holder has a reserved space, a parking permit only gives permission to hunt for a space.

University car parking spaces are separated into four types, which include reserved controlled area parking, reserved general area parking, unreserved controlled area parking and unreserved general area parking.

A variety of permits are on offer covering our various types of applicant - staff, students, visitors, and occasional and disabled drivers. Permit costs therefore vary dependent on the type of applicant and type of car park space.

The University currently issues 2,224 parking permits, car parking permits to spaces are therefore over-subscribed by 50%.

Car Parking Provision

Bradford Metropolitan Council sets maximum car parking standards for a variety of developments, based on national standards as outlined in PPG13. With regard to HE establishments, maximum parking standards are set at 1 per 2 Staff and 1 per 15 FT Students. The maximum standards vary dependent on the level of accessibility, and sites within close proximity to a transport corridor have a reduced maximum of 25%. Visitor and disabled parking spaces are additional to the maximum parking standards.

The University currently provides 1,530 staff and student parking spaces, with an additional 59 spaces for visitors and disabled drivers (see Table 2 – University Car Parking Provision).

TABLE 2 – UNIVERSITY CAR PARKING PROVISION

Campus	Staff Spaces	Student Spaces	Visitor Spaces	Disabled Spaces
City Centre Campus	799	50	31	21
Off Campus	69	0	0	0
Laisteridge Lane	4	169	0	2
School of Management	242	0	0	2
School of Health Studies	197	0	0	3
TOTAL	1311	219	31	28

Using the PPG13 and Bradford Metropolitan Council standards, the University is currently within maximum parameters for parking. However, further analysis reveals a discrepancy in the amount of parking provided for staff and students, with students being particularly under-served (see Table 3 – Car Parking Provision Against Standards).

TABLE 3 – CAR PARKING PROVISION AGAINST STANDARDS

Parking Provision	Totals	Staff	Student
PPG13 Standard ¹	2,294	1,778	516
BMC Standard ²	1,720	1,334	387
Current University Provision	1,530	1,311	219
Difference	-190	-23	-168

¹ PPG13 standard for HE of 1 per 2 Staff and 1 per 15 FT Students

² Bradford Metropolitan Council standard reduced to 75%

Permit charges in comparison with local public car parks are inexpensive. The average annual staff permit (£85 per year) saves around £435 against public car park costs (£520 per year). The average annual student permit (£31 per year) saves around £489 against public car park costs (£520 per year). However, increasing the cost of car park permits is a highly sensitive issue and may result in a campaign of resistance to alternative transportation modes.

Understanding Current Travel Patterns

Introduction

The University conducted both a staff and student travel survey to quantify current travel patterns and to identify travel attitudes. Analysis of returned surveys has aimed to:

- Establish baseline travel habits
- Understand factors influencing habits
- Identify professed willingness and barriers to considering alternatives

Methodology

Staff and student travel surveys were conducted at the University of Bradford in November 2003 and February 2004 respectively. The travel survey was developed by HEEPI in conjunction with the University of Sheffield and Gloucestershire. A total of 335 staff (15%) and 627 students (6%) completed the survey. The questionnaire included a specific section about driving and parking for car users, of which 213 staff and 116 student respondents completed.

The survey responses were checked for duplicates, errors or empty records and a final data set was then analysed. Variations in response rate for individual questions or parts of questions are attributed to some respondents not fully answering each question. The majority of values in the tables and charts are reduced to one decimal place, which may lead to slight discrepancies against the totals, which have been kept at 100%.

The majority of charts and tables include 'notional users', calculated on baseline figures of 3,555 Staff (Equal Opportunities Survey 2002) and 9,882 Students (Registration data, December 2003).

Findings and Analysis

The survey sample was broadly representative of the gender split at the University. In the staff survey the female to male split was 58/42 compared to 54%/46% of the total staff population at Bradford. The female to male split in the student survey was 52/48 compared to 51.5%/48.5% for the total student population. The staff survey was over-represented by academic postholders (39%) compared to the actual staff population (24%). The staff survey was also over-represented by full-time workers (78%) compared to the actual staff population (39%). The majority of the student survey respondents were undergraduates (76%), which is a little lower than the real University population. The majority, 89%, of student respondents are registered full-time, which is broadly in line with a real figure of 77%.

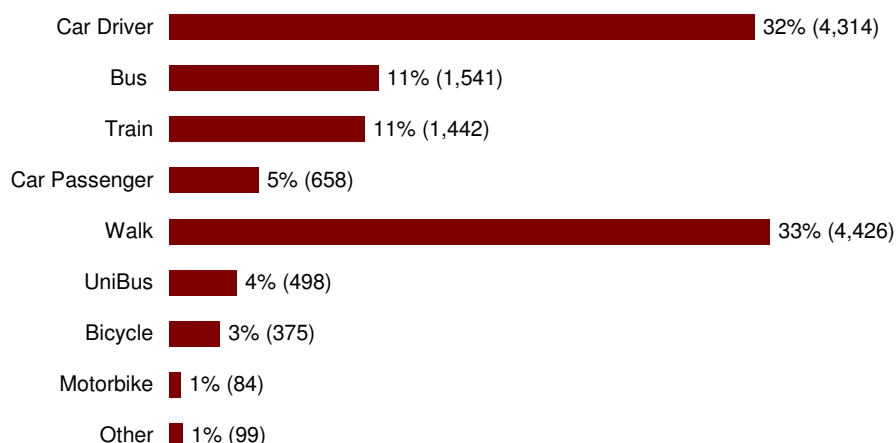
Residence by Postal Address

The majority of staff live in a Bradford postcode (62%), Leeds is the next most common location (15%), then Halifax (7%) and Huddersfield (3%). The most common staff Bradford postcodes are BD13 (10.5% of Bradford total), BD7/16 and 20 (each 9%) and finally BD9 (7%). The majority of students (80%) live at a Bradford postcode followed by Leeds (9%). Two postcodes account for 69% of the Bradford total, BD7 (48%) and BD5 (21%).

Mode of Travel

Car use and walking are the dominant modes of travel, however, the majority of car users are staff while the majority of walkers are students (see Chart 3 – Travel by Mode). Public transport and cycling account for around a quarter of staff and student travel. The majority (69%) of staff travel to work by car as a driver (63%) or as a passenger (6%). Only a quarter (25%) of students drive to the University. The most popular mode of travel amongst students is walking (44%). 20% of staff travel to work by public bus (10%) or train (10%), roughly the same as for students.

