University of Worcester Travel Plan – 2022 Update

Client:	University of Worcester	Version:	B
Project No:	06402	Author:	MW
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1 Introduction

1.1 Overview

1.1.1 PJA has been commissioned by the University of Worcester (UoW) to provide an update to the University's existing Travel Plan.

1.2 Sustainable Transport Strategy

1.2.1 PJA produced a Travel Plan for the UoW in 2013, providing a sustainable transport strategy for the site and then produced Technical Note updates in 2016 and 2019 to update the Travel Plan to reflect updated staff and student survey data, and include the expanded University portfolio.

1.2.2 This note has been prepared to update the previous note in light of new staff and student survey data for 2020/21 and 2021/22.

1.3 Document Structure

1.3.1 The remainder of the document is divided into the following sections:

- Section 2 compares the historical travel situation at the main campus sites with recent staff travel survey data;

- Section 3 compares the historical travel situation at the main campus sites with recent student travel survey data;

- Section 4 compares the historical inter-site travel situation with recent travel survey data;

- Section 5 compares historical carbon emissions information with the recent survey data;

- Section 6 summarises the latest University of Worcester Mobility Plan;

- Section 7 provides a commentary on progress towards the targets outlined in the previous Travel Plan;

- Section 8 investigates potential remedial measures to improve progress towards targets; and

- Section 9 summarises and concludes the report.

2   Staff Travel

2.1   Overview

2.1.1   The 2021/22 staff travel survey received a total of 502 responses representing a response rate of just under 50%. In the 2020/21 survey, a total of 269 responses were received, with a response rate of under 20%

2.1.2   It should be noted that since 2016, a small number of questions have been altered to enable multiple answers to be chosen, rather than single answers. However, the vast majority of questions in the survey have remained the same throughout.

COVID-19

2.1.3   In the most recent surveys, staff and students were asked 'Has Covid 19 changed the way you travel to campus?'. The results for staff members in both the 2020/21 and 2021/22 surveys are shown in Table 1.

Table 1: Has Covid 19 Changed Commuting Behaviours – Staff

	2020/21	2021/22
Yes – have changed travel mode	20%	18%
No – have not changed travel mode	64%	82%
I have not travelled to campus since Covid-19	16%	1%

2.1.4   The results indicate that:

- The majority of those travelling to campus have not changed their mode of travel due to Covid-19; and
- A large number of staff members had not returned to campus during the 2020/21 survey period, but the vast majority had done so by the 2021/22 survey period.

Mode Share

2.1.5   The main mode of travel used by staff to access the University has been identified from historical data (2009-2012) extracted from the 2013-2018 travel plan, as well as recent survey data (2013, and 2015-2022) provided by the UoW. This information is outlined in Table 2:

Table 2: Main Mode of Travel to Work – Staff

Mode of Travel	Year								
	2009	2011	2013	2015	2016	2017	2018/19	2020/21	2021/22
Bus	4%	4%	10%	3%	3%	7%	4%	3%	2%
Bicycle	12%	12%	5%	7%	9%	9%	9%	9%	7%
On Foot	18%	19%	18%	23%	20%	21%	17%	16%	17%
Train	2%	5%	5%	5%	5%	5%	4%	3%	4%
Motorbike	0%	0%	-	0%	0%	0%	0%	1%	0%
Single Occupancy Vehicle (SOV)	55%	53%	54%	58%	63%	57%	66%	70%	70%
Car with others	4%	3%	8%	1%	6%	7%	4%	4%	7%
Other (including combination)	4%	4%	1%	2%	-	-	-	-	-

2.1.6   Table 2 shows:

- The proportion of staff travelling by single occupancy vehicle has increased, with the current level the highest during the study period, and has plateaued at 70%;

- The proportion of staff travelling on foot has plateaued at 16%-17% since 2019;

- The proportion of staff cycling has decreased in 2021/22 to 7%, but remained at 9% between 2016 and 2020/21;

- The number of staff who travel by bus has decreased to the lowest of the whole study period at 2% from a peak of 10% in 2013; and

- The number of staff car sharing has increased to 7% in 2021/22, after dropping to 4% in 2018/19 and 2020/21.

2.1.7   Information regarding the distance travelled by staff in single occupancy vehicles (SOVs) is summarised in Table 2. This has been calculated based on individual responses to the question: "What is the approximate distance in miles from your home address to the campus where you work?".

Table 3: Distance Travelled in Single Occupancy Vehicles – Staff

Distance Travelled	Year						
	2013	2015	2016	2017	2018/19	2020/21	2021/22
Up to 1 mile	1%	3%	1%	1%	3%	1%	2%
Over 1 mile and up to 2 miles	4%	13%	6%	4%	3%	4%	3%
Over 2 miles and up to 4 miles	12%	14%	8%	15%	13%	11%	13%
Over 4 miles and up to 10 miles	27%	21%	26%	26%	25%	33%	28%
Over 10 miles and up to 20 miles	22%	22%	22%	20%	24%	23%	23%
Over 20 miles and up to 50 miles	29%	23%	32%	30%	28%	22%	26%
Over 50 miles	5%	4%	4%	4%	5%	4%	4%

2.1.8   Table 3 shows:

- Since the last update in 2018/19, there has been no significant changes in the percentage of staff making trips within 2 miles in single occupancy vehicles;

- There was an increase in staff travelling between 4 and 10 miles in single occupancy vehicles, reaching a high of 33% in 2020/21; and

- The percentage of staff driving between 20 and 50 miles has fluctuated, having dropped from 32% to 22% between 2016 and 2020/21, but rising back to 26% in 2021/22.

2.1.9   Table 4 outlines the reasons for staff travelling to work by private car:

Table 4: Reasons for Undertaking Journeys to University by Car – Staff

Reason	2015	2018/19	2020/21	2021/22
Convenience	20%	12%	15%	15%
Lack of an alternative/public transport not available	14%	12%	15%	9%
Health reasons	1%	3%	3%	3%
Sharing a lift	2%	-	-	-
Dropping off / collecting children	17%	19%	18%	21%
Cost saving	2%	3%	1%	3%
Time saving	21%	15%	15%	15%
Car essential to perform job	12%	-	-	-
Personal Security	-	1%	1%	2%
Distance from home (too far to walk/cycle)	-	28%	27%	25%
Other	12%	9%	5%	7%

2.1.10   Table 4 indicates:

- Time saving and personal responsibilities such as dropping off children have remained popular reasons why staff travel to University by car; and

- All surveys since 2018/19 indicate that the main reason why staff choose to travel to work by car is due to distance from home.

2.1.11   Table 5 details a number of measures designed to encourage staff to use public transport, with the percentage figure representing the most likely to encourage this modal shift.

Table 5: Measures to Encourage more Sustainable Travel to Work - Staff

Reason	2015	2018/19	2020/21	2021/22
More direct bus routes	20%	16%	19%	22%
More frequent bus service	18%	20%	20%	24%
Closer train station to home	15%	19%	15%	18%
Closer train station to work	12%	13%	15%	12%
Interest free loan to purchase season tickets	3%	-	-	-
Cheaper tickets	23%	24%	18%	23%
More flexible tickets	8%	10%	8%	10%
Safer cycle routes	15%	27%	24%	27%
Refresher/proficiency cycle training	-	4%	2%	4%
Safer footpaths	5%	9%	8%	7%
I am happy with the way I travel to work	52%	52%	53%	52%
Other	10%	-	-	-

2.1.12   Table 5 shows:

- The most popular measure for encouraging sustainable travel to work is safer cycle routes, with 27% of staff choosing this answer in 2021/22. This decreased to 24% in the 2020/21 survey, but rose back to 27% in 2021/22 and matched the 2018/19 survey.

- The proportion of staff who are happy with the way they travel to work remained constant at 52%, with a slight increase to 53% in the 2020/21 survey.

Parking Permit Holders

2.1.13   Parking permit data has been collected by the University which provides an accurate record of those who have paid for parking at the university. This data indicates that there are currently

802 who own a parking permit, in addition to 32 associate staff members who also own a permit. This is down from 972 in the previous update.

2.1.14   There are many who do not own a permit and Table 6 summarises the parking locations of these staff members:

Table 6: Parking Locations - Non-Permit Holders

Location	2018/19	2020/21	2021/22
Campus short stay car park	10%	17%	13%
Campus long stay car park	49%	51%	57%
Free parking on nearby street	29%	21%	25%
Public pay & display car park (non-University)	12%	11%	5%

2.1.15   Table 6 indicates that the majority of non-permit holders park in the campus long-stay car park, which has increased from 49% in the 2018/19 survey to 57% in the 2021/22 survey. There are also a large number who park on nearby streets, which has decreased from 29% in the 2018/19 survey to 25% in the 2021/22 survey, having reached 21% in the 2020/21 survey.

