

DOES CAR OWNERSHIP INCREASE CAR USE?

JANUARY 2014

**A STUDY OF THE USE OF CAR PARKING WITHIN
RESIDENTIAL DEVELOPMENTS IN LONDON**

A WSP STUDY COMMISSIONED BY THE BERKELEY GROUP



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Executive Summary

Securing the right amount of parking in new housing developments remains a contentious issue. Frequently, planning authorities seek to minimise provision, mindful of the pressure on roads, but customers and residents still want somewhere to park their car.

This research has been commissioned by the Berkeley Group as a follow-up to our 2011 report, “Does Car Ownership Increase Car Use?”. One of its key recommendations was to improve understanding of residential car ownership, and in particular resident travel behaviour and attitudes.

This new research does just that. It examines 14 developments across London. It compares car ownership and use on these sites with the surrounding areas. It also seeks to understand what elements of Travel Plans are most effective in changing travel behaviour, on the basis of interviews with 539 people; and it considers whether this should inform policy in the Further Alterations to the London Plan.

What we found

First, there is no apparent or simple relationship between car ownership, car use and access to public transport.

This is consistent with the findings of Transport for London’s 2010 “Travel in London Report 3”. Car ownership depends on a complex range of variables including household structure; household income; tenure; nationality; parking availability; public transport accessibility; access to employment and services; and up-front and ongoing costs.

Car ownership levels – and hence the demand for car parking – cannot be forecast solely on the basis of site location or accessibility. Development-specific assessments are required when levels of car ownership and the provision of car parking for new residential developments is being considered.

This is consistent with the policy approach set out in the NPPF and the London Housing SPG. Parking policies in the Further Alterations to the London Plan should therefore take account of the full range of car ownership variables.

Second, residents of new developments use their cars 10% less than people living in surrounding areas.

In new developments, the shift away from car travel was almost double the London average, when you compare these 2013 surveys with the 2011 Census results.

This suggests that the Travel Plan measures associated with those new developments are effective in reducing car use. Most residents’ cars are not used for commuting but kept for other purposes such as shopping and leisure. This suggests that many London residents who own cars do not to use them for commuting and regular peak hour travel.

The number of trips by car at Maple Quays in Southwark, for example, remains consistently extremely low throughout the day and the travel peaks are characterised by non-car travel; while at Kidbrooke Village, in a development with 826 completed homes to date, only 39% of people travel to work by car, despite 94% car ownership.

Executive Summary [continued]

Third, residents of new London developments that own a car are less likely to use it as their main mode of travel if they are provided with convenient alternatives.

Three quarters of respondents said they benefitted from the provision of good quality pedestrian routes to public transport. The same proportion said that they benefitted from being given travel information on (or before) moving-in.

The shifts towards public transport, walking and cycling among car owning residents in new London developments can be linked to well-designed Travel Plan measures. The key is delivering 'easy access' that makes sustainable transport more attractive than car use.

What works

The most effective elements of Travel Plans were found to be :

- Good quality pedestrian routes
- Travel Packs and travel information
- Secure cycle parking

The least effective elements of Travel Plans were found to be :

- Car sharing schemes
- Cycle maintenance facilities
- Local car clubs

This should help to inform decisions about which measures would be most effective in future Travel Plans. However, as with the assessment of car parking requirements, the selection of Travel Plan measures should be made on a development-by-development basis and take account of the nature of the development as well as its location and accessibility.

A key element is having a safe and pleasant route to public transport. This needs to be considered early in the design of developments. Improving the routes will increase use of public transport and should therefore be prioritised in S106 Agreements/the Community Infrastructure Levy as appropriate.

When asked what would most encourage them to use public transport more often, respondents cited cost, better knowledge of public transport, safer cycle routes and fitness.

The research finds that many residents do not recall Travel Plan details after a year – which suggests a need to re-engage with residents and refresh the information they are provided with, especially because better knowledge is cited as a way to encourage more public transport use.

This research provides some important insights for the Mayor and his officers as they consider Further Alterations to the London Plan:

- There is not a clear relationship between car ownership and car use. Demographics and lifestyle are important determinants of use. The London Plan should promote a more fine-grained approach to parking provision recognising site and development characteristics;
- Safe and pleasant routes to public transport are critical to encouraging public transport use. This should be considered in the design of the development as well as within expenditure through S106 and CIL.
- Residents of new developments use their cars less than the residents in the wider areas where they are located. Travel Plan measures that target existing households could yield positive results in reducing car usage in London and, logically, other cities across the UK.



1.0 Introduction

1.1 PROJECT BACKGROUND

1.1.1 November 2011 saw the publication of a WSP study, commissioned by the Berkeley Group, into the use of car parking within residential schemes in London. This study “Does Car Ownership Increase Car Use?” set out the following key findings in its section 1.3:

- The apparent lack of a relationship between car ownership and peak hour car use seems to be consistent with the picture of stable car ownership but declining car use which comes from TfL’s monitoring of longer-term trends
- Development surveys show consistently low levels of car use, particularly in Inner London, suggesting that most London residents who own cars will walk, cycle or use public transport for their peak period journeys
- Residential car parking can therefore be provided without undermining cycling, walking and public transport use. This avoids the overspill parking problems of under-provision, and reflects the “appropriate balance” being sought by the Mayor in London Plan 2011 Policy 6.13 between development viability and excessive car parking provision
- These findings suggest that instead of a presumption to minimise residential car parking, there should be flexibility in the approach to agreeing parking provision within the London Plan standards.

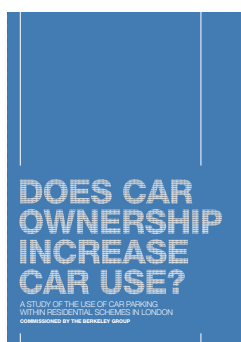
1.1.2 Paragraph 5.1.7 noted that “There is a need for additional research to improve the understanding of residential car ownership so that future developments can be planned so as to avoid under-provision or over-provision. Further research on resident travel behaviour and attitudes would be highly beneficial”.

1.1.3 WSP have therefore been asked by Berkeley Group to undertake additional research, and to review other changes since the November 2011 report, including the Census, NPPF and the Housing SPG.

1.2 OBJECTIVES

1.2.1 This research aims to provide further insights into the following:

- car parking provision, car ownership and car use in order to further test the findings of the November 2011 study. This involved surveys of all trips from a range of recent developments
- a comparison of that information with the 2011 Census data for areas surrounding the assessed developments
- identifying the most effective elements of Residential Travel Plans, based on desk-top and empirical research



2011 Report

1.0 Introduction [continued]

I.2.2 The Residential Travel Plan measures were collated from Travel Plans for the trip survey sites, plus other recent developments which had innovative Travel Plan measures. The full list of measures in these Travel Plans includes:

- Good quality pedestrian routes
- Secure cycling parking provision
- Barclays Cycle Hire stations
- Car clubs
- Car sharing scheme
- Travel Packs
- Development travel information
- Cycle maintenance facilities
- Free minibus shuttle service
- Personalised journey planning
- Cycle training and discounts
- Pre-paid Oyster Cards
- Electric vehicle charging points
- Free London Cycle Campaign memberships





2.0 Policy Context

2.1 NATIONAL POLICIES

- 2.1.1 The National Planning Policy Framework (NPPF) has retained the key principles of national transport policy for development proposals, which were previously set out in PPG 13 “Transport”; PPS3 “Housing”; PPS4 “Planning for Sustainable Economic Growth”; and PPG 12 “Local Spatial Planning”.
- 2.1.2 The NPPF continues to stress the importance of promoting sustainable transport choices and reducing the need to travel, especially by car. Paragraph 39 advises authorities setting car parking standards to take account of the following considerations:
- accessibility;
 - the type, mix and use of development;
 - the availability of and opportunities for public transport;
 - local car ownership levels; and
 - an overall need to reduce the use of high-emission vehicles.

2.2 MAYORAL POLICIES

Strategic Approach

- 2.2.1 The strategic approach to car parking is set out in Policy 6.13 of the London Plan 2011. This speaks of **“an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use”**. In contrast, the previous 2008 London Plan aimed to **“ensure that on-site car parking at new developments is the minimum necessary”**.
- 2.2.2 This shift from **“the minimum necessary”** to **“an appropriate balance”** suggests that instead of a presumption to always minimise residential car parking, there should be flexibility in the approach to agreeing parking on a development-by-development basis to reflect the nature of the development and local characteristics
- 2.2.3 The residential car parking standards in the London Plan 2011 are:

Maximum residential parking standards

Number of beds	4 or more	3	1 - 2
	2 - 1.5 per unit	1.5 - 1 per unit	Less than 1 per unit

2.0 Policy Context

Mayor's Housing SPG

- 2.2.4 The Housing SPG was published in November 2012.
- 2.2.5 The Mayor's Foreword speaks of "**recognising the need for flexibility in applying parking standards**", and this is reflected in paragraph 1.3.51 "**car ownership (if not its frequent use) is something which many Londoners value...** The Mayor asked the Outer London Commission to investigate this and provide advice on how policy might be implemented more sensitively to meet residents' needs within the overall objectives of the Plan and those of the NPPF. This advice has informed the guidance on residential parking in Annex 3".
- 2.2.6 Paragraph 2.3.6 refers back to the London Plan Policy 6.13 "**appropriate balance**" and notes that "**The flexibility inherent in striking this balance is an important consideration when coming to a view on an appropriate point within the range of provision set out in the standards... Such sensitivity resonates with the approach proposed in the NPPF**".
- 2.2.7 Paragraph A7 says that the "**mechanistic application of parking policy may be partly a product of development management processes**" and cites the example that "the approach to parking provision for smaller dwellings is sometimes literalist in the sense that 'less than 1 space per unit' is interpreted as being as far below 1 as possible rather than embracing the flexibility of the Plan to enable provision to be '**up to 1**'".
- 2.2.8 The thrust of Annex A is that a "**mechanistic**" or "**literalist**" approach should be avoided and that a flexible approach is preferred. Paragraph A 13 notes that "**the Mayor is considering an Alteration to the London Plan to secure a more effective balance and approach in addressing parking related issues**".