CHART 3 - TRAVEL BY MODE

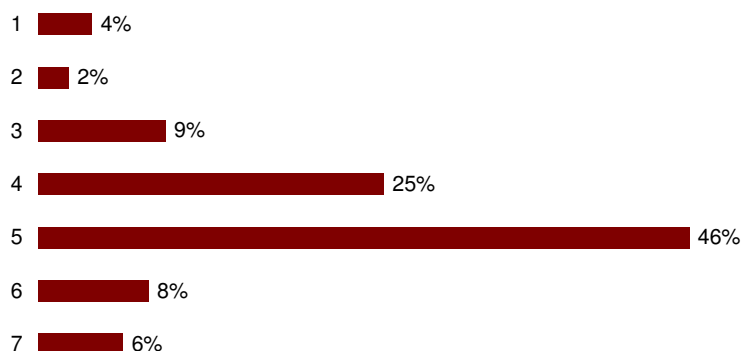


Frequency

60% of the University population travels five or more days a week to the University (see Chart 4 - Travel Frequency). However, there is a marked split between the travel behaviour of staff and students, with the majority of staff (80%) travelling to work 5 or more days a week compared to around half of students.

Based on these figures it is possible to infer an average number of journeys per working weekday during academic terms and, based on the travel frequency of the entire University population, an estimated 12,235 journeys are made each working day.

CHART 4 - TRAVEL FREQUENCY (DAYS PER WEEK)



Distance Travelled

Chart 5 – Distance Travelled, shows that 44% of the combined University community live within 3 miles, with a further 17% living within 3-4 miles. A total of 39% live beyond Bradford (plus 5 miles). Notional populations are shown in brackets.

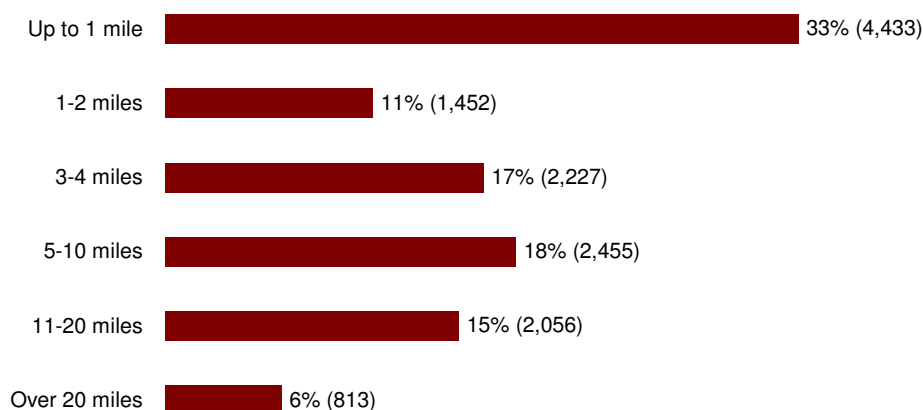
70% of the staff sample travel more than 5 miles from the University, with 35% living more than 10 miles and 9% more than 20 miles. Overall, the average staff one-way commute is 10.5 miles (or 21 miles round-trip).

44% of students live within 1 mile of the University. Even though only 16% live more than 10 miles from the University, overall the average student one-way commute is 5.9 miles (or 11.8 miles round-trip).

The combined staff and student average one-way commute is 7.5 miles (or 15 miles round-trip).

In contrast to the national average distance travelled by UK workers to a fixed place of work, which is currently 8.5 miles (*RAC Key Statistics, 2004*), our combined staff and student one-way commute of 7.5 is marginally better. However, this hides the fact that our staff one-way commute is actually higher than the national average.

CHART 5 - DISTANCE TRAVELLED

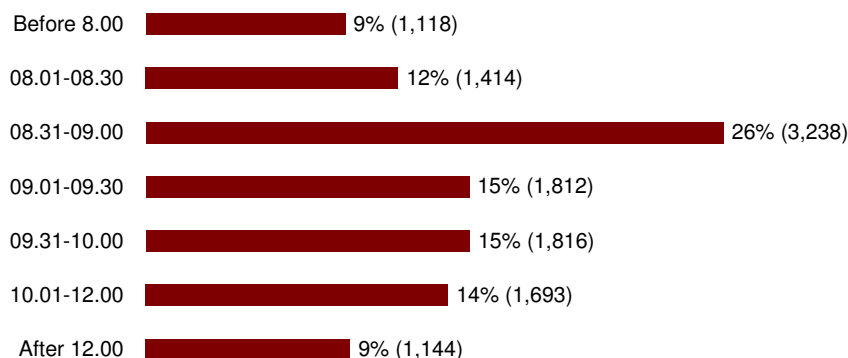


Arrival Times

52% of the University population arrive before 9am. Staff generally arrive earlier than students with two-thirds (68%) arriving at the University before 9.00, with 81% arriving by 9.30. In contrast 39% of students arrive before 9.00 with over half (54%) arriving by 9.30.

Chart 6 – Time of Arrival identifies the combined University population of staff and students against the peak morning period. A notional number of arrivals is also identified in brackets based on the average 12,235 journeys to the University each working weekday.

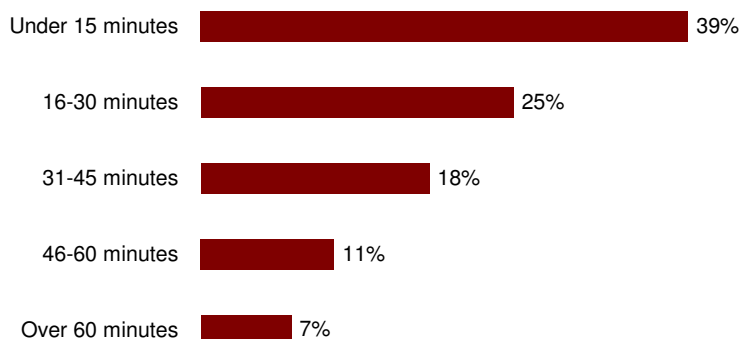
CHART 6 - ARRIVAL TIME



Journey Time

As with any higher education institution it is to be expected that journey times are minimal, and the University of Bradford is no exception with nearly 40% travelling less than 15 minutes (see Chart 7 – Journey Time). However, journey times are significantly different between staff and students, with the majority of staff travelling more than 30 minutes door to door (55%), with a minority lasting more than an hour (10%), while the majority of student travel lasts less than 15 minutes door to door (56%), with only 5% lasting more than 60 minutes.

CHART 7 - JOURNEY TIME



The majority of staff and student journey times home are broadly similar to the journey times to the University. 81% of the staff travelled directly home after work on the day of the survey compared to 70% of students.