2.1.16   GIS analysis has been undertaken on the postcodes given in the parking permit data. This analysis was done to determine the percentage of parking permit holders who live with walking and cycling distance of a university campus.

2.1.17   An acceptable walking distance of 2km was used in the analysis (equivalent to a walk time of 24 minutes). This is based on guidance provided by the Institution of Highways and Transportation (IHT) in their publication 'Guidelines for Providing for Journeys on Foot' (2000), which suggests that in terms of commuting, walking to school and recreational journeys walk distances of up to 2,000 metres can be considered as a preferred maximum. A cycling distance of 8km was used in the analysis (equivalent to a cycle time of 30 minutes). This is based on guidance set out for Local Cycling and Walking Infrastructure Plans (LCWIPs) from the Department for Transport (DfT), which states that it is possible for cycling to replace trips made by other modes of transport, typically up to 10km.

2.1.18   Permit holder postcodes have been converted to coordinates so that staff locations can be plotted in ArcGIS Pro.

2.1.19   The results were as follows:

Table 7: Parking Permit GIS Analysis – Results

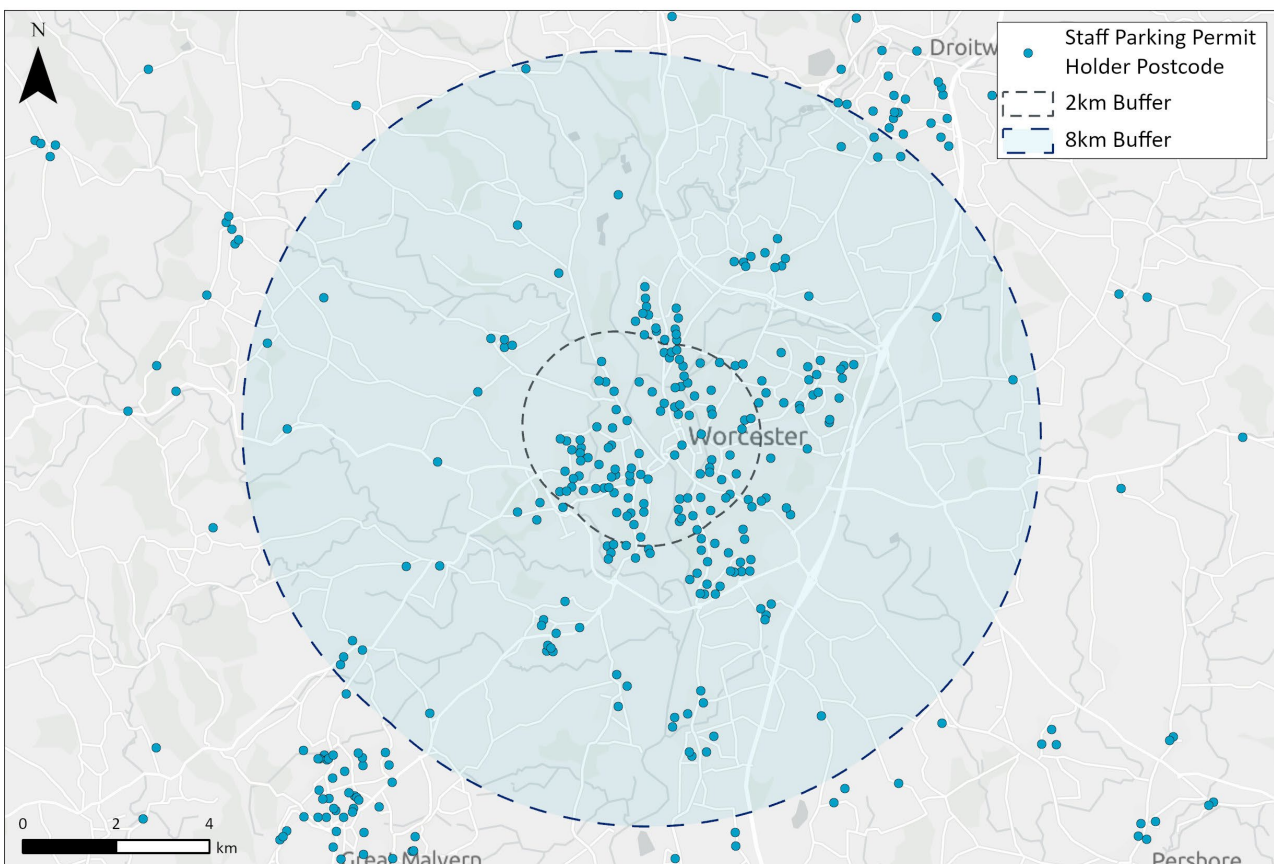| Distance	Percentage of Parking Permit Holders
Within Walking Distance (2km)	14%
Within Cycling Distance (8km)	39%

2.1.20   The GIS analysis shows that:

- There are 14% of parking permit holders within walking distance of a campus site

- There are 39% of parking permit holders that are within cycling distance a campus site.

- This equates to a total of 117 staff permit holders who live within walking distance and a total of 325 staff members who live within cycling distance.

2.1.21   It should be noted that a campus site may not be the campus site where the individual staff member works.

2.1.22   The data is plotted visually in Figure 1.

**Figure 1: Staff Parking Permit Holder Postcodes**

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Staff Postcode Analysis

2.1.23   As per the original Travel Plan, the home postcode locations of staff members have been examined to identify where they are travelling to the University from. The staff postcode information has been obtained from those who responded to the 2020/21 survey.