3.0 Study Method

3.1 TRIP GENERATION SURVEYS

- 3.1.1 The 2011 research involved a desktop review of existing trip generation surveys, drawing on a range of different data sources including the TRAVL database, iTRACE-compliant Travel Plan monitoring surveys, and other surveys completed on behalf of Ballymore and Berkeley Group. From the survey results, patterns of car use associated with each trip generation survey site were studied by:
- plotting the daily profiles of person trips and car driver trips;
 - comparing the relationships of car ownership versus observed car use; and by
 - tabulating the car use / car ownership ratios (ie peak hour car driver trip rate divided by average car ownership).
- 3.1.2 The 2011 study used existing trip generation surveys which had recorded how developments actually operate in practice.
- 3.1.3 The 2013 research has supplemented these surveys with additional survey data from a range of additional sites. Sites were selected on the basis of being recently completed and occupied developments, where on-street parking outside the development could be eliminated as a material consideration or could be quantified in the surveys. As a further practical consideration, sites were selected if their layout and parking access arrangements meant that residential traffic could be distinguished from traffic associated with commercial uses within the developments.
- 3.1.4 Fourteen sites were considered in total and those selected for trip generation surveys based on the above criteria were:
- Acton Gardens, Ealing (Countryside Properties)
 - Innova Park, Enfield (Kennet Properties)
 - Kidbrooke Village, Greenwich (Berkeley Homes)
 - Maple Quays, Southwark (Barratt)
 - New South Quarter, Croydon (Barratt)
 - Putney Square, Wandsworth (Barratt)
 - St Andrew's, Bromley-By-Bow, Tower Hamlets (Barratt)
 - Sandy Lane, Teddington, Richmond upon Thames (Linden Homes)
- 3.1.5 The sites were surveyed on Wednesday 17th July and Thursday 18th July 2013 between 07:00-22:00.
- 3.1.6 The site locations are shown on page 15.

3.0 Study Method [continued]

3.2 2011 CENSUS ANALYSES

3.2.1 2011 Census data was reviewed to compare the characteristics of the selected sites with those of the surrounding communities. This comparison was facilitated by overlaying the site boundaries on the Census Output Area (COA) boundaries in order to identify which COAs were within each site.

3.2.2 The implementation and occupation timescales for the surveyed developments meant that some of them were not occupied or only part-occupied at the time of the Census. However, the Census provides useful information in terms of:

- Gender
- Age
- Ethnicity
- Household composition
- Household tenure

This has been used as a cross –check against the questionnaire and interview sample profiles for respondents in each surveyed development.

3.2.3 In addition, the Census data provides information on household car ownership and car driver mode share for journeys to work, which was analysed to see how it compared with the surveyed developments and to compare Census car driver mode shares with the observed mode shares at the surveyed developments.

3.3 QUESTIONNAIRE AND INTERVIEW SURVEYS

3.3.1 From the selected sites noted above a resident survey was undertaken to assess what elements of Travel Plans implemented as part of the planning permission are most effective. The surveys sought to understand current travel behaviour (adding evidence to support the desk research) and identify potential respondents to undertake a further depth interview to qualitatively explore the triggers and influences that made them make changes to their travel behaviour – i.e. reduce their car use in favour of more sustainable options.

3.3.2 This dual approach provides a robust evidence base to gain deeper insight into motivation behind revealed changes in behaviour and therefore the effectiveness of Travel Plans.

MAP OF DEVELOPMENTS SURVEYED



Acton Gardens, Ealing



Innova Park, Enfield – RMA Architects



Kidbrooke Village, Greenwich



4.0 Trip Generation Surveys

4.1 SITE DESCRIPTIONS

Acton Gardens, Ealing

- 4.1.1 Acton Gardens forms Phase I of a new masterplan for the South Acton Estate within the London Borough of Ealing (Outer London). Phase I comprises 167 homes (52% rented/ shared ownership and 48% private), 75 car parking bays including 53 on-site car parking bays (including 10 disabled bays) within an undercroft parking area and 22 on-street car parking bays (including 2 disabled bays and 2 bays dedicated for Car Club use). This equates to a car parking provision of 0.45 spaces per home.
- 4.1.2 The site has a PTAL of 3 and is located approximately 800m to the south of Acton town centre with South Acton train station approximately 100m to the south of the development providing frequent services to locations on the North London Line.
- 4.1.3 First occupations took place in Spring 2013. The 2011 Census data for this site's COA shows an average car ownership rate of 70% (ie 0.7 cars per household), and 27% of people driving to work. This would suggest that less than half of the residents' cars are being used for commuting purposes. 40% of households are recorded as having children under the age of 16.

Innova Park, Enfield

- 4.1.4 The Innova Park development is located in the London Borough of Enfield (Outer London) comprising of 423 homes (93 houses and 330 1 and 2 bedroom apartments). 93 private homes (33 houses and 60 apartments) were built in Phase I, followed by later phases of rented / shared ownership (60 houses and 270 apartments). The site has a parking space per home plus an additional 10% for visitors.
- 4.1.5 The development has a PTAL of 1 b/2. Enfield Lock Station is located a short walk from the site, and provides a regular rail service into London Liverpool Street.
- 4.1.6 Occupations have taken place between 2011 and 2013. The 2011 Census data shows a car ownership of 75%, and around 40% of people driving to work, which is less than the surrounding areas. The Census mapping shows this area to be a pocket of lower car mode shares compared to the surrounding COAs. 38% of households have children under the age of 16.

Kidbrooke Village, Greenwich

- 4.1.7 The Kidbrooke Masterplan received planning consent in 2009 and will deliver regeneration of the former Ferrier Estate in the London Borough of Greenwich (Inner London). Over the next 15-20 years the masterplan will provide 4,000 new homes, a health centre, community facilities and retail. To date, a total of 826 homes have been delivered at Kidbrooke (312 private and 514 affordable homes).
- 4.1.8 The development has a PTAL of 2/3 and is directly served by bus services on Tudway Road (B16 and 178) which provide access to Lewisham, Eltham, Welling and Bexleyheath. Kidbrooke Railway Station accessed from Station Approach via Tudway Road provides direct rail services to London Bridge, Charing Cross, Cannon Street and London Victoria in Central London.
- 4.1.9 Occupations have taken place between October 2010 and March 2013. The 2011 Census data shows a car ownership rate of 94%, with 39% of people travelling to work by car. The car parking provision is 0.60 spaces per home. 33% of households have children under 16.

Maple Quays, Southwark



New South Quarter, Croydon



4.0 Trip Generation Surveys [continued]

Maple Quays, Southwark

- 4.1.10 Maple Quays comprises two sites split north and south of Surrey Quays Road adjacent to Canada Water Station in the London Borough of Southwark (Inner London). The development is a residential-led mixed use development comprising 900 homes across 6 buildings and 3,028m² of commercial development comprising retail, restaurant, and office space which also includes a resident gym and community space. The development provides a total of 220 on-site car parking spaces and 5 external Car Club spaces. This equates to a car parking provision of 0.24 spaces per home.
- 4.1.11 The development's PTAL ranges from 5 to 6a where the site is closer to Canada Water underground and bus stations. Canada Water underground station is approximately 120m from the site and provides access to the Jubilee Line and the Highbury & Islington – West Croydon Overground line.
- 4.1.12 First occupations took place in 2011. The 2011 Census shows an average car ownership rate of 53%, with only 7% of people driving to work by car across the COAs within the site boundary. This is one of the lowest COA car driver mode shares across London. 21% of households have children under 16.

New South Quarter, Croydon

- 4.1.13 The New South Quarter Development on Purley Way in the London Borough of Croydon (Outer London) is a large mixed-use development comprising residential, commercial, retail and community land uses. Currently a total of 460 homes (148 affordable and 312 private) with 366 car parking spaces have been delivered. This equates to a car parking provision of 0.80 spaces per home.
- 4.1.14 The development site is located between the A23 Purley Way and Wandle Park, to the south-west of Croydon. Croydon town centre is within approximately 1 km from the site and New South Quarter is located between residential land use to the south and commercial land uses adjacent to Purley Way to the north and east. New South Quarter has a PTAL of 3 and is immediately adjacent to the Wandle Park tram halt and approximately 1.5km north of Waddon railway station which provide access to destinations including Central London (London Victoria and London Bridge), Wimbledon and across Croydon. The site is also served by five bus routes, all of which call at Croydon Town Centre.
- 4.1.15 First occupations took place in 2010. The 2011 Census shows an average car ownership level of 60%, with only 25% of people driving to work by car across the COAs within the site boundary. This car driver mode share is lower than the surrounding COAs. 38% of households have children under 16.