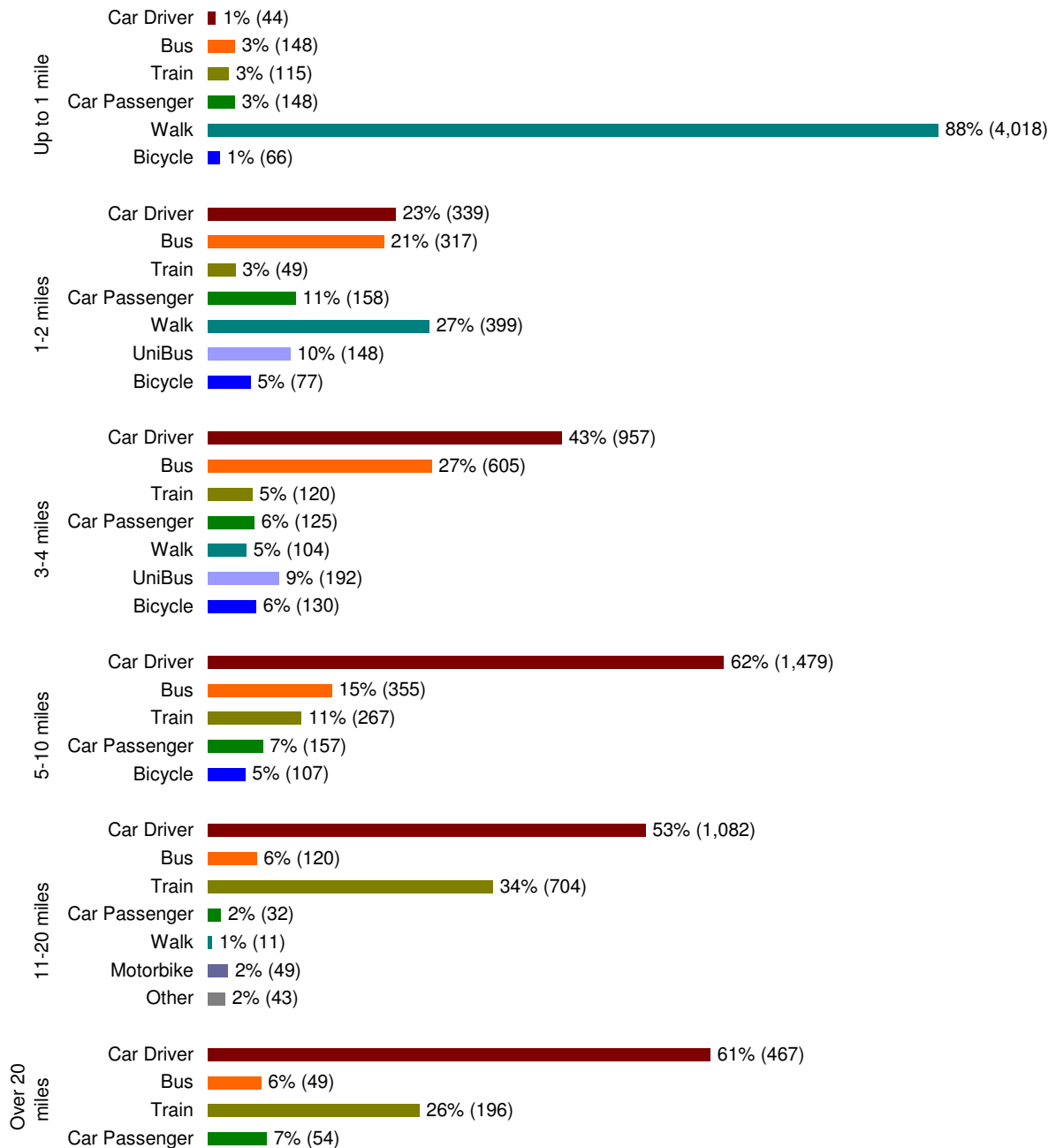
Travel Distance by Mode of Travel

A cross tabulation showing mode of travel by distance for staff and students is shown in Chart 8 – Travel Distance by Mode, with a notional population identified in brackets.

As to be expected, walking is the dominant mode of travel up to 3 miles. However, a significant number of notional car users (400) live within 3 miles. Car use is dominant for all other journeys.

Amongst staff, car driving becomes more dominant by distance although a high proportion travel by car at distances up to 3 miles. Amongst students, car and train become dominant by distance although again a sizeable proportion of students travel by car at distances up to 3 miles.

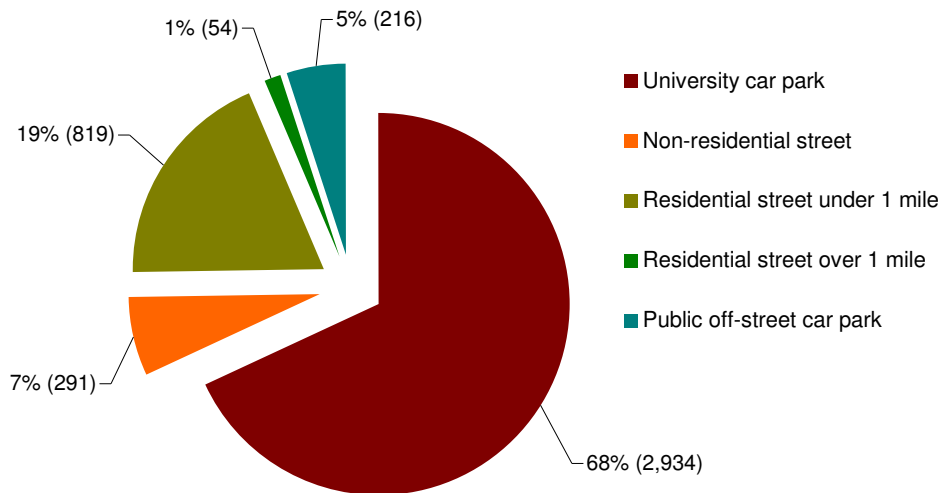
CHART 8 - DISTANCE BY MODE



Car Users - Parking

The majority of University car users (68%) park in a University car park (see Chart 9 – Parking Location). A breakdown between staff and students reveals that 94% of staff who drive park in a University authorised car park, whereas 38% of students park at the University, 35% in the surrounding streets with 10% parking in a public off-street car park.