2.1.24   Figures 2 and 3 illustrate the home locations of staff across a wider regional area and also at a more detailed level within Worcester.
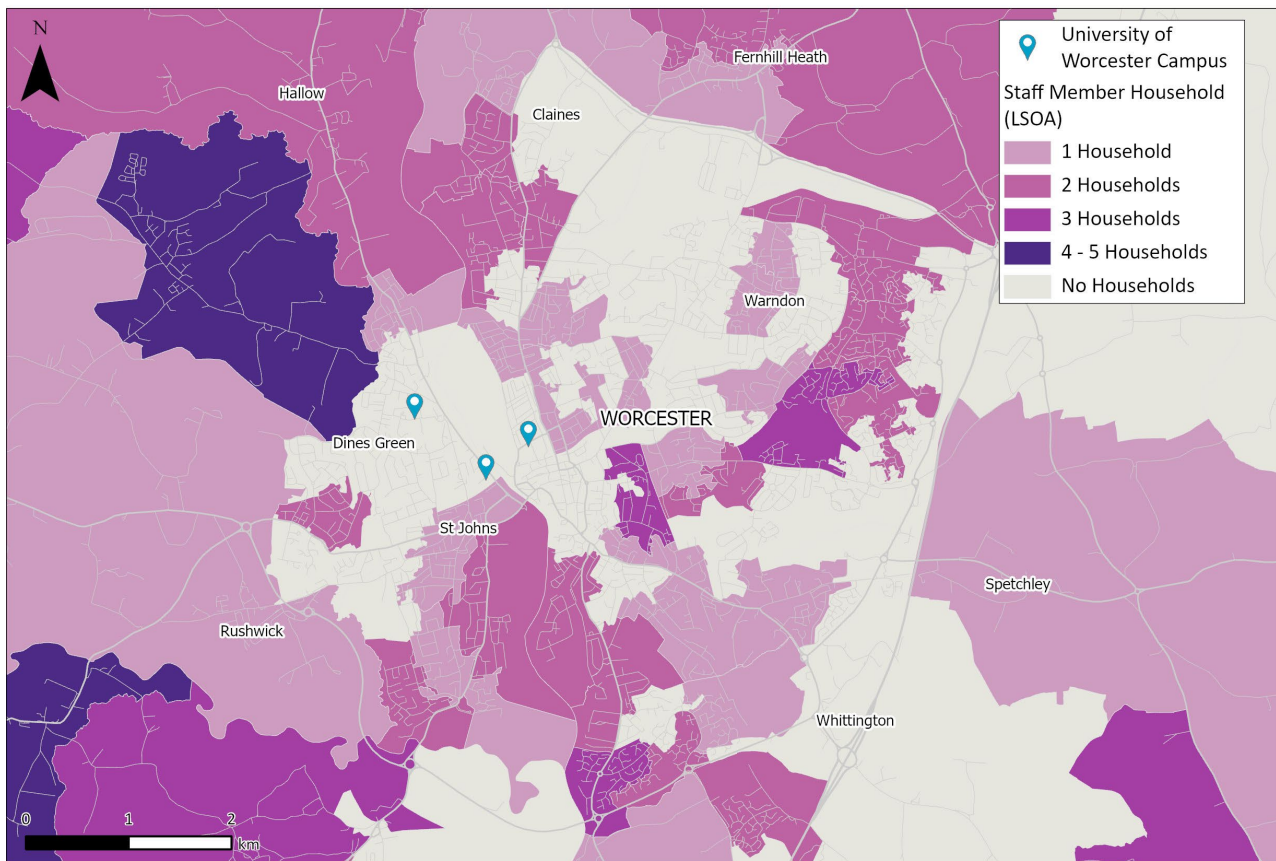
**Figure 2: Staff Home Locations – Worcestershire (Survey Respondents)**
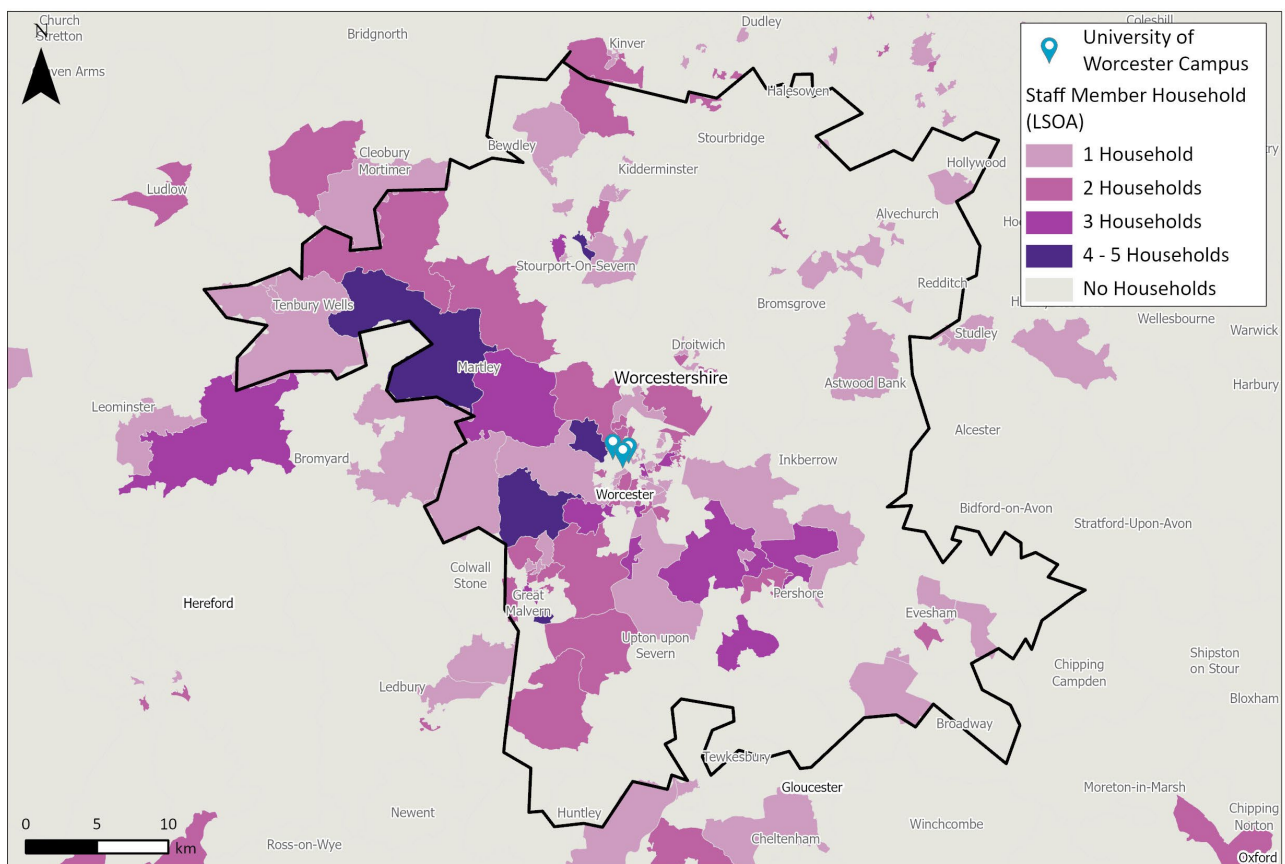
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Figure 3: Staff Home Locations – Worcester (Survey Respondents)

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2.1.25   Figures 2 and 3 demonstrate that while staff home locations are distributed across most of Worcestershire, there are concentrations within Worcester itself and within Great Malvern.

2.1.26   Figure 4 shows a 2km and 8km buffer from the site. GIS analysis has been undertaken on the postcode locations for all staff who responded to the 2020/21 survey and shows that:

- 7% of staff live within 2km walking distance from the site; and
- 29% of staff live within 8km cycling distance from the site.

Figure 4: Staff Postcode Locations and Walking / Cycling Buffer

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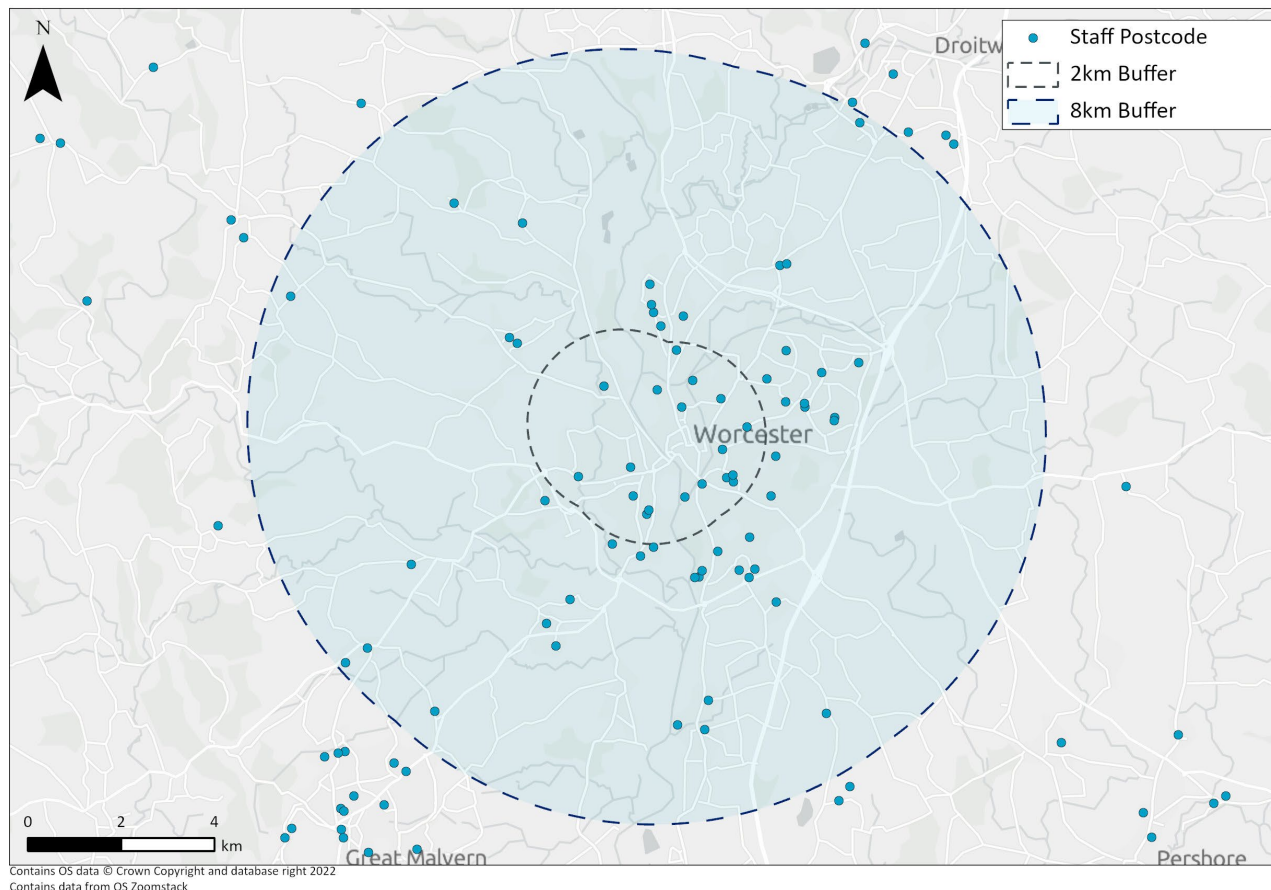
3   Student Travel

3.1   Overview

3.1.1   The 2020/21 student travel survey received a total of 106 responses. The 2021/22 survey received a total of 137 responses. Both response rates equate to approximately 1%.