Putney Square, Wandsworth



St Andrew's, Tower Hamlets



Sandy Lane, Richmond-upon-Thames



4.0 Trip Generation Surveys [continued]

Putney Square, Wandsworth

- 4.1.16 This development in Putney in the London Borough of Wandsworth (Inner London) comprises of 210 homes broken down into 156 private and 54 affordable homes.
- 4.1.17 Set in Putney Hill between Wimbledon Village and the River Thames, the development has a PTAL of 6a and is therefore highly accessible by public transport, with a number of bus services immediately available on Putney Hill and both Putney rail and East Putney underground Stations available within a 10 minute walk from the site.
- 4.1.18 The development was completed at the end of 2011. The 2011 Census shows a 49% car ownership, with only 6% of people driving to work, which is low for the area. The car parking provision is 0.77 spaces per home. Only 7% of the households have children under 16.

St Andrew's, Tower Hamlets

- 4.1.19 This former hospital site in Bromley-by-Bow in the London Borough of Tower Hamlets (Inner London) has been developed to provide a total of 964 homes (50% affordable and 50% private) as part of a large mixed-use development with ground floor retail and community uses including a health centre, community facilities and public open space and play areas. 30% of the homes have three or more bedrooms. There are 151 car parking spaces, representing a ratio of 0.16 spaces per home.
- 4.1.20 The development has a PTAL of 4/5 and has access convenient access to both Devons Road DLR Station and Bromley-By-Bow Underground Station.
- 4.1.21 The development was completed at the end of 2012. The 2011 Census shows 32% car ownership but only 9% of people travelling to work by car, which is lower than the surrounding area. 34% of households have children under the age of 16.

Sandy Lane, Richmond upon Thames

- 4.1.22 The Sandy Lane development is located in Teddington within the London Borough of Richmond Upon Thames (Outer London) and comprises of 198 homes (40% affordable and 60% private), approximately 300m² of B1 office space and 500m² taken up by a nursery/ crèche. A total of 223 car parking spaces are provided; 100 spaces within semi-basement areas below the residential blocks and 123 spaces at ground level. 5 spaces are available for use by the nursery/ crèche and 20 spaces are available to visitors, which leaves 198 spaces available to residents at a parking ratio of 1:1.
- 4.1.23 The site has a PTAL of 2 with Hampton Wick Station approximately 640m to the south-east of the site.
- 4.1.24 The development was fully occupied in December 2011. The Sandy Lane 2011 Census COA has a 92% car ownership and 30% of people driving to work, which is low in comparison to the surrounding area. 41% of households have children under 16.

4.0 Trip Generation Surveys [continued]

Summary

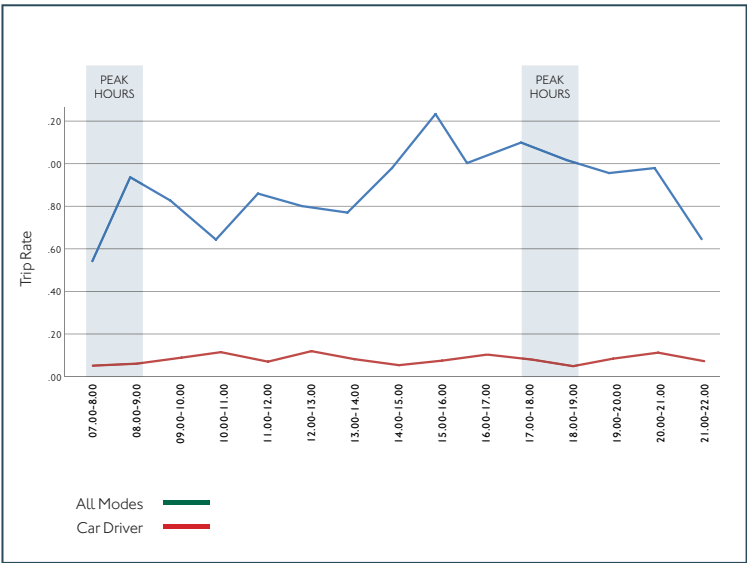
4.1.25 Key data from each of the surveyed developments is summarised below.

Site	Borough	PTAL	Housing Mix	Parking Ratio	Occupation Dates
Acton Gardens	Ealing	3	167 homes, 34% 1-bed, 50% 2-bed, 16% 3 and 4-bed	0.45	First occupations Spring 2013
Innova Park	Enfield	1b/2	423 homes, 22% houses and 78% 1 and 2-bed apartments	1.10	First occupations July 2011
Kidbrooke Village	Greenwich	2/3	826 homes, 26% 1-bed, 46% 2-bed and 28% 3 and 4-bed	0.60	First occupation October 2010 and completion by March 2013
Maple Quays	Southwark	6b	900 homes, 4% studios, 43% 1-bed, 41% 2-bed, 12% 3 and 4-bed	0.24	First occupation 2011 and completion by 2014
New South Quarter	Croydon	3	460 homes, 4% studios, 40% 1-bed, 48% 2-bed, 8% 3 and 4-bed	0.80	First occupations 2010
Putney Square	Wandsworth	6a	210 homes, 1% studios, 40% 1-bed, 57% 2-bed, 2% 3-bed	0.77	Completed at end-2011
St Andrew's	Tower Hamlets	4/5	964 homes, 10% studio, 31% 1-bed, 29% 2-bed, 26% 3-bed, 4% 4 and 5-bed	0.16	Completed at end-2012
Sandy Lane	Richmond-upon-Thames	2	198 homes, 28% 1-bed, 66% 2-bed and 6% 3-bed	1.13	Fully occupied since December 2011



4.2 SURVEY RESULTS

4.2.1 This section summarises the survey results for each development and reviews the daily weekday profiles (residential trip rate per home) of the all-mode and car driver travel profiles across the day.



Acton Gardens, Ealing

4.2.2 The trip profile for Acton Gardens shows a morning peak between 0800 and 0900 and a longer, flatter evening peak which is typical of residential developments. The peak All Mode trip rate occurs between 1500 and 1600, and appears consistent with the high proportion of under-16s identified by the Census data.

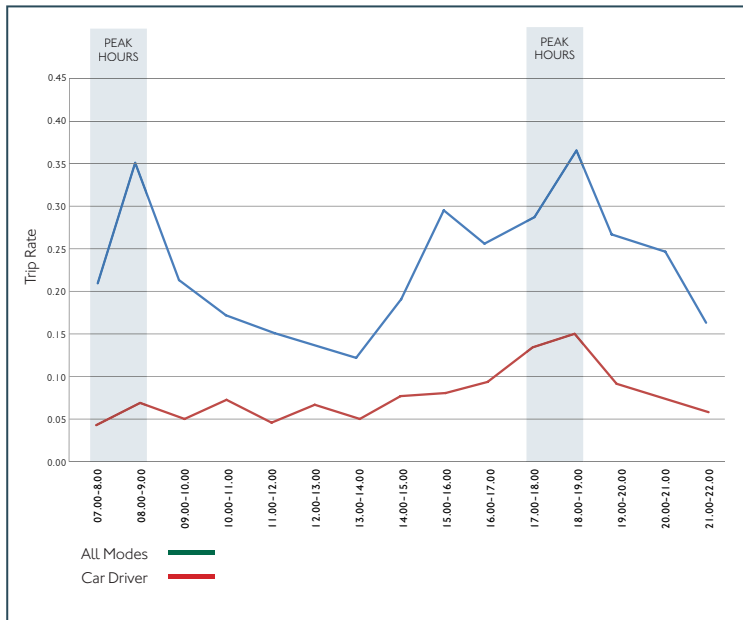
4.2.3 The Car Driver profile is low and flat, with the gap between the All Mode and Car Driver profiles reflecting a low car driver mode share.



Innova Park, Enfield

4.2.4 This site has All Mode and Car Driver trip profiles which tend to rise during the course of the survey period, having started from a much lower base than Acton Gardens. There is little sign of a morning peak.