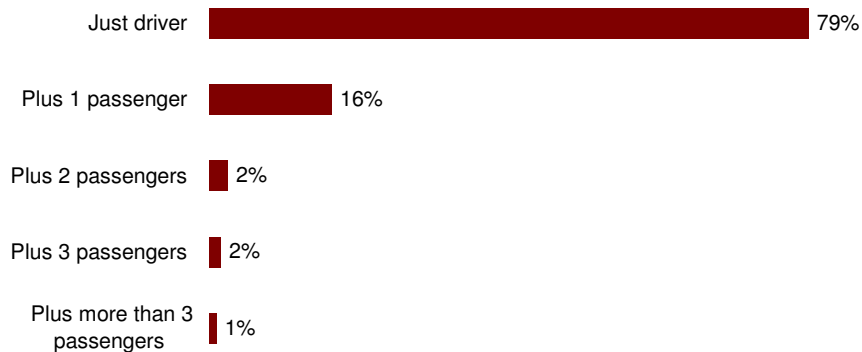
CHART 9 - PARKING LOCATION



Car Users – Numbers in Vehicle

In total 79% of all car drivers drive alone (see Chart 10 – Number in Vehicle). This is made up of 83% of staff and 69% of student lone drivers.

CHART 10 - NUMBER IN VEHICLE



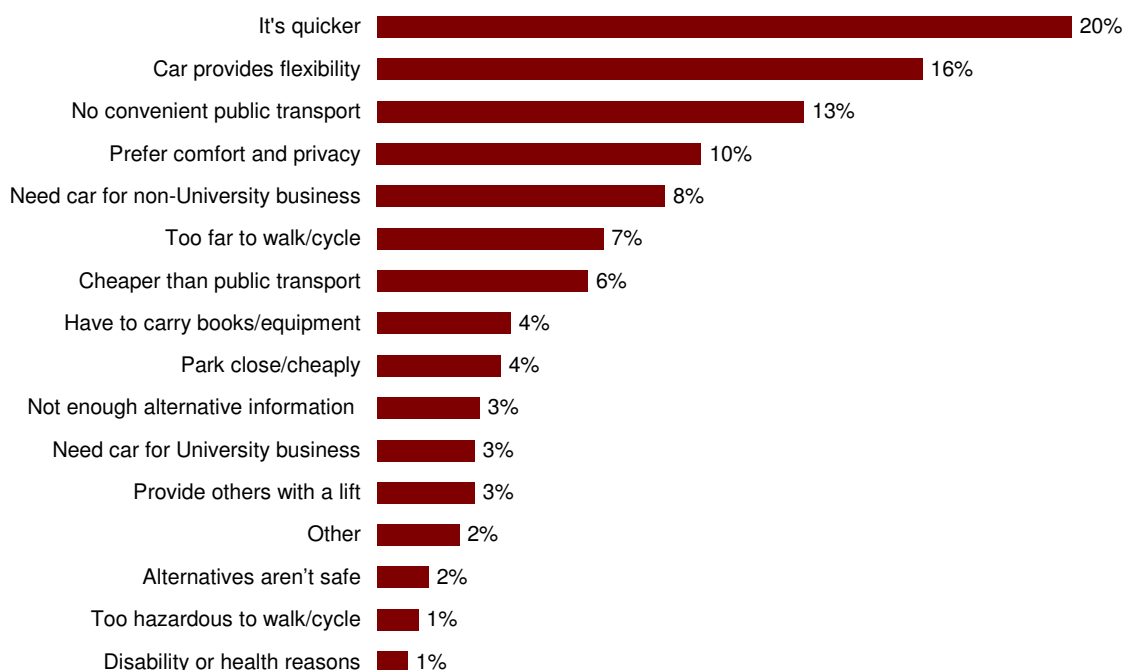
Car Users – Reasons for Car Use

Chart 11 – Reasons for Car Use shows that convenience, speed and flexibility are the most common factors influencing car use. Beyond these factors, needing the car for non-University business such as making drops-offs (at school, for example) tended to increase the likelihood of car use for commuting.

Staff who drive do so for reasons of speed and flexibility and lack of safe alternatives. A significant proportion of staff also stated that they live too far to walk or cycle, which is corroborated by the average one-way staff commute of 10.5 miles.

Students who drive expressed similar reasons to staff but also like the comfort and privacy of the car. In addition, a not-insignificant number of students think they don't have enough information about alternatives to the car.

CHART 11 - REASON'S FOR CAR USE

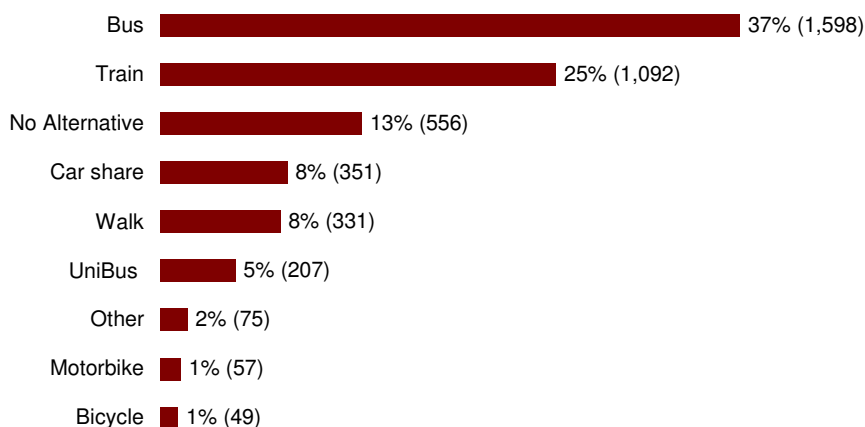


Car Users - Alternatives to Car Use

Most staff and students stated they had a feasible alternative to driving to work on the day of the survey, with only a combined 14% (16% of staff and 9% of students) stating no viable alternative to the car. A breakdown of combined staff and student responses is shown in Chart 12 – Alternatives to Car Use, with a notional number of car users identified in brackets.

Bus and train are the most popular alternatives for both staff and students. For staff the public bus (40%) and train (30%) were the most frequently cited alternatives. For students public bus (34%) and train (19%) were again the most frequent alternatives stated. 13% of students felt they could walk whilst 10% felt they could use the University bus service. Only 6% of staff and 10% of students felt they could car share.

CHART 12 - ALTERNATIVES TO CAR USE



As to be expected respondents' views on alternatives to car use varied by distance travelled.

Walking was seen as the most viable alternative for those respondents living within two miles. Only a very small percentage of respondents felt cycling was a feasible alternative at any distance. Bus use was seen as the most viable alternative between 3 and 10 miles, while rail was seen as the most viable alternative for those living over 11 miles from the University.

Car sharing was seen as a potential alternative for those living between 3 and 10 miles, although it should be noted that it received little support from respondents.