3.1.2   The main mode of travel used by students to access the University has been identified from the travel survey and is summarised in Table 8.

Table 8: Main Mode of Travel to Work – Student

Mode of Travel	Year								
	2010	2011	2012	2013	2015	2017	2018/19	2020/21	2021/22
Bus	2%	3%	6%	6%	4%	7%	5%	6%	2%
Bicycle	7%	8%	6%	4%	4%	4%	5%	2%	2%
On Foot	38%	43%	45%	48%	47%	55%	48%	35%	42%
Train	7%	8%	10%	11%	7%	8%	9%	28%	14%

Mode of Travel	Year								
	2010	2011	2012	2013	2015	2017	2018/19	2020/21	2021/22
Motorbike	1%	1%	1%	1%	0%	0%	1%	0%	0%
Single Occupancy Vehicle (SOV)	30%	28%	24%	24%	30%	29%	41%	35%	29%
Car with others	9%	7%	6%	5%	4%	9%	9%	7%	16%
Other (including combination)	2%	3%	2%	1%	4%	-	-	-	-

3.1.3   Table 8 shows:

- The number of students travelling in single occupancy vehicles has decreased since the 2018/19 survey, reducing to 35% in 2020/21 and 29% in 2021/22;

- The number of students travelling by bicycle has reduced since 2018/19, as has the number of students travelling on-foot, although this has risen from a low of 35% in the 2020/21 survey to 42% in 2021/22; and

- The number of students travelling by bus has reduced from 5% in the 2018/19 survey to 2% in the 2021/22 survey, while those travelling by train has increased to its highest total, with 28% travelling by train in the 2020/21 survey, and 14% in the 2021/22 survey, both higher than previous years.

3.1.4   The distance travelled by students in singular occupancy vehicles is summarised in Table 9.

Table 9: Distance Travelled in Single Occupancy Vehicles – Student

Distance Travelled	2013	2015	2017	2018/19	2020/21	2021/22
Up to 1 mile	0%	2%	0%	2%	0%	5%
1 – 2 miles	2%	4%	4%	3%	8%	5%
2 – 4 miles	5%	9%	11%	7%	5%	3%
4 – 10 miles	19%	11%	14%	15%	11%	5%
10 – 20 miles	23%	23%	26%	34%	24%	37%
20 – 50 miles	48%	44%	42%	35%	49%	34%
Over 50 miles	3%	8%	4%	4%	3%	8%

3.1.5   Table 9 shows:

- In the most recent survey 10% of students travel less than 2 miles in a single occupancy vehicle

- The percentage of students travelling between 10-20 miles is at its highest in the most recent travel survey, with 37% of students travelling by car from this distance;

- There has been an increase in students travelling by car within 1 mile, up to 5% in the most recent survey, from the previous high of 2% in 2018/19. However, this had dropped to 0% in the 2020/21 survey;

- Overall, the table demonstrates that the majority of students who travel to university in a single occupancy vehicle live a considerable distance from either campus. In fact, Table 9 demonstrates that 84% of students live further than four miles from campus in the most recent survey.

3.1.6   Table 10 outlines the reasons for students travelling to University by private car:

Table 10: Reasons for Undertaking Journeys to University by Car – Student

Reason	Previous update (2018/19)	2020/21	2021/22
Time saving	19%	14%	28%
Cost saving	6%	2%	2%
Personal responsibilities	15%	4%	3%
Convenience	18%	19%	20%
Health reasons	2%	8%	5%
Personal security	3%	10%	5%
Public transport not available	5%	12%	11%
Distance from home	26%	33%	23%
Other	7%	0%	3%

3.1.7   Table 10 shows:

- There has been a significant increase in those choosing time saving a the reason for choosing to travel by car, up by 9% since the last survey, despite this dropping by 5% between the 2018/19 and 2020/21 surveys;

- The availability of public transport has increased as a reason for undertaking journeys by car, up to 11% from 5% since the last survey; and

- The number of students undertaking journeys by car due to distance from home has decreased by 3% since the last travel plan update, despite increasing by 6% between the 2018/19 and 2020/21 surveys.

3.1.8   The surveys also sought to ascertain what measures would encourage greater use of public transport to and from the university. The results of this question are detailed in Table 11.

Table 11: Measures to Encourage Travel to University by Sustainable Modes - Student

Reason	Previous Update (2018/19)	2020/21	2021/22
Closer train station to home	17%	17%	13%
Closer train station to campus	20%	32%	18%
More flexible tickets	19%	18%	12%
Discount/cheaper tickets/passes	49%	47%	36%
Safer cycle routes	19%	12%	9%
Refresher/proficiency cycle training	6%	2%	0%
More frequent bus service	24%	29%	20%
More direct bus routes	23%	22%	24%
I am happy with the way I travel to campus	43%	46%	50%

3.1.9   The results indicate that:

- The provision of discounted tickets and passes remains the most popular measure to encourage an increase in journeys by public transport, but this has decreased significantly in the 2021/22 survey, with other decreases in those preferring a closer railway station to campus, more flexible tickets and a more frequent bus service.

- Nevertheless, improvement of bus services in directness and frequency remain popular measures.

3.2 Home to University Travel

3.2.1 Students were also asked to identify their usual mode of travel between their 'home address' and their 'term time' address and also how often they make the journey. The results of these questions are detailed in Table 12, which shows the results included in the previous Travel Plan Update in 2019 and the most recent results available from the 2021/22 survey.

Table 12: Mode and Frequency of Travel Between Home and Term Time Address

Mode of Travel	Every Weekend		At least once a month		At least 2-3 times a semester		Once during the semester		Not at all		No Answer		Totals	
	2019	2022	2019	2022	2019	2022	2019	2022	2019	2022	2019	2022	2019	2022
Aeroplane	0%	0%	0%	0%	1%	0%	7%	3%	1%	4%	0%	0%	**10%**	**7%**
Train	4%	3%	3%	7%	5%	7%	5%	2%	1%	2%	1%	0%	**19%**	**20%**
Coach	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**1%**
Own car	7%	12%	3%	10%	2%	8%	2%	6%	1%	2%	4%	3%	**20%**	**39%**
Car with students at the university	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Driven by a family member	1%	4%	2%	3%	2%	4%	2%	0%	0%	0%	0%	0%	**7%**	**13%**
N/A	4%	1%	0%	0%	0%	0%	0%	0%	6%	4%	16%	14%	**25%**	**19%**
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	**2%**	**1%**
Total	**16%**	**19%**	**8%**	**20%**	**12%**	**18%**	**17%**	**13%**	**10%**	**12%**	**38%**	**18%**	**100%**	**100%**

3.2.2 The results in Table 12 indicate that:

- The number of students travelling in their own car has increased, especially for those travelling home either every weekend or at least once a month;
- The number travelling by aeroplane has decreased from 10% to 7%; and
- Students appear to travel home more frequently than in the previous survey, with an increase from 16% to 19% for those travelling home every weekend, and an increase of 12% of those travelling home at least once a month.

Parking Permit Holders

3.2.3 Parking permit data has been collected by the University which provides an accurate record of those who have paid for parking at the university. This data indicates that there are currently 689 students who own a parking permit, which is down from 1158 in the previous update.

3.2.4   There are many who do not own a permit and Table 13 summarises the parking locations of these students:

Table 13: Parking Locations - Non-Permit Holders

Location	2018/19	2020/21	2021/22
Campus short stay car park	8%	16%	14%
Campus long stay car park	38%	27%	51%
Free parking on nearby street	42%	46%	24%
Public pay & display car park (non-University)	12%	11%	11%

3.2.5   Table 13 indicates that the majority of students without a permit choose to park in the long stay car park, which has increased by 13% since the 2018/19 survey.

3.2.6   GIS analysis has been undertaken on the postcodes given in the parking permit data. This analysis was done to determine the percentage of parking permit holders who live with walking and cycling distance of a university campus. It should be noted that permit holders who have to drive for their course (i.e. students on courses which involve placements) have been excluded from the analysis.