4.0 Trip Generation Surveys [continued]



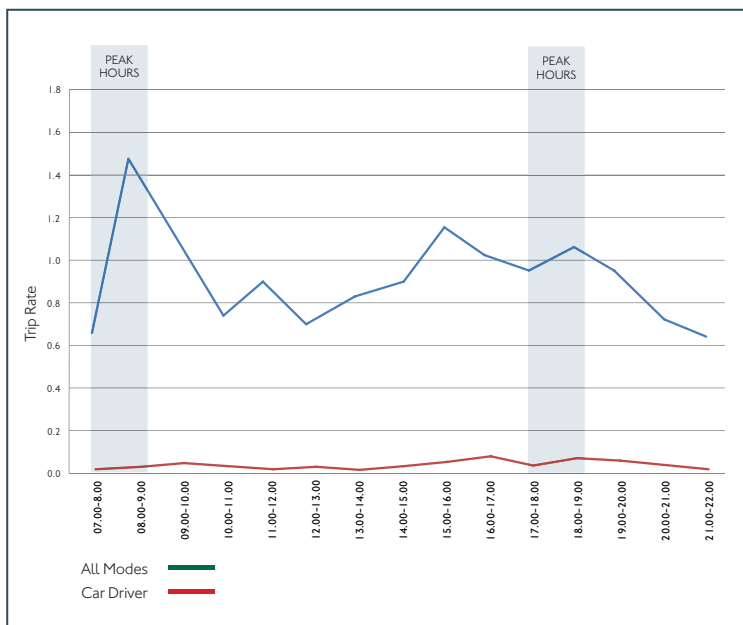
Kidbrooke Village, Greenwich

4.2.5

This profile shows a typical pattern of All Mode trips for a residential development, with morning and evening peaks and some school-related activity between 1500 and 1600.

4.2.6

The car driver profile rises in the late afternoon, with the trip rate peaking above 0.1 per home from 1700-1900, and this seems generally consistent with the Census finding of around 39% of people travelling to work by car, despite the 94% car ownership.



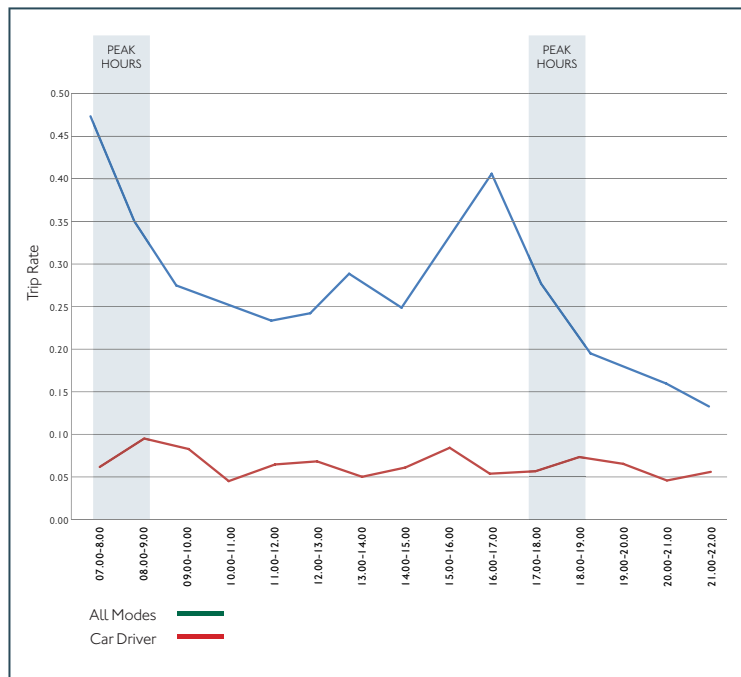
Maple Quays, Southwark

4.2.7

The All Mode trip profile again has a pattern of morning, evening and school-related (1500-1600) peaks, but with much higher AM peak. The All Mode profile might include pedestrian movements associated with the non-residential uses of the development, and so the All Mode trip rate maybe high when calculated per home.

4.2.8

The car driver trips remain consistently extremely low throughout the day and the peaks are characterised by non-car travel. This pattern appears consistent with the Census data of 7% of people travelling to work by car, despite the 53% car ownership.



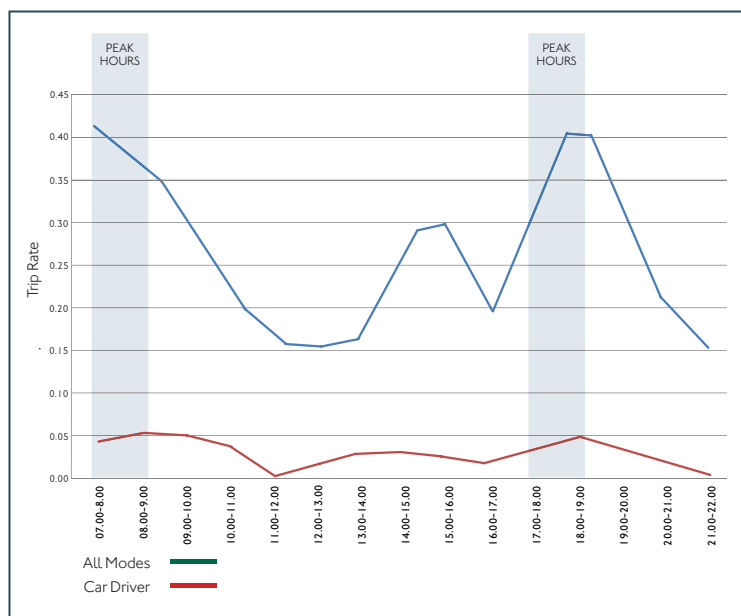
New South Quarter, Croydon

4.2.9

This profile shows another typical pattern of All Mode residential travel, with a pronounced (and earlier) morning peak, an evening peak and some increased lunchtime activity.

4.2.10

In comparison, the car driver profile is low and relatively flat throughout the day and it is clear that the peak hour car driver mode shares are a small percentage of the All Mode trips.



Putney Square, Wandsworth

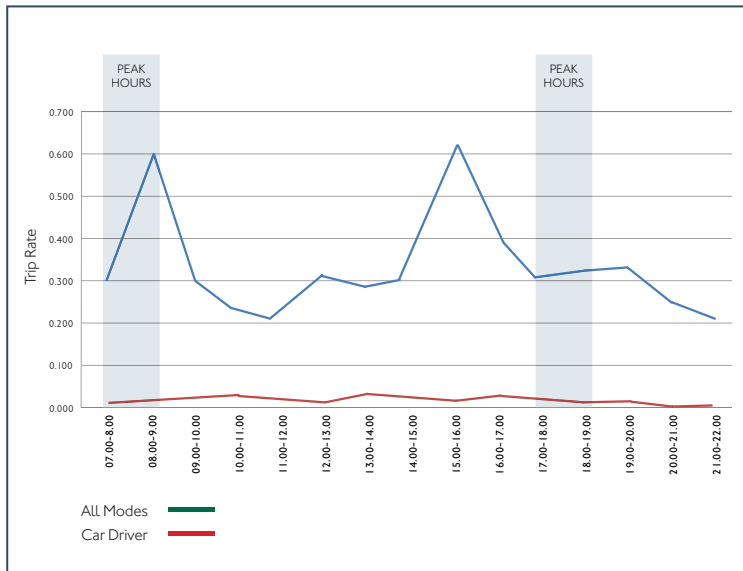
4.2.11

The All Mode trip profile again has morning and evening peaks with a lower mid-afternoon peak.

4.2.12

Again, the car driver trips remain low throughout the day with the peaks being characterised by a much higher proportion of non-car travel. This seems consistent with the Census report showing only 6% of residents driving to work, despite a 49% car ownership.

4.0 Trip Generation Surveys [continued]



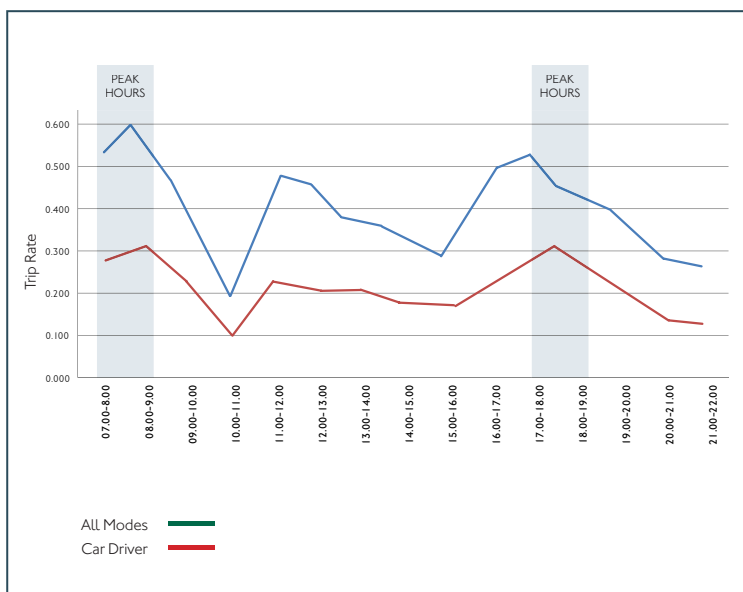
St Andrew's, Tower Hamlets

4.2.13

The all-mode person trip profile has a similar pattern as before, with pronounced morning and mid-afternoon peaks which are likely to reflect education-related trips from the 34% of households with children.

4.2.14

Again, the car driver trips remain low throughout the day, reflecting the Census finding that only 9% of people travel to work by car.



Sandy Lane, Teddington

4.2.15

The All Mode profile shows a sharp morning peak with a flatter evening peak and some interpeak activity.