The majority of respondents expressing no alternative options lived 5 to 20 miles from the University.

Public Transport Users – Service Used

Staff and students use a wide number of bus and train services.

In terms of rail the Airedale, Calderdale and Leeds-Bradford lines were the most common. For buses the 662, 576 and 620 services were the most common.

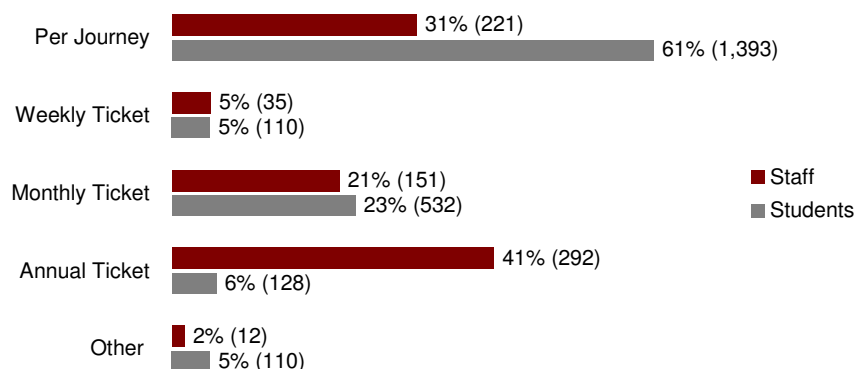
Nearly a third of staff and around a fifth of students used a different service on the return journey from the University.

Public Transport Users – Method of Payment

Chart 13 – Method of Payment shows that 41% of staff bus and rail users have an annual season ticket, but significant proportions pay per journey (31%) and by monthly saver travel tickets (21%). With only 170 staff currently joined to the Company MetroCard Scheme, we can infer that potentially 500 additional staff public transport users are failing to take up this benefit.

The majority of students travelling by public transport pay per journey (61%) with a quarter purchasing monthly saver travel tickets. Consequently, we can infer that potentially over 1,400 students are failing to take up the benefit of a Student Plus MetroCard.

CHART 13 - METHOD OF PAYMENT



Perceptions of Travel Options

A large majority of comments fell under four broad categories:

1. Security and safety
2. Parking
3. Public transport cost, reliability and frequency
4. Cycling

Many staff and students feel unsafe and anxious when travelling to and from the campus, and typical comments included:

'The reason why I travel by car is that it's not safe on Trinity Road for a young person on their own'

'If finishing work after say 9pm there are a lot of undesirables hanging about'

'Better public transport and feeling safe in Bradford Interchange might make me consider public transport'

Many staff and students are unhappy with current car parking provision at Bradford:

'There should be priority for staff parking allocation over student parking allocation'

'I work in the community and spent 40 minutes on two occasions last week, trying to get back into work'

'The University needs to consider making more car parking spaces available. The car park I use has now been built on and no alternative provided. It appears that the University is willing to take money for parking permits but not to take any responsibility for provision'

'Parking should be guaranteed for those of us who work here full or part-time. Students should be discouraged from using cars, unless they live a long distance away and their journey should be registered'

Bus and train services in Bradford are experienced or perceived as slow, expensive, unreliable, infrequent

'There should be a bus from Forster Square to University to coincide with arrival of trains between 8.30-9.30 in the morning and 5.00pm – 6.00 pm evening'

'Cheaper bus tickets will result in me taking the bus more often'

'I would take the A99 bus service if it were cheaper. It's currently £0.90p each way. That's £9.00 a week on travel!'

'The University should pay for the A99 service between campuses, which most other Universities do'

'University ought to introduce a MetroCard scheme that's actually cheaper than buying it from the bus station. Otherwise there's no point in having a scheme!'

'More frequent buses to the centre of Bradford would make travelling on the train more viable'

Cycling is seen as dangerous and impractical in Bradford:

'I cycle every day. Over the last year have been shouted at, spat at and had footballs kicked at me whilst travelling'

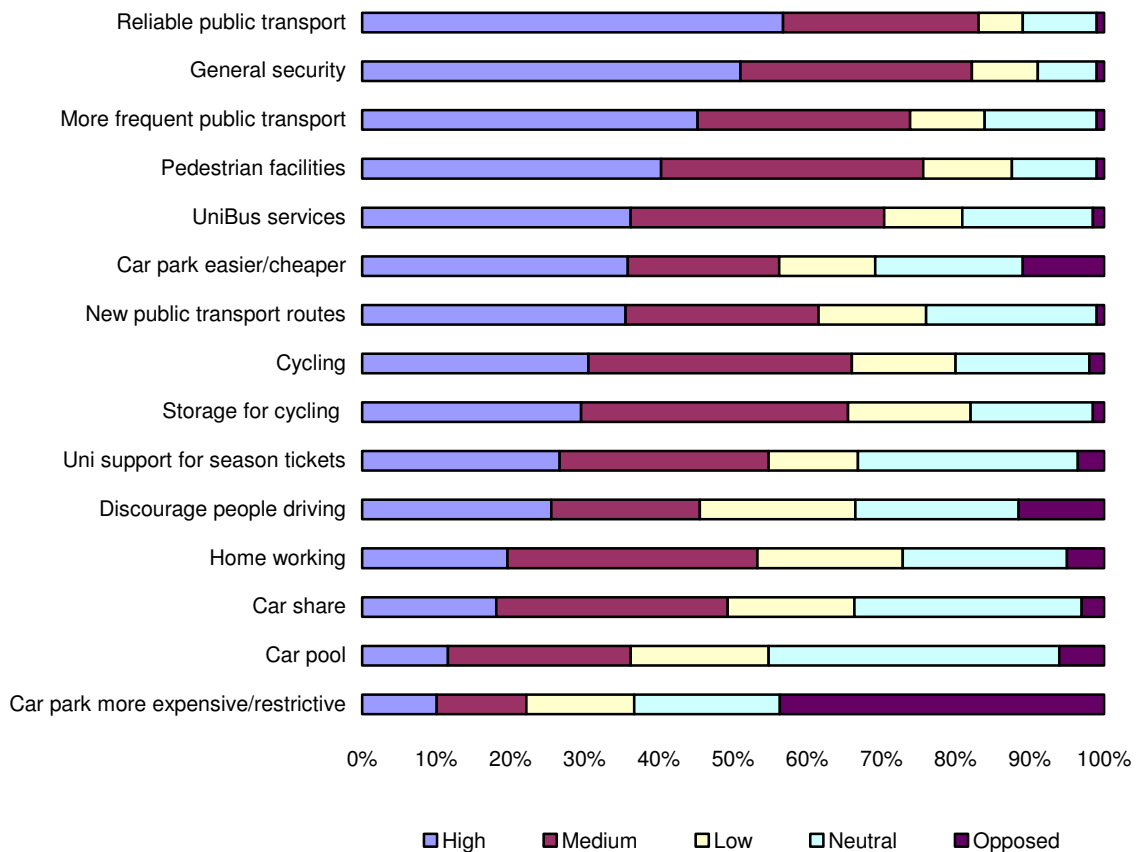
'People commute long distances to the University and the Bradford area is very hilly. Cycling is practical for only a small minority of staff'

Travel Policy Priorities

A set of possible travel policy options were presented in the survey, and respondents were asked to indicate their priority (please note that respondents were not restricted in the number of policy options they could show as high priority). The responses to the different policy options are shown in Chart 14 – Travel Policy Priorities.