3.2.7   An acceptable walking distance of 2km was used in the analysis (equivalent to a walk time of 24 minutes). This is based on guidance provided by the Institution of Highways and Transportation (IHT) in their publication 'Guidelines for Providing for Journeys on Foot' (2000), which suggests that in terms of commuting, walking to school and recreational journeys walk distances of up to 2,000 metres can be considered as a preferred maximum. A cycling distance of 8km was used in the analysis (equivalent to a cycle time of 30 minutes). This is based on guidance set out for Local Cycling and Walking Infrastructure Plans (LCWIPs) from the Department for Transport (DfT), which states that it is possible for cycling to replace trips made by other modes of transport, typically up to 10km.

3.2.8   Permit holder postcodes have been converted to coordinates so that student permit holder locations can be plotted in ArcGIS Pro. This is based on those responding to the 2020/21 survey.

Table 14: Parking Permit GIS Analysis – Results

| Distance	Percentage of students
Within Walking Distance (2km)	35%
Within Cycling Distance (8km)	38%

3.2.9   The percentages outlined above should be considered alongside the low response rates received in both student surveys, and therefore the results may not be fully representative of all student permit holders.

3.2.10   The GIS analysis shows that:

- There are 35% of parking permit holders within walking distance of a campus site

- There are 38% that are within cycling distance of the site.

- This equates to a total of 241 student permit holders who could walk instead and a total of 262 students who live within cycling distance.

3.2.11   Postcode district information (first three letters of each postcode) has been provided by the University for all student permit holders, the total number of permit holders within each postcode district are shown alongside a 2km walking distance and 8km cycling distance.

Figure 5: Student Permit Holder Locations (District Level)
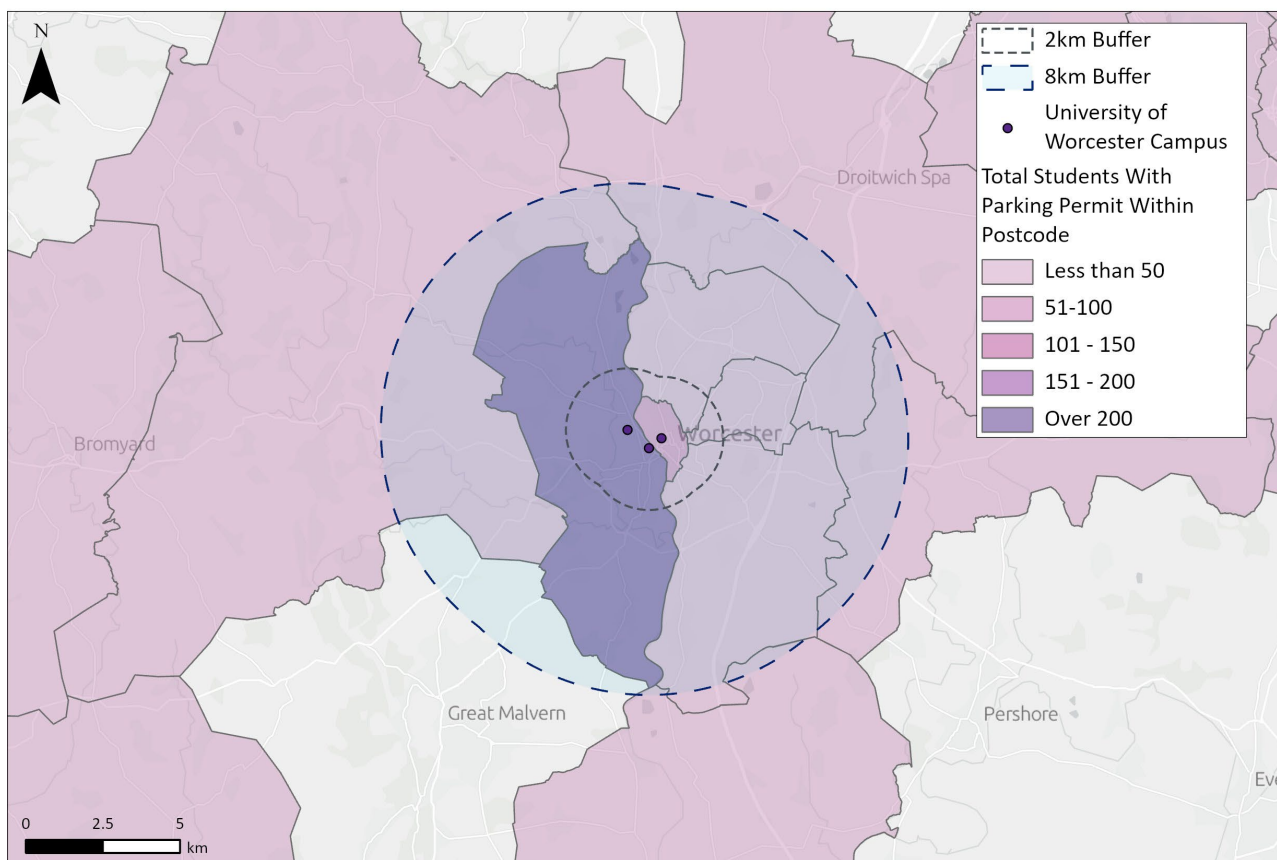
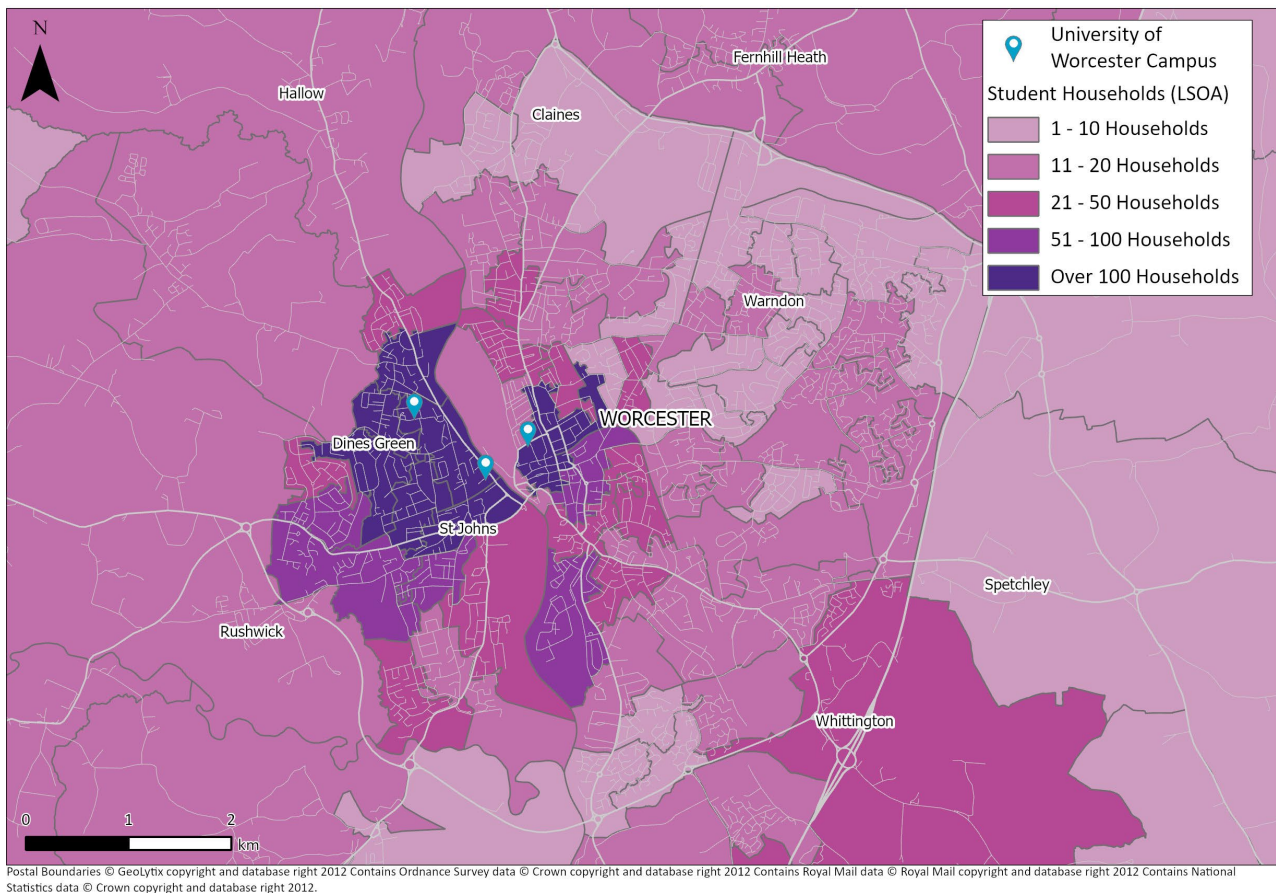### Student Postcode Analysis

3.2.12   Postcodes for all students has been provided by the University. Figures 6 and 7 illustrate the home locations of all students across a wider regional area and also at a more detailed level within Worcester.