4.2.16

The Car Driver profile tends to follow the shape of the All Mode profile, with the separation between the two profiles suggesting a higher car mode share at this development.

Summary

- 4.2.17 The results are comparable to those in section 4.2 of the 2011 research. There appears to be no simple relationship between car ownership, PTAL and car use. The ratios of car driving to work versus car ownership shows that most cars are not used for commuting.
- 4.2.18 As noted in paragraph 5.1.7 of the 2011 report, TfL's 2010 "Travel in London Report 3" had found that forecasting levels of car ownership at the detailed geographical level involves a complex range of variables including household structure; household income; tenure; nationality; parking availability; public transport accessibility; access to employment and services; and up-front and ongoing costs.
- 4.2.19 This interplay between a complex set of variables suggests that development-specific assessments are required when considering the forecast levels of car ownership for development proposals.



4.0 Trip Generation Surveys [continued]

4.3 CENSUS COMPARISONS

4.3.1 The surveys have been reviewed alongside 2011 Census data to see how the observed car driver mode shares for the developments compare with the Census mode shares for driving to work. This has compared the development survey data with the Census Output Area data for each site. The Census Output Area boundaries do not map directly onto the site boundaries and so the Census data is taken from a slightly larger area.

4.3.2 The comparison is summarised below.

Site Analysis – Key Data				Car Driver Trip Rate**		Car Driver Mode Share **	
Site	Parking Ratio	Car Ownership*	% Driving to Work*	AM	PM	AM	PM
Acton Gardens	0.45	70%	27%	0.114	0.102	10%	10%
Innova Park	1.10	75%	40%	0.073	0.206	28%	48%
Kidbrooke Village	0.60	94%	39%	0.074	0.151	21%	41%
Maple Quays	0.24	53%	7%	0.044	0.061	3%	6%
New South Quarter	0.81	60%	25%	0.091	0.073	19%	18%
Putney Square	0.77	49%	12%	0.056	0.047	14%	11%
St Andrew's	0.15	32%	9%	0.030	0.033	4%	8%
Sandy Lane	1.13	92%	30%	0.308	0.323	51%	58%

*source: 2011 Census for relevant COAs, **source: 2013 surveys

4.3.3 The results show that all developments except Sandy Lane, Teddington have lower car driver mode shares than reported by the Census. The observed car driver mode shares include all journey purposes whereas the Census data is for journeys to work only.

4.3.4 This suggests that the new developments tend to have lower car use than the nearby more established areas, and that the Travel Plan measures for those new developments are effective in reducing car use.

4.3.5 The car driver share of trips in the new developments is on average 10% lower than the Census shares for the surrounding areas. In the new developments, the mode shift towards non-car travel was almost double the London-wide average.



5.0 Questionnaire and Interview Surveys

5.1 OBJECTIVE

- 5.1.1 All new developments include Travel Plans as part of the planning permission. These can incorporate a range of initiatives and facilities such as the provision of cycle parking, travel information packs for new residents, vouchers to purchase bicycles or prepaid Oyster Cards, or car sharing schemes. Berkeley Group provide Travel Plans on their developments and wanted to understand what elements are most effective in changing or influencing travel behaviour, to inform discussions with planning authorities.

5.2 METHODOLOGY

- 5.2.1 In addition to the trip generation survey sites, other recent developments with innovative Travel Plan measures were selected for questionnaire and interview surveys. The survey method and sample details are set out in Appendix C. All residents of the selected sites were contacted at home for face-to-face questionnaire surveys, and all were asked if they would be willing to take part in subsequent and more detailed interviews.

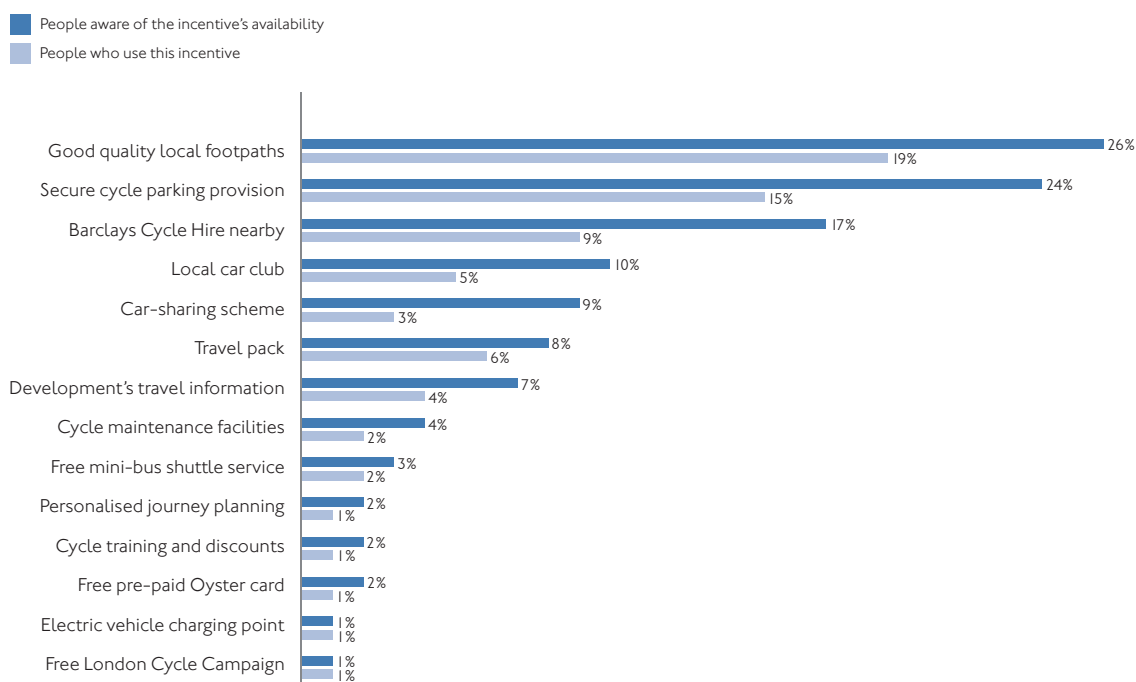
5.3 KEY FINDINGS

Sustainable travel incentives

- 5.3.1 The developments selected for this study had implemented Travel Plans when the properties were first developed. The objective of this research is to evaluate the impact such initiatives have on resident travel behaviour. Given that respondents came from a wide range of developments, not all incentives will have been made available to everyone. This analysis therefore compares recall of prompted initiatives offered with levels of uptake. Chart 5.1 opposite details the proportions of residents aware of various travel incentives, and compares those to the numbers who found each initiative useful.
- 5.3.2 It should be noted that not all developments had the same range of Travel Plan incentives and this is reflected in the awareness results reported below. For example, only the Queen Mary's Place development in Roehampton offered a free shuttle service to residents, and this accounts for only 3% of the total sample being aware of this initiative. It is therefore useful to consider the percentages of people who found each initiative to be useful, and this is summarised on Chart 5.2. For example, 3% of respondents were aware of the free shuttle service but 2% found it useful so a ratio of 67% is reported against the positive perception of this incentive.

Chart 5.1 Travel incentives

Awareness and usefulness of initiatives



5.3.3 The positive perception ratios have been calculated from Chart 5.1 and are presented in descending order below.

Chart 5.2 Positive Perceptions

Initiative	Positive Perception
Travel pack	75%
Good quality local footpaths	73%
Free mini-bus shuttle (at Roehampton only)	67%
Secure cycle parking provision	63%
Development's travel information	57%
Barclays cycle hire	53%
Local car club	50%
Cycle maintenance facilities	50%
Personalised journey planning	50%
Cycle training and discounts	50%
Pre-paid Oyster Card	50%
Car-sharing scheme	33%

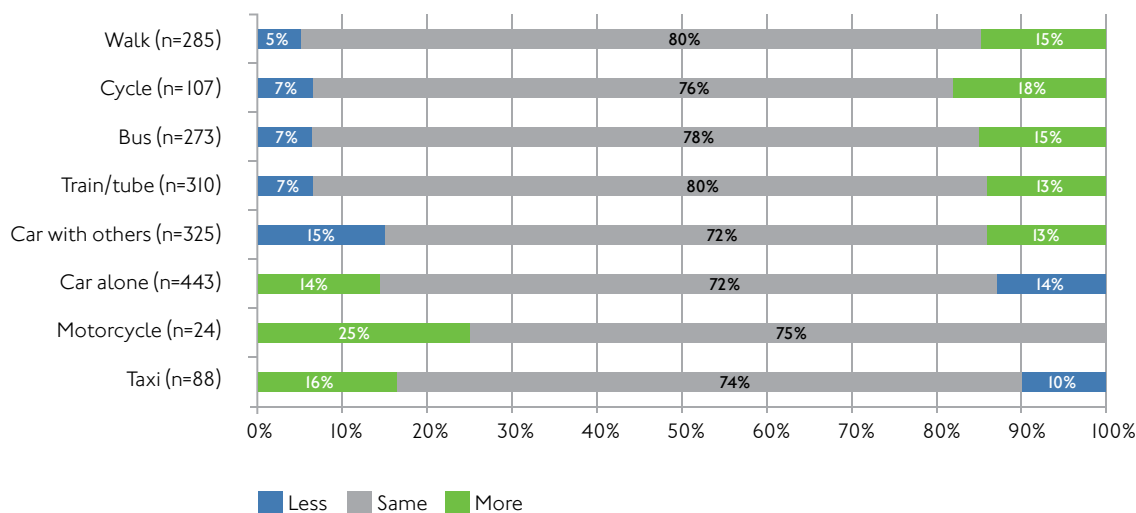
5.0 Questionnaire and Interview Surveys [continued]

Change in travel behaviour

5.3.4 To gain insight in the potential impacts of Travel Plan initiatives on resident travel behaviour, current travel activity by mode for different journey purposes was obtained, together with perceived changes in behaviour since they had moved to the current residence compared to previously. Respondents were asked for each mode of travel used, whether they now use it more, less or about the same, as when living at their previous home.