Staff and students are agreed that security and public transport frequency and reliability are the highest priority transport options.

CHART 14 - TRAVEL POLICY PRIORITIES



Travel Policy Opposition

Car parking provision is very often a contentious issue, and both staff and students are most opposed to the options of making parking and driving more difficult.

Interestingly, and in contradiction to the opposition of making parking and driving more difficult, both staff and students are also opposed to making car parking easier or cheaper.

The policy alternatives that received the highest opposition are the same for staff and students albeit with different levels of opposition (percentages shown respectively):

1. More restrictive and expensive parking (43 and 44)
2. Car parking made easier and cheaper (17 and 5)
3. Policies to discourage people from driving to work (12 and 11)

Understanding Emissions

Based on notional modal users, the average number of journeys per day and average distance travelled, we can estimate the annual environmental impact of car, rail and bus users. The following three charts identify estimated emissions of Carbon Dioxide (CO₂), Nitrogen Oxides (NO_x) and Particulates (PM₁₀), expressed in tonnes.

CHART 15 - NOTIONAL CO₂ EMISSIONS (TONNES)



*Car conversion factor 0.2615 kg/mile
Rail conversion factor 0.116 kg/mile
Bus conversion factor 0.09 kg/mile
(Source: Tyndall Centre for Climate Research)*

CHART 16 - NOTIONAL NO_x EMISSIONS (TONNES)



*Car conversion factor 0.001585 kg/mile
Rail conversion factor N/A
Bus conversion factor 0.0007 kg/mile
(Source: Tyndall Centre for Climate Research)*

CHART 17 - NOTIONAL PM₁₀ EMISSIONS (TONNES)

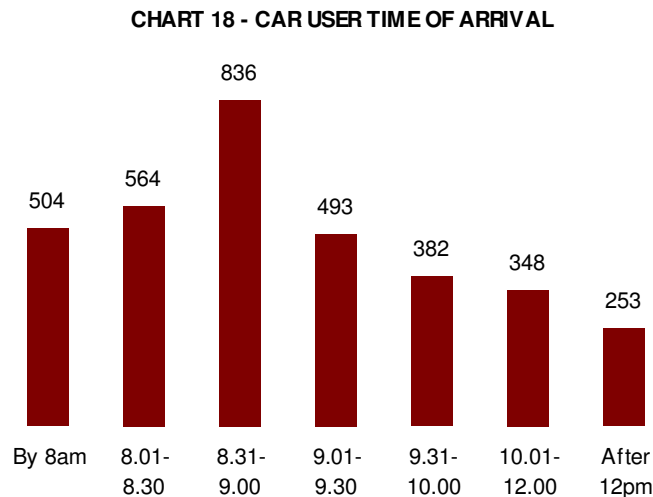


*Car conversion factor 0.0002 kg/mile
Rail conversion factor N/A
Bus conversion factor 0.00003 kg/mile
(Source: Tyndall Centre for Climate Research)*

Understanding Site Traffic Flow

Arrival Time

Given the arrival time data, it is possible to infer the estimated arrival time of car users to the University as a whole. In total an estimated 1,900 car users arrive prior to 9am of which a significant amount (836) arrive between 8.31 and 9.00. Car arrivals quickly decrease over the next three hours.



July 2002 Origin Destination Survey

An origin destination survey was carried out by WSP, December 2001, to ascertain the number of vehicles accessing the highway network surrounding the City Centre Campus.

The survey was conducted at six sites around the City Centre Campus and provided information on the number of vehicles passing through the area. Details are provided in a separate report – *Bradford City Centre Review of Transport Opportunities in the Western Sector of the City*.

Future Trends and Implications

Growth in Student Numbers

As outlined in the University's Corporate Strategy 2004-09, the University is seeking to increase the student population by 12.5% over the next five years. Naturally this increase will alter current travel patterns and our environmental impact in a number of ways, including the number of users by mode, the numbers arriving during peak periods and our emissions of CO₂, NO_x and PM₁₀.

Implications for Mode of Travel

In 2009, assuming no change in the proportion of mode of travel, the growth in student numbers will result in an increase of 531 walkers, 274 public transport users and 259 car drivers (see Table 4 – Users by Mode 2009).

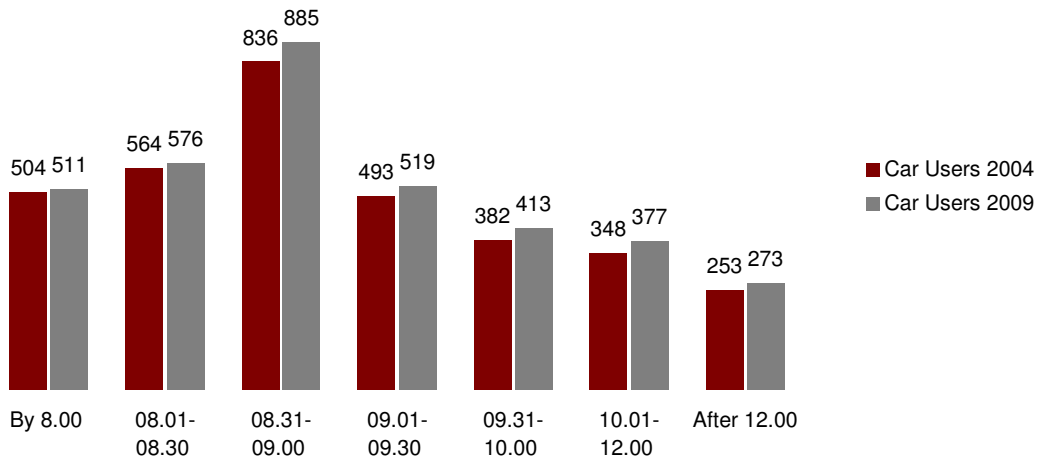
TABLE 4 – USERS BY MODE 2009

Travel Mode	Staff Users	Student Users	TOTAL 2004	Student Users 2009	Difference 2009
Car	2,239	2,075	4,314	2,334	+259
Bus	355	1,186	1,541	1,334	+148
Train	355	1,087	1,442	1,223	+136
Car Passenger	213	445	658	501	+56
Walk	177	4,249	4,426	4,780	+531
UniBUS	4	494	498	556	+62
Bicycle	177	198	375	223	+25
Motorbike	35	49	84	55	+6
Other	0	99	99	111	+12