Figure 6: Student Home Locations – Worcestershire
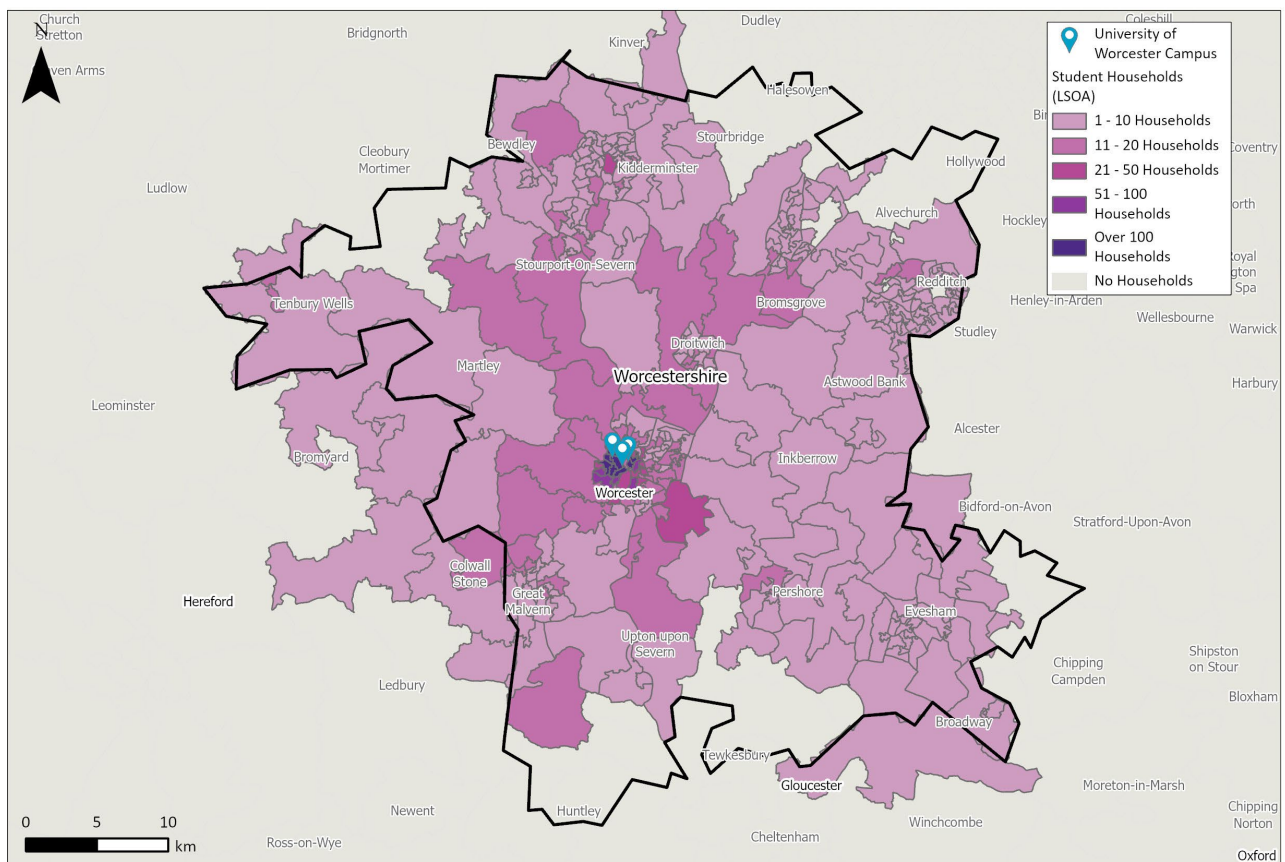
**Figure 7: Student Home Locations - Worcester**

3.2.13   As would be expected, Figures 6 and 7 demonstrate that students are primarily concentrated within Worcester, in locations nearby to University of Worcester campuses.

3.2.14   Figure 8 shows a 2km and 8km buffer from the site. GIS analysis has been undertaken on the postcode locations and shows that:

- 63% of students live within 2km walking distance (14% more than 2018) from the site; and

- 73% of students live within 8km cycling distance (17% more than 2018) from the site.

Figure 8: Student Postcodes and Walking / Cycling Buffer

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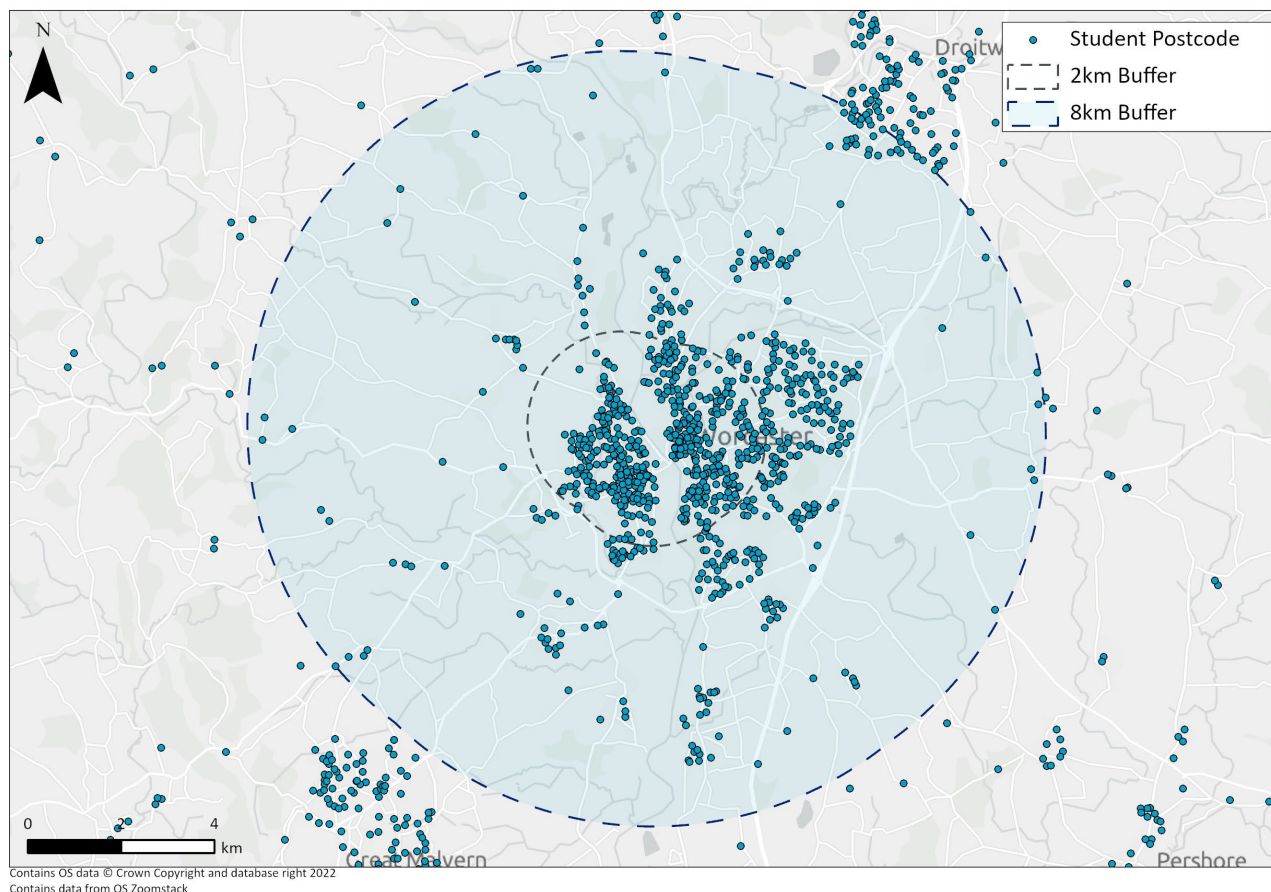
4 Inter-Site Travel

4.1.1 As a result of the layout of the University over several campuses, many staff and students are required to travel between site during the day to attend lectures and access university facilities. The mode of travel used by staff and students for inter-site travel is summarised in Table 16.

Table 15: Mode of Travel Used for Inter-Site Trips

Mode of Travel	Staff		Students	
	2018/19	2021/22	2018/19	2021/22
Bus	-	-	-	-
Car	35%	34%	26%	29%
Walk	77%	77%	79%	75%
Cycle	10%	7%	6%	4%
University Vehicle	-		-	-
Other	7%		6%	

4.1.2   Table 15 indicates that:

- The proportion of both staff and students walking between sites has remained high;
- The proportion of staff driving between sites has remained similar, but has increased slightly for students;
- Levels of cycling between sites has decreased for both staff and students.