5.3.5 The following highlights reported change in travel behaviour since moving into their new residence at the sampled developments.

Chart 5.3 Changes in travel behaviours



5.3.6 There is evidence of a shift towards more sustainable modes of travel, and net increases in:

- cycling (+11%),
- walking (+10%),
- use of buses (+8%) and
- trains/tubes (+6%).

5.3.7 These modal shifts cannot be deemed to evidence change in the overall volume of trips, since detailed travel change by frequency was not sought.

5.3.8 In total, 93 people reported they are now travelling more by sustainable modes while 47 people reported less travel by sustainable modes than before living at their current residence. This represents a net increase of 8.5% people travelling by sustainable modes.

5.3.9 This mirrors the current trends in London travel behaviour (Travel in London 6, TfL, 2013), which notes London's public transport mode share has been increasing by 0.9% annually since 2006.

- 5.3.10 However, the results of this study suggest that increases among the new residents are better than the London average, and the reasons behind these positive behaviour changes are examined in more detail below.
- 5.3.11 Amongst those now using more sustainable travel options, the main reason for doing so is to save money, with ease of using public transport and faster journey times also significant factor, as shown money. Those cycling more are now doing so primarily to save money and keep fit, with some also mentioning better local cycle tracks and feeling safer with only one person mentioning their reduction in carbon emissions.
- 5.3.12 In response to Question 25 “**Which of the following changes would most encourage you to use public transport for some journeys in your local area?**”, as expected, cheaper fares was cited as the main factor that current non-users claim would encourage them to switch to public transport; though it is also noteworthy that 30% of non-users would not be encouraged by anything to make them travel by public transport. However other enhancements such as better lit bus stops and better knowledge of local bus services are cited by c.15% of residents as ways to encourage them to use public transport. This is something that can be included in travel information for new residents on developments.
- 5.3.13 Chart B.5 shows the significance of cost as a factor in people shifting travel mode from cars to walking, cycling and public transport use, followed by ease of use and journey speed. Environmental awareness was a key factor among people who now walk more. Health and fitness were quoted as reasons for walking and especially cycling more often, and the safety and quality of cycle routes were also mentioned as key reasons for people wanting to cycle more.
- 5.3.14 All residents were asked what would induce them to cycle (if currently not doing so) or cycle more if they were already (30%). Of note, 60% stated that nothing would induce them to cycle which implies that there are c.10% potential new cyclists waiting for encouragement to do so. The main encouragement for cycling is to provide safer better lit cycle paths, ensuring that these are continuous and lead to main destinations (e.g. town centres and rail stations).
- 5.3.15 The majority of residents do not consider the environmental impact when deciding modal choice, with just 13% giving this consideration when deciding which mode to use when travelling, and a further 20% noting that it has a little impact on their choice. As noted above, financial considerations are the main focus in deciding preferred mode, along with overall journey time and reliability.

5.0 Questionnaire and Interview Surveys [continued]

Summary

- 5.3.15 The results are consistent with the Census comparison in section 4.3 (Census comparison), in that the new residents had shifted mode by more than the London average. Similarly section 4.3 had found that on average the residents of new developments had lower car mode shares than people living in the surrounding areas.
- 5.3.16 The ranking of positive perceptions shows a wide variation in the take-up of Travel Plan measures and should help to inform decisions about which measures would be most effective in future Travel Plans. However, as with the assessment of car parking requirements, the selection of Travel Plan measures should be made on a development-by-development basis and should take account of the nature of the development as well as its location and accessibility.
- 5.3.17 The most effective elements of Travel Plans were found to be :
- Good quality pedestrian routes
 - Travel Packs and travel information
 - Secure cycle parking
- 5.3.18 The least effective elements of Travel Plans were found to be :
- Car sharing schemes
 - Cycle maintenance facilities
 - Local car clubs
- 5.3.19 Safe and pleasant routes to public transport are important to encourage public transport use and should be considered early in the design of development. Securing improvements such as lighting should be included within the S106 agreement where directly related to the development, or through the Community Infrastructure Levy.
- 5.3.20 Greater public transport use would be encouraged by greater knowledge, safer cycle paths and a desire to be fit. Residents' recall of Travel Plan measures was poor after a year suggesting a need to refresh information. Information highlighting the health benefits of walking and cycling could also increase participation. The results also suggest that the Mayor's campaign to improve cycle safety will also have a very positive impact.





6.0 Conclusions

6.1 TRIP GENERATION SURVEYS AND CENSUS COMPARISONS

- 6.1.1 This research has added trip generation survey data to complement Berkeley Group's previous research in 2011, and to further build up the availability of observed trip-making due to residential developments.
- 6.1.2 It has found no apparent or simple relationship between car ownership, PTAL and car use, and this is consistent with the findings of TfL's 2010 "Travel in London Report 3". This found that forecasting levels of car ownership at the detailed geographical level involves a complex range of variables including household structure; household income; tenure; nationality; parking availability; public transport accessibility; access to employment and services; and up-front and ongoing costs.
- 6.1.3 The nature of these variables entails that car ownership levels (and hence car parking demand) cannot be forecast by considering a site location or its accessibility alone. The significance of household structure, type and other demographic variables means that different forms of residential development will generate different car ownership forecasts – even in the case of different residential development proposals for the same site.
- 6.1.4 It follows that development-specific assessments are required when considering the forecast levels of car ownership for residential development proposals, and this seems consistent with the policy approach set out in the NPPF and the Mayor's Housing SPG.
- 6.1.5 It is concluded that further alterations to the London Plan parking policies should take account of the full range of car ownership variables, and build on the guidance in paragraph A3 of the Housing SPG Annex 3.

6.2 CENSUS COMPARISONS

- 6.2.1 The Census data for car driving to work and car ownership shows that most cars are not used for commuting and are therefore kept for other, more discretionary, journey purposes such as shopping and leisure. Considering this in combination with the surveyed trip generation profiles suggests that many London residents who own cars decide not to use them for commuting and regular peak hour travel.
- 6.2.2 It is apparent from comparing the 2013 surveys with the 2011 Census results that on average the residents of new developments had lower car mode shares than people living in the surrounding areas; on average 10% lower.
- 6.2.3 In the new developments, the mode shift towards non-car travel was almost double the London-wide average. This suggests the Travel Plan measures associated with those new developments are effective in reducing car use.

6.0 Conclusions [continued]

6.3 RESIDENT TRAVEL QUESTIONNAIRES AND INTERVIEWS

- 6.3.1 The results found that car owning residents in new London developments are less likely to use their car as their main mode of travel if they are provided with convenient alternatives. Even amongst those using their car for commuting, there are a range of alternative modes being used, indicating that this modal shift could be further enhanced with suitable incentives.
- 6.3.2 The mode shifts towards public transport, walking and cycling among car owning residents in new London developments, are greater than the London average and this may be linked with the take-up of well-chosen Travel Plan measures. The key is delivering 'easy access' that makes sustainable transport more attractive than car use with its associated costs and time – both in terms of fuel and parking at origin and destination.
- 6.3.3 Three quarters of those surveyed felt that they benefitted from travel information provided on, or before, moving in. The same proportion felt that they benefitted from good pedestrian routes to public transport.
- 6.3.4 Options for car sharing and car clubs were not well received. Other cycle incentives such as parking and support facilities are perceived positively.
- 6.3.5 Travel Packs and the provision of other transport information was found to be useful. Engaging further with residents to remind them of local benefits is likely to focus attention on sustainable travel options, since there is little recall of initial Travel Plan initiatives amongst residents who have lived in their property for more than a year.
- 6.3.6 When asked what would most encourage more public transport use respondents cited cost, better knowledge of public transport, safer cycle routes and fitness. Providing more local information on public transport will be a benefit. As resident recall of Travel Plan measures wanes after a year it would be beneficial to update and refresh information. Information on the health benefits of walking and cycling would also encourage greater participation.
- 6.3.7 The research provides some important insights for the Mayor and his advisors and officers as they consider the Further Alterations to the London Plan:
 - There is not a clear relationship between car ownership and car use. Demographics and lifestyle are important determinants of use. The London Plan should promote a more fine-grained approach to parking provision recognising site and development characteristics;
 - Safe and pleasant routes to public transport are critical to encouraging public transport use. This should be considered in the design of the development as well as within expenditure through S106 and CIL.
 - Residents of new developments use their cars less than the residents in the wider areas where they are located. Travel Plan measures that target existing households could yield positive results in reducing car usage in London.