Implications for Site Traffic Flow

In 2009, assuming no change in the proportion of mode of travel and in arrival time, the growth in student numbers will result in only a slight increase in traffic flow. The 8.31-9.00 arrival time will see the greatest increase with an additional 49 car drivers arriving at the University's various campuses (see Chart 19 – Car Users' Time of Arrival 2009).

CHART 19 - CAR USERS TIME OF ARRIVAL 2009



Implications for Emissions

In 2009, assuming no change in the proportion of mode of travel, the growth in student numbers will result in a slight increase in emissions.

CHART 20 - NOTIONAL CO₂ EMISSIONS (TONNES) 2009



CHART 21 - NOTIONAL NO_x EMISSIONS (TONNES) 2009

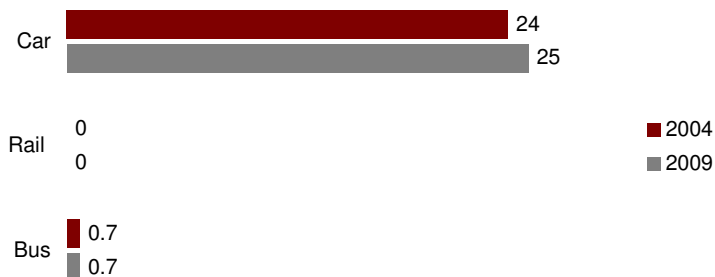
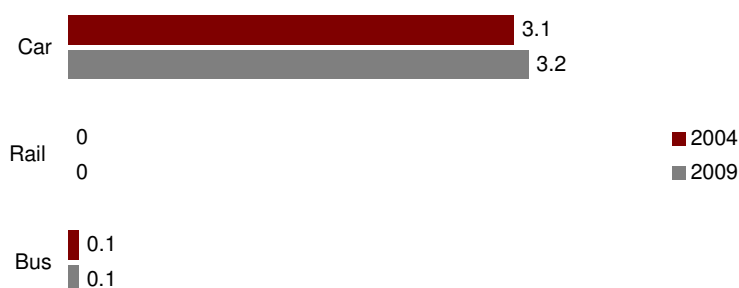


CHART 22 - NOTIONAL PM10 EMISSIONS (TONNES) 2009



Campus Reorganisation

Cancer Therapeutic Institute

It is envisaged that the current plan to relocate the Cancer Therapeutics Institute from Laisteridge Lane to the City Centre Campus will have minimal impact on travel behaviour. The relocation of the Institute will result in 28 staff and 12 students changing their travel destination. There will also be six additional staff appointments, bringing the total change to 46 people.

School of Health Studies

Provisional plans to relocate the School of Health Studies from Trinity Road to the City Centre Campus will have a moderate impact on travel behaviour. The relocation will result in 132 staff and 1,903 students changing their travel destination. However, the impact of this change is minimised as 49% of the students study part-time. In addition, the need to travel to University is further negated as the majority of students study off-site with outside health practitioners.

Objective 1 - Reduce the Need to Travel

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Introduce home working practices	M	M	N/A	Develop home-working / tele-working policy	Estates / Personnel		July 2006
				Promote home-working / tele-working scheme with Academic Schools and University employees	Estates / Personnel		July 2006
Publicise work-life balance practices	M	M	N/A	Promote existing Annualised Hours Scheme	Estates / Personnel		Dec 2005
				Promote existing Flexible Working Scheme	Estates / Personnel		Dec 2005

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Objective 2 - Manage Business Travel

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Improve business travel management	N/A	N/A	N/A	Review and revise business travel policy with particular attention to loan vehicle scheme and use of vehicles under 130 miles	Purchasing Services		Oct 2004
				Review and revise business travel contracts emphasising the provision of monitoring data	Purchasing Services		Oct 2004
Increase use of video conferencing facilities	N/A	N/A	N/A	Promote the use of our video conferencing facilities with academic schools and departments	Estates / Learning Support Services		Dec 2005

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Objective 3 - Encourage Public Transport Use

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Increase UniBus service patronage by 10% by 2009 <i>(45430 trips baseline, 2004)</i>	H	M	H	Re-tender service specifying improved peak-hour frequency, use of Company / Student MetroCards, and penalties for late arrival	Estates / School of Management		July 2005
				Include requirement for morning and evening peak-time connection to traing stations in re-tendering of UniBus service	Estates / School of Management		July 2005
Increase public transport patronage as usual mode of travel to 24.7% by 2009 <i>(22.2% baseline, 2004)</i>	N/A	N/A	N/A	In conjunction with Metro develop an accessibility map of public transport journey times for bus use within Bradford	Estates & Facilities		May 2004
				Review and improve the provision of public transport information points on our campuses	Estates & Facilities		July 2005
				Promote Metro Standard Messaging Service (SMS) 'next bus/train' service	Estates & Facilities		July 2005
				Liaise with Metro on installation of digital timetables at bus shelters around city campus	Estates & Facilities		July 2005
				Liaise with Metro to improve public transport infrastructure (bus stops) adjacent to University campuses	Estates & Facilities		July 2005
Increase employee users of Company MetroCard Scheme by 10% by 2009 <i>(70 baseline, 2004)</i>	N	N	N	Work in conjunction with Metro to achieve 15% cost reduction in Company MetroCard Scheme	Estates / Personnel		Oct 2004
				Develop Company MetroCard Scheme Leaflet for employees	Estates & Facilities		July 2005
				Hold additional application rounds in December and March	Personnel	£700	Nov 2004

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Objective 4 - Encourage Walking and Cycling