4.1.3   Members of staff were also asked to identify what additional facilities could be provided by the university to assist with inter-site travel. The resultant suggestions are summarised below.

Table 16: Facilities to Assist with Inter-Site Travel 2018/19

Facility	2018/19	2020/21	2021/22
Bikes that you don't need to book	14%	14%	11%
Electric bikes so its easy up hills	20%	18%	13%
More frequent buses (currently 6/hr)	11%	14%	21%
Nothing I just like using my vehicle	27%	27%	36%
Other, please state	30%	28%	19%

- The most recent responses indicate that a large proportion of staff (21%), would be encouraged by more frequent buses; and
- There has been a 9% increase in those who like using their vehicle and would not prefer additional facilities.

5   Carbon Emissions

5.1.1   Information regarding carbon emissions for commuting trips to and from the University for 2020/21 has been provided by the University of Worcester. The carbon emissions presented in the last Travel Plan update has been provided alongside the most recent data available and is detailed in Table 17.

Table 17: Total Carbon Emissions from Commuting Travel (Staff and Students)

Mode of Travel	Carbon Emissions (tCO2e)							
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2020-21
Annual	6315.0	6142.4	5823.0	5683.3	5978.6	7817.0	5747.6	5519.0

5.1.2   Table 17 indicates that total Carbon Emissions from commuting travel have decreased in recent years to a low of 5519.0 (tCO2e) in 2020/21.

6 University of Worcester Mobility Plan 2022-2025

6.1 Overview

6.1.1 The Mobility Plan sets out the University of Worcester's objectives and actions for various Strategic Lines to do with sustainability. The Strategic Lines are split into the following categories:

- STRATEGIC LINE I: University management and governance
- STRATEGIC LINE II: Promotion of pedestrian mobility
- STRATEGIC LINE III: Promotion of cycling mobility
- STRATEGIC LINE IV: Promotion of public transport
- STRATEGIC LINE V: Promotion of more efficient car use
- STRATEGIC LINE VI: Awareness and participation
- STRATEGIC LINE VII: Urban planning and sustainability

6.2 Action Plan

6.2.1 The Strategic Lines above are provided within the Mobility Plan as part of a Specific Action Plan, which is summarised in Table 18, and key actions relating to walking and cycling, public transport and more efficient car use are explored below.

6.2.2 The progress of these Mobility Plan actions will be monitored as part of future Travel Plan updates alongside the original Travel Plan Actions, which are outlined in Section 7 of this report.

Table 18: Mobility Plan Action Plan

No.	Action	Responsibility
Strategic Line I: University management and governance		
I.1	Reaffirmation of responsibilities relating to sustainable transport	Director of Sustainability (DoS)
I.2	Paper to Sustainability Strategy Group (SSG) updating on mobility issues, and presenting updated Travel Plan	DoS and PJA
I.3	Participation in a forum with local stakeholders to deal with mobility issues	DoS
Strategic Line II: Promotion of pedestrian mobility		
II.1	Updating and re-publishing pedestrian routes between the campuses	DoS and Web team
II.2	Infrastructure improvements on Severn Campus and St Johns Campus	Estates and Development team

No.	Action	Responsibility
II.3	Continued investment in pedestrian and external areas including seating and leisure facilities around universities sites	Estates and Development team
Strategic Line III: Promotion of cycling mobility		
III.1	Improvement of the cycle lanes between Worcester City campuses and provision of proposed new pedestrian bridge connecting to Ghulevelt Park	Project development team
III.2	Increasing bike rack provision on all campuses,	Project development team
III.3	Provide shelter over SJC repair station	Estates
III.4	Review cycle lane and signage integrate with City signage	Project Development team
III.5	Further promotion of Cycle to Work scheme promoting the increased allowance to £2k	Director HR
III.6	Further provision of secure cycle parking all sites	DoS
Strategic Line IV: Promotion of public transport		
IV.1	Negotiation of discounts for university staff and students on public transport	DoS
IV.2	Investigate the feasibility of behaviour change app for door-to-door transport aligned with City Council providing rewards to users	DoS
IV.3	Review night bus pilot	DoS Assistant Director security and operations
Strategic Line V: Promotion of more efficient car use		
V.1	By 2024, we will have fully synchronised parking policies for students and staff to support and prioritise sustainable travel options.	DoS Director of Estates
V.2	From a 2019/20 baseline year, we will reduce by 10% the number of students travelling alone by car between their home address to term address by 2025.	DoS
V.3	Installation of 100 electric vehicle charging stations Severn Campus	Assistant Director Estates
V.4	Review University fleet and carpooling, introduce EV minibuses to electric fleet	Assistant Director Security and operations Head of Procurement

6.3 Walking and Cycling

6.3.1 Strategic Line II sets out measures that will promote and improve pedestrian infrastructure. This includes updating and re-publishing pedestrian routes between the campuses. It also refers to ongoing actions towards improving infrastructure on Severn Campus, comprising non-vehicular access onto Henwick Road, and vehicle parking including electric vehicles and cycles. Furthermore, the action refers to green infrastructure, new pedestrian areas or upgrading pedestrian areas on St Johns Campus, and continued investment into external areas including seating and leisure facilities around university sites.

6.3.2   A range of measures to improve cycling mobility are also given in Strategic Line III. A key improvement will be the proposed upgrade of cycle lanes between Worcester City campuses and the provision of a proposed pedestrian bridge to Ghelevelt Park - scheduled for Q5. This key measure will help to reduce the proportion of inter-site trips that are currently undertaken by single-occupancy vehicle (29%).

6.3.3   The University will also continue to carry out awareness and participation schemes to promote use of bikes as a mode of travel. These initiatives include the Woo Bikes Cycle campaign, which has been undertaken and promoted by students, as detailed in Strategic Line VII.1.

6.4   Public Transport

6.4.1   The mobility actions for the promotion of public transport are included in Strategic Line IV. Key measures include the continued negotiation of discounts for staff and students on public transport and investigating the feasibility of a behaviour change app for door-to-door travel by public transport.

6.4.2   An additional initiative is to review the night bus pilot, which took place in September – December 2019. It is hoped that this measure will create a habit of using public transport for students and reduce the need to use taxis when public transport services might otherwise be unavailable.

6.5   More Efficient Car Use

6.5.1   The Mobility Plan details a range of measures that will promote efficient car use and therefore reduce trips made to, from and between campuses in single occupancy vehicles. One key action is to introduce fully synchronised parking policies for student and staff, which is targeted to be achieved by 2024.

6.6   Behaviour Change App

6.6.1   Within Stategic Line IV, the Mobility Strategy makes reference to investigating the development of a behaviour change app for all modes of transport. The investigation of an app is underway, which would be available to staff and students at the university. The view would be to develop an all-encompassing app to include all travel modes, and the ability to make travel purchases such as public transport tickets, parking and electric vehicle charging.

6.6.2   The app would also be able to obtain and provide key information about travel patterns for both students and staff across the University.

7 Progress to Targets

7.1 Actions

7.1.1 A number of actions were detailed in the previous iteration of the Travel Plan, covering a range of categories. The actions, as well as the current progress towards completion, is summarised in Table 20, with a key provided below.