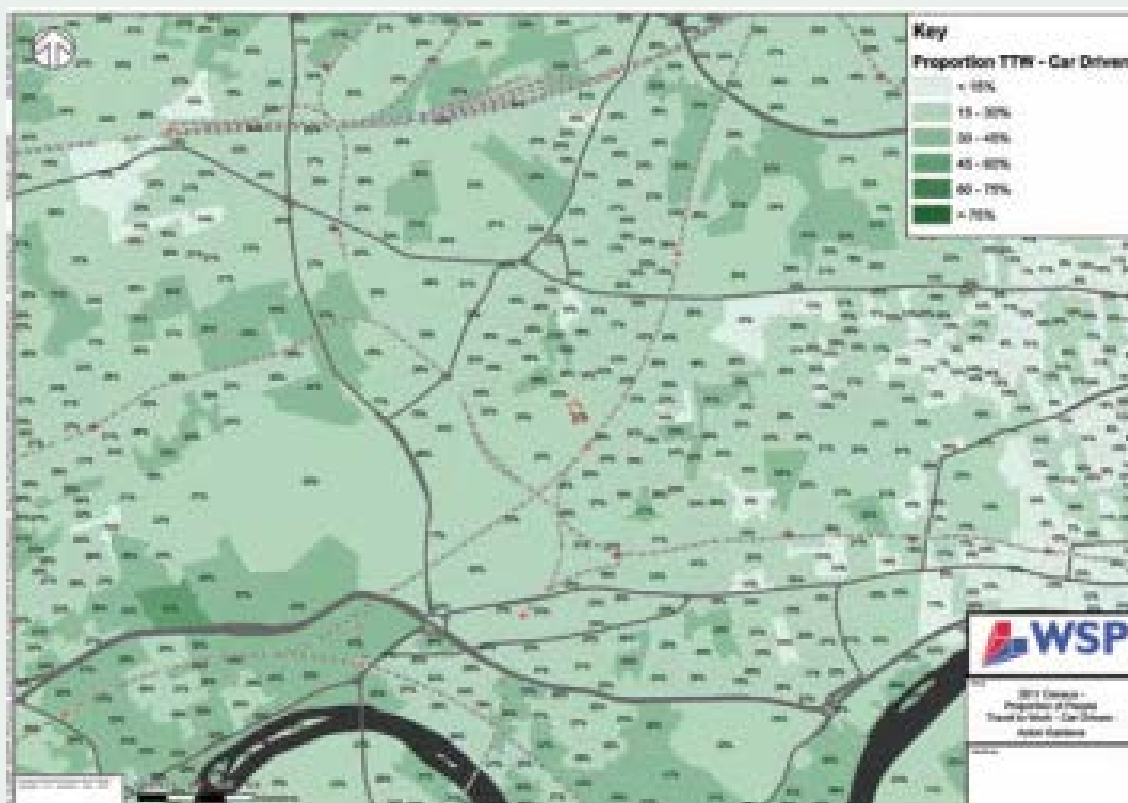
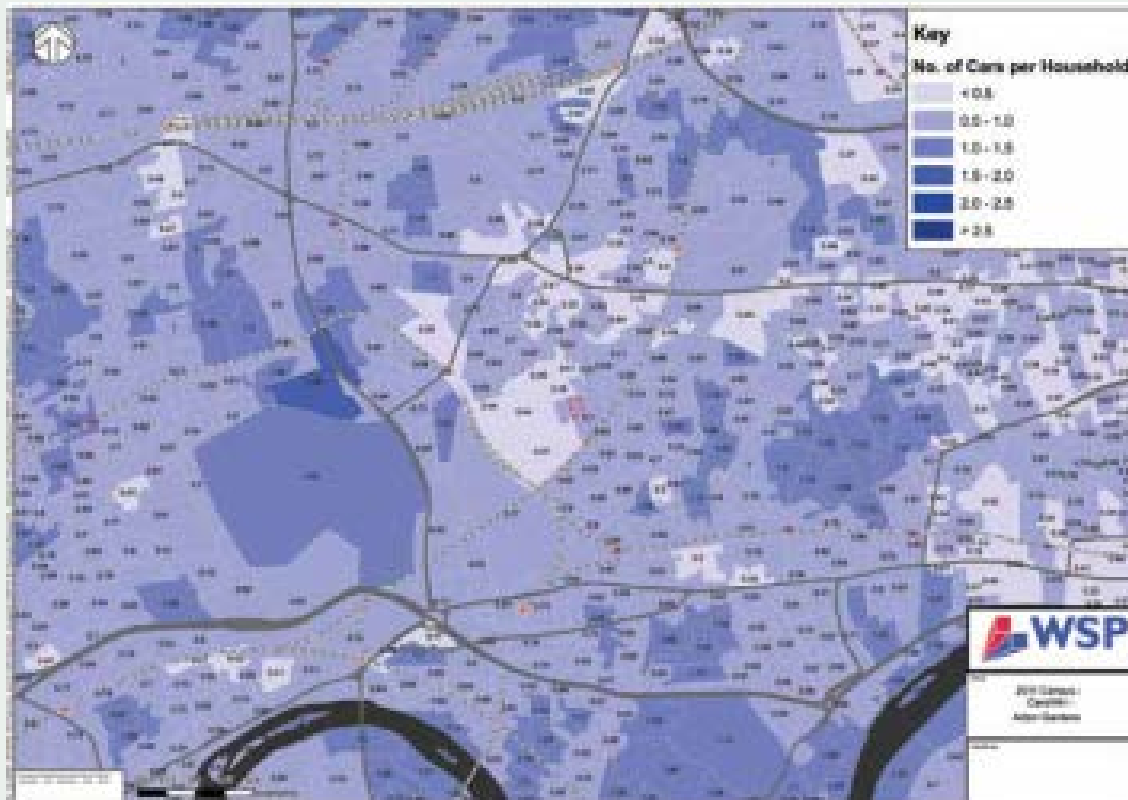




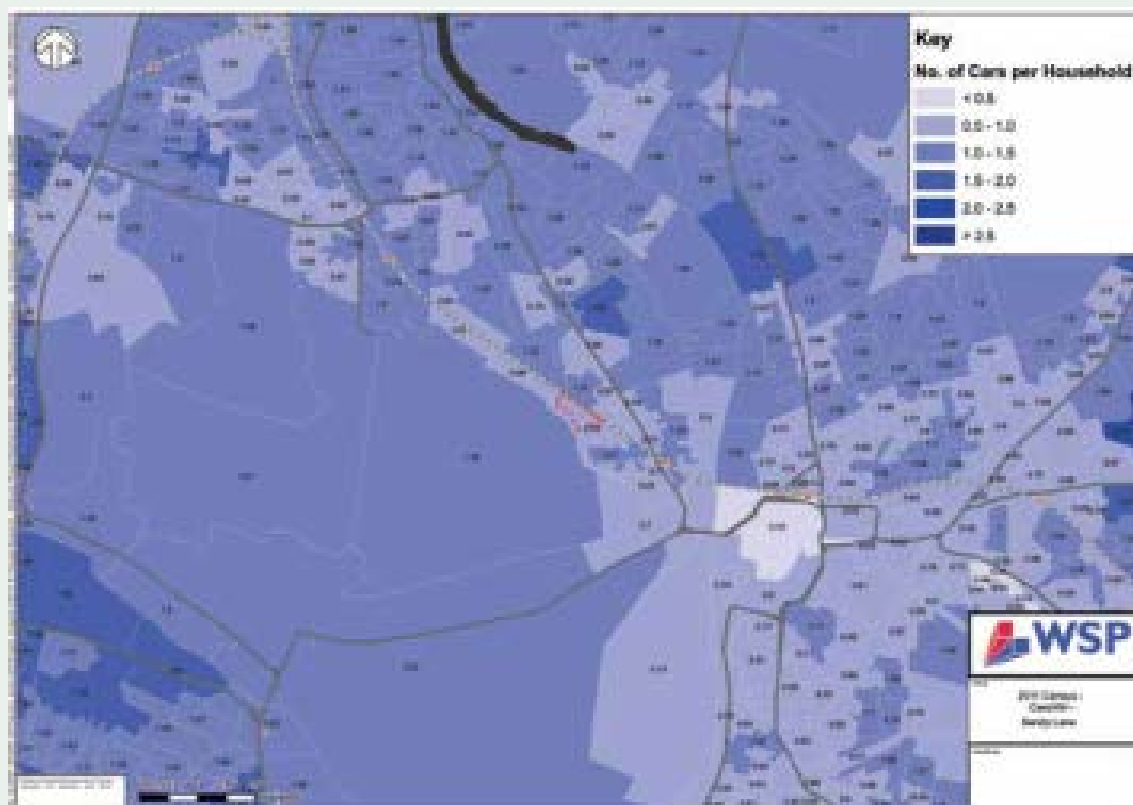
Appendices

- Appendix A** Census thematic maps
- Appendix B** Survey results
- Appendix C** Survey method and sample
- Appendix D** Depth interview topic guide

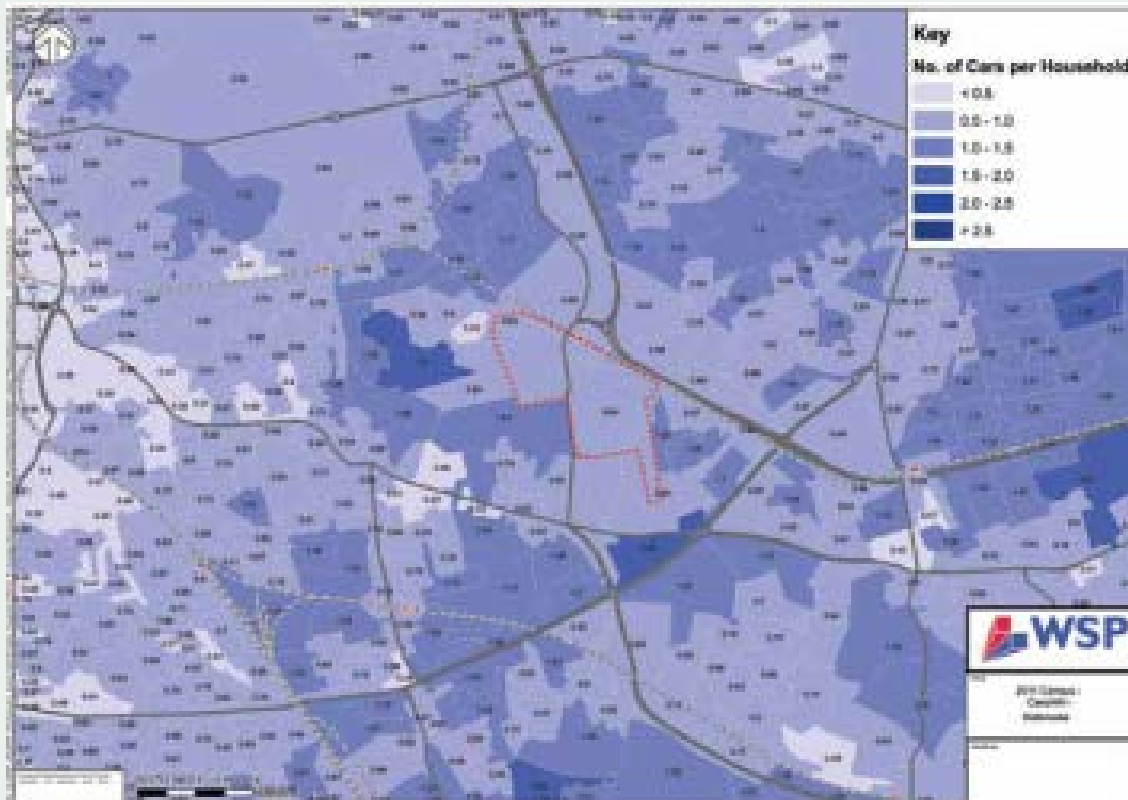
Appendix A – Census thematic maps Acton Gardens



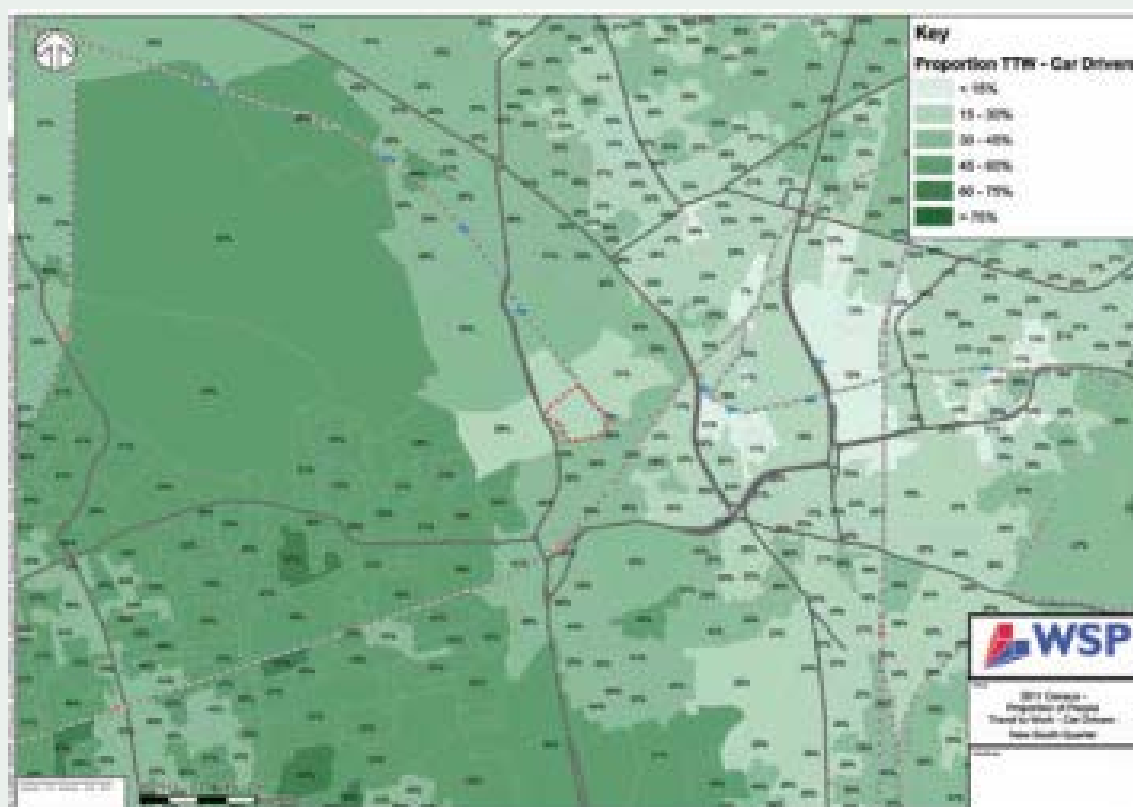
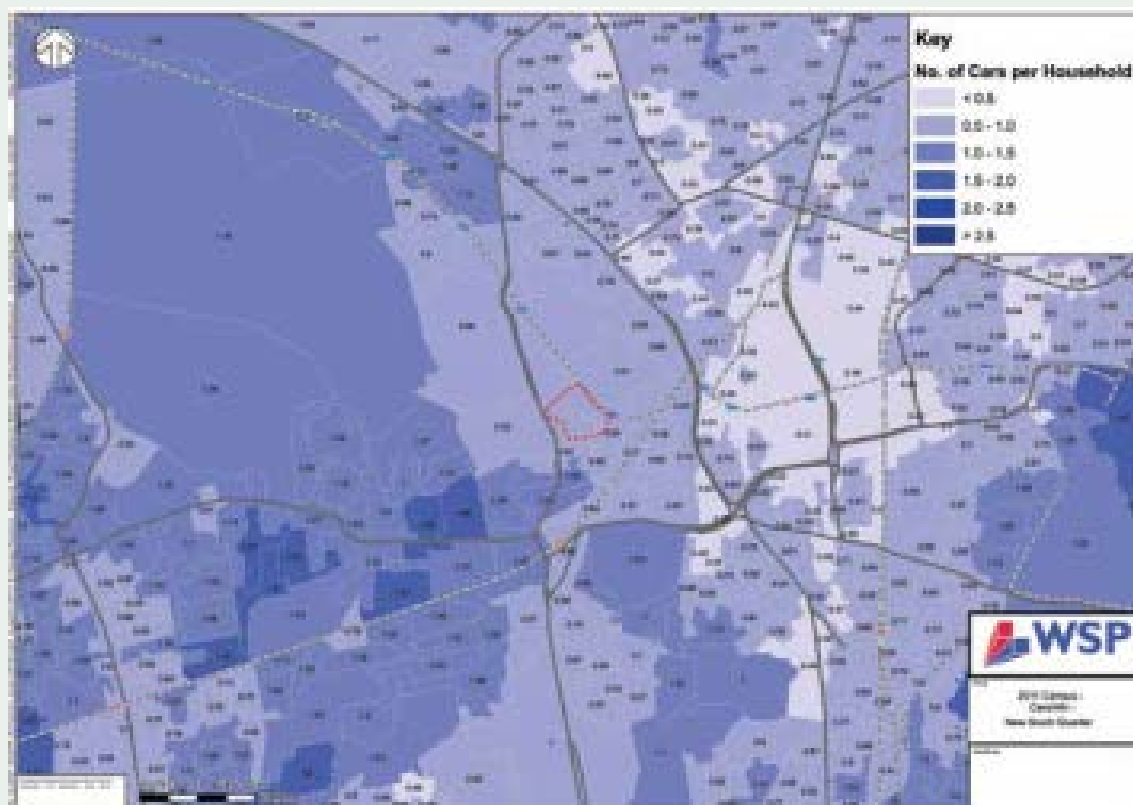
Appendix A – Census thematic maps Sandy Lane