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Increase cycling as usual mode of travel to 3.8% by 2009 <i>(2.8% baseline, 2004)</i>	M	M	M	Review University provision of cycle parking	Estates & Facilities		Oct 2004
				Develop cycle parking provision policy for developments, redevelopments and expansions	Estates & Facilities		Oct 2004
				Install new long stay cycle parking for the JBPL and Phoenix Buildings	UNIBBUG	£10,000	July 2005
				Install new short stay cycle parking for the Communal, Pemberton and Emm Lane Buildings	Estates & Facilities		July 2005
				Promote availability of shower/changing facilities at the Richmond Building, West End Building and Sports Centre	Estates & Facilities		Oct 2004
				Include within Sustainable Construction Policy requirement for shower/changing facilities within all future developments	Estates & Facilities		Oct 2004
Increase walking as usual mode of travel to 33.9% by 2009 <i>(32.9% baseline, 2004)</i>	M	M	M	Improve pedestrian security by introducing vehicle speed limit and designation pedestrian priority on all site roads	Estates & Facilities		July 2005
				Improve pedestrian security by upgrading / extending CCTV system	Security		July 2005
				Improve pedestrian security by raising awareness of security arrangements	Security		July 2005
				Work with Bradford Metropolitan Council to identify key routes that are of importance to pedestrians and seek to improve routes in terms of signage, convenience, safety and enhanced crossing rights at junctions	Estates & Facilities		July 2005
				Produce 'Walking to University' leaflet promoting the health benefits of walking to work and study	Estates & Facilities	£300	April 2005

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Objective 5 - Promote Sustainable Travel Choices

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Promote environment levy travel fund	N/A	N/A	N/A	Hold two annual application rounds for travel projects to be supported by the Environment Levy Travel Fund	Environmental Strategy Group	£11,000	Jan 04 / May 05
Conduct SMART MOVE travel month	N/A	N/A	N/A	Deliver theme month on SMART MOVE travel to raise awareness of sustainable travel choices	Estates & Facilities	£2,000	Oct 2004
Develop SMART MOVE travel intranet site	N/A	N/A	N/A	Develop travel section on University intranet providing further information on all travel initiatives	Estates & Facilities		July 2005
Produce SMART MOVE travel guide	N/A	N/A	N/A	Develop university travel guide including information on walking/cycling, public transport and other key travel measures from the SMART MOVE Travel Plan	Estates & Facilities	£3,000	Oct 2004

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Objective 6 - Manage Motor Vehicle Use

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Reduce car use as usual mode of travel to 30.1% <i>(32.1% baseline, 2004)</i>	O	O	O	Review University car parking provision against UDP standards	Estates & Facilities		Oct 2004
				Develop car parking provision policy for all future developments, redevelopments and expansions	Estates & Facilities		Oct 2004
				Develop two-mile or 30-minute public transport journey exclusion zone for car parking permit applications	Estates & Facilities		Oct 2004
				Employ additional car parking attendants to improve security and management of car parks	Estates & Facilities		July 2005
				Promote car parking regulations	Estates & Facilities		Dec 2004
				Collate various car parking policies, information and informal working practices into one clear Car Parking Management Policy	Estates & Facilities		Oct 2004
				Review potential for employer "buy back" of employee parking permits conditional on the take-up of a Company MetroCard	Estates / Personnel		July 2005
Improve car park security	H	H	H	Seek the closure of surrounding City Centre Campus roads with Bradford MDC with access to car parks controlled by barrier system	Estates & Facilities		July 2005
Develop car sharing scheme and target 150 registered users by 2009	M	N	M	Seek the development of joint Car Sharing Scheme in conjunction with Bradford MDC, Bradford NHS and Bradford College	Estates & Facilities	£750	July 2005
Reduce demand for visitor car parking	N/A	N/A	N/A	Review potential for visitor charging (excluding Open Days and Graduation Days)	Estates & Facilities		July 2005

Target Measures	Priority			Actions	Responsibility	Resources	Schedule
	Combined	Staff	Students				
Manage visitor and delivery vehicles	N/A	N/A	N/A	Review visitor, supplier and contractor frequencies and parking arrangements	Estates & Facilities		July 2005
Green car user driving techniques	N/A	N/A	N/A	Produce 'tips for greening driving' leaflet outlining environmentally friendly driving techniques	Estates & Facilities	£300	July 2005
Green fleet management operations	N/A	N/A	N/A	Conduct a full review of fleet management including vehicles, activities, drivers and fuel use	Estates & Facilities		July 2005
				Identify the need for Improved / environmentally friendly driver training of fleet drivers	Estates & Facilities		July 2005

Priority Key: H = High, M = Medium, L = Low, N = Neutral, O = Opposed, N/A = Not Applicable

Organising For Success

Implementation of the **SMART MOVE** Travel Plan will be achieved by integrating travel management into the University's existing environmental management structures, with the Environment Manager co-ordinating day-to-day management and the Environmental Strategy Group providing long-term direction.

Environmental Strategy Group

The Environmental Strategy Group (ESG) is a sub-committee of the Building, Land and Estates Strategy Committee (BLESS). Members of the group include senior management, academic, environmental and Student Union representatives.

The group is responsible for providing strategic direction on environmental policy and for supporting the Environment Manager in the delivery of environmental initiatives, now including the **SMART MOVE** Travel Plan.

The group has overall responsibility for approving travel initiatives and for fostering a wider sense of travel ownership and involvement at senior management level.

Environment Manager

The Environment Manager is responsible for the day-to-day management and co-ordination of environmental initiatives, now including the implementation of the **SMART MOVE** Travel Plan.

In addition, the Environment Manager is responsible for communication and promotion of travel choices within the University and for external communications with organisations engaged in the **SMART MOVE** Travel Plan (Bradford Metropolitan Council and Metro). The Environment Manager will also act as a contact point for both management and staff in general.

Environmental Management System

In order to achieve the successful implementation, co-ordination and monitoring of the **SMART MOVE** Travel Plan the University will embed, as appropriate, the various travel plan measures within our environmental management system, with particular attention to defining roles and responsibilities and operational procedures.

Monitoring For Success

The recent travel survey has provided reliable baseline information on travel behaviour, and the benchmarks obtained are vital for measuring future changes in travel patterns.

Repeat surveys are an important element of implementing the **SMART MOVE** Travel Plan and will enable the University to make direct comparisons to the existing benchmarks.

A full repeat survey will be conducted in 2009, with smaller surveys that focus exclusively on current commuting patterns conducted in each intervening year.

Intervening surveys will be in line with METRO's annual snapshot 'travel to work' survey.

Results of intervening and full surveys will be communicated to senior management, staff and students each year. The local community and other key stakeholders will receive the results through the University's annual environmental performance statement.

CONTACT DETAILS:

University of Bradford
Estates & Facilities
Richmond Road
Bradford
BD7 1DP

Tel: 01274 233001
Email: environment@bradford.ac.uk