Symbol	Explanation
✔	Action complete
✔	Action partially complete / ongoing
✘	Action not complete / abandoned

Table 19: Summary of Travel Plan Actions

Action	Progress	Complete?
Travel Plan Awareness		
Prepare Travel Plan materials to a clear and consistent design	All sustainability messaging using consistent style	✔
Develop a Travel Plan section on the University website	Complete on both sustainability pages and main university find us pages	✔
Prepare travel option information	Walk, cycle and sustainable travel option promoted. Individual advice given if students or staff ask, many promotional events take place, primarily at the start of the semester and February 'Go Green Week	✔
Collate web links to facilitate personalised journey planning advice	Links provided on University website	✔
Erect Travel Plan information boards	Real time Public Transport information is provided on campus and First Buses app promoted	✔
Maintain awareness of the Travel Plan	Information of the Travel Plan is provided in the public domain on the University website, and webpage traffic monitored	✔
Parking		
Coordinate a car parking working group to review how parking is managed	Reviewed parking to develop new mechanisms for encouraging fewer journeys to campus	✔
Regularly assess car parking provision across the University Campuses	Regular monthly group meeting	✔
Introduce a system of flexible permits	In consideration as part of Behaviour Change App	✔

Action	Progress	Complete?
Public Transport		
Provide bus maps and timetabling information	Bespoke maps designed, poster and fold out versions created	✓
Promote existing discounts available to staff and students	New bus promotions agreed, and further work scheduled for next academic year	✓
Liaise with public transport operators to identify potential for further discounts and route improvements	New bus promotions agreed, and further work scheduled for next academic year	✓
Investigate the potential for providing season ticket loans to staff	Has been, and will continue to be investigated as part of Behaviour Change App	✓
Improve the bus stop waiting area on the St John's Campus	A new shelter has been installed	✓
Walking and Cycling		
Promote existing walking and cycling facilities and initiatives	Maps produced and on-street signage installed	✓
Review the use of existing facilities to identify areas for future investment	Bike loan has been extended, City Council currently considering joining	✓
Promote uptake of loan bike scheme	Bikes have been replaced, and number of bikes increased. System has been more automated. 3rd tender for service about to commence Bike loan scheme now includes 50 electric bikes	✓
Development department pool bike pilot scheme, whereby departments have access to bikes for inter-site travel	Scheme piloted and proposals for longer trail under discussion. Paper accepted to Netherlands conference on this project – Stack Rack.	✓
Set up facility to allow walkers and cyclists to find 'buddies' to accompany them	Never happened due to lack of demand	✗
Set up walking and cycling groups subject to demand	"	✗
Further investigate the potential introduction of tax-free cycle purchase	Cycle to work scheme for staff	✓
Continue to liaise with local authorities with regard to improving signage of routes	Achieved	✓
Implement NUS Love to Ride UniCycle behaviour change program and get 5% staff and 3% students signed up.	Great take up successful project. Featured in EAUC conference at Keele	✓
Car Share		
Promote existing web-based car share database	Achieved	✓

Action	Progress	Complete?
Consider implications of an emergency ride home scheme	Car share continues to be promoted and emergency ride home scheme is offered	✓
Review demand for priority spaces for car sharers and identify suitable locations for additional provision	Review can be made possible using data from Behaviour Change App	✓
Reducing the Need to Travel		
Promote awareness of video conferencing	All students and staff are to have access to Skype from their own PC	✓
Ensure video conferencing equipment is Accessible	As above	✓
Ensure all new computer equipment facilitates video conferencing	Achieved	✓
Investigate location independent working	Working from home accommodated and practiced regularly	✓
Investigate potential for increased use of the Virtual Learning Environment	VLE regularly used by academic staff	✓
Collect data on frequency and volume of Location Independent Working	Data to be collected as part of Travel Plan	✓
Review use of fleet vehicles and consider investment in low emission vehicles	All fleet vehicles are electric, other than minibuses	✓
Collect data in relation to delivery and contractor vehicle movements	Never implemented	✗
Liaise with suppliers regarding potential use of low emission vehicles	University continues to work closely with major supplies to encourage carbon reduction	✓
Provide sustainable travel advice to contractors	University continues to work closely with major supplies to encourage carbon reduction	✓
University Business Travel		
Coordinate a travel policy group which examines various options for business travel and sets parameters for business travel decisions	Implemented in 2018	✓
Discourage the use of grey fleet vehicles	All staff encouraged to use hire cars and not own vehicles	✓
Consider introduction of pool cars for staff use	Tendering underway for EV car share club	✓
Collect and disseminate data on use of hire cars and grey fleet	Achieved	✓

Action	Progress	Complete?
Encourage use of trains to replace air travel	New travel contract has been implemented Behaviour Change App could encourage rail use	✓
Student Home to Term Time Residence Travel		
Investigate potential for discounted public transport fares over longer distances	Bus and train concessions were obtained from West Midlands Railway and First, including discounted travel to staff and students and discounts for open days. To be re-negotiated following implementation of app	✓
Establish an informal car sharing service	Car share scheme implemented for staff and students	✓
Liaise with national car/van hire firms to identify the potential for discounted one-way hire	Never implemented	✗
Investigate whether good quality Skype facilities in halls would reduce the need for students to travel home during term time	Skype provided for all students	✓

7.2   Quantitative Targets

7.2.1   The original Travel Plan produced by PJA outlined a number of quantitative Travel Plan targets relating to the travel patterns of both staff and students. Table 21 details these targets and the current progress towards these targets:

Table 20: Progress Towards Targets

Target	Current Progress	On Track?
"A 20% reduction in the percentage of staff travelling by car alone to work by 2018 - i.e. a reduction from 55% in 2012 to 44% by 2018";	Percentage of staff travelling by single occupancy car has increased by 4% since 2018/19 survey to 70%	✗
"A 20% reduction in the percentage of students travelling by car alone to the University by 2018 – i.e. a reduction from 24% in 2012 to 19% by 2018"	Percentage of students travelling by car alone has decreased to 29% from 41% in the 2018/19 survey, but has not yet met the target	✓
"A 10% reduction in the percentage of students travelling between their home address to term time address by car alone by 2018"	Percentage of students travelling alone by car between their home address to term time address has increased to 39% from 20% in the 2018/19 survey	✗
"Maintain the ratio of business air travel emissions to international student FTE at the baseline of 68.5 tonnes CO_2"	Decreased by 89% from 2019-20, reaching 19 tonnes of CO_2, COVID-19 implications should be considered, however.	✓
"A 5% reduction in the carbon emissions form fleet vehicles by 2018 from a baseline of 36.9 tonnes CO_2"	Decreased by 58.49 % from 2019-20, reaching 12 tonnes of CO_2, COVID-19 implications should be considered, however.	✓

Target	Current Progress	On Track?
"A 5% reduction in the carbon emissions from car hire by 2018 from a baseline of 41.1 tonnes CO$_2$"	Decreased by 97.43% from 2019-20, reaching 1 tonne of CO$_2$, COVID-19 implications should be considered, however.	✓
"A 20% reduction in the total business undertaken in 'Grey Fleet' vehicles from the 2011/12 baseline level"	Decreased by 86.60% from 2019-20, reaching 5 tonnes of CO$_2$, COVID-19 implications should be considered, however.	✓

7.2.2 The original Travel Plan acknowledged the requirement for absolute reductions in carbon emissions associated with transport at the university, while balancing the importance of future growth at the university. Recent survey data is difficult to interpret due to changing travel behaviours as a result of COVID-19. Updated carbon results for the 2021/22 period are expected later this year.

7.2.3 The implementation of remedial measures is currently being negotiated with the University, with key consideration of how the roll out of a Behaviour Change App can encourage a shift towards meeting the Travel Plan targets.

8 Summary and Conclusions

8.1 Summary

8.1.1 The key points to note from this Travel Plan update are:

Staff Travel

- The most recent staff travel survey received a total of 502 responses from staff, with a specified response rate of 100%;

- The proportion of staff travelling by single occupancy vehicle has increased (currently 70%), with the current level the highest since 2009;

- The proportion of staff travelling on foot has been decreasing since 2015 to a low of 16% in 2020/21;

- 39% of staff who own a parking permit live within cycling distance of a University of Worcester, and 14% live within walking distance;

- 7% of staff who responded to the survey live within a 2km walking distance of a University campus, and 29% live within cycling distance;

- The number of staff who travel by bus is has fallen to 2% from a high of 10% in 2013.

Student Travel

- The 2021/22 student travel survey received a total of 137 responses, with a specified response rate of 17%.

- The proportion of students travelling by single occupancy vehicle has decreased since the 2018/19 survey, but has not fallen below the lowest levels recorded, and is not meeting the Travel Plan targets;

- 38% of students who responded to the survey and own a parking permit live within cycling distance of a University of Worcester, and 35% live within walking distance;

- 63% of all students live within a 2km walking distance of a University campus, and 73% live within cycling distance;

- The proportion of students travelling on foot has been fluctuating since 2015 to a level of 42% in 2021/22, with a high of 55% in 2017;

- The number of students who travel by train has increased to a highest recorded total of 28%, while bus users have reduced; and

- The proportion of students travelling by airplane between their home-time and term-time address has decreased from 10% to 7% between 2018/19 and 2021/22.

8.2 Conclusion

8.2.1 Based on the survey results, it is clear the University is not currently meeting their sustainable travel targets.

8.2.2 GIS analysis of postcode data, undertaken by PJA, shows there is definite potential for mode share shift, as a considerable proportion of staff and students live within walking or cycling distance of a University campus.

8.2.3 It is hoped that the implementation of a Behaviour Change App can encourage a shift towards meeting the Travel Plan targets, and the effectiveness of this app should be considered as part of future Travel Plan updates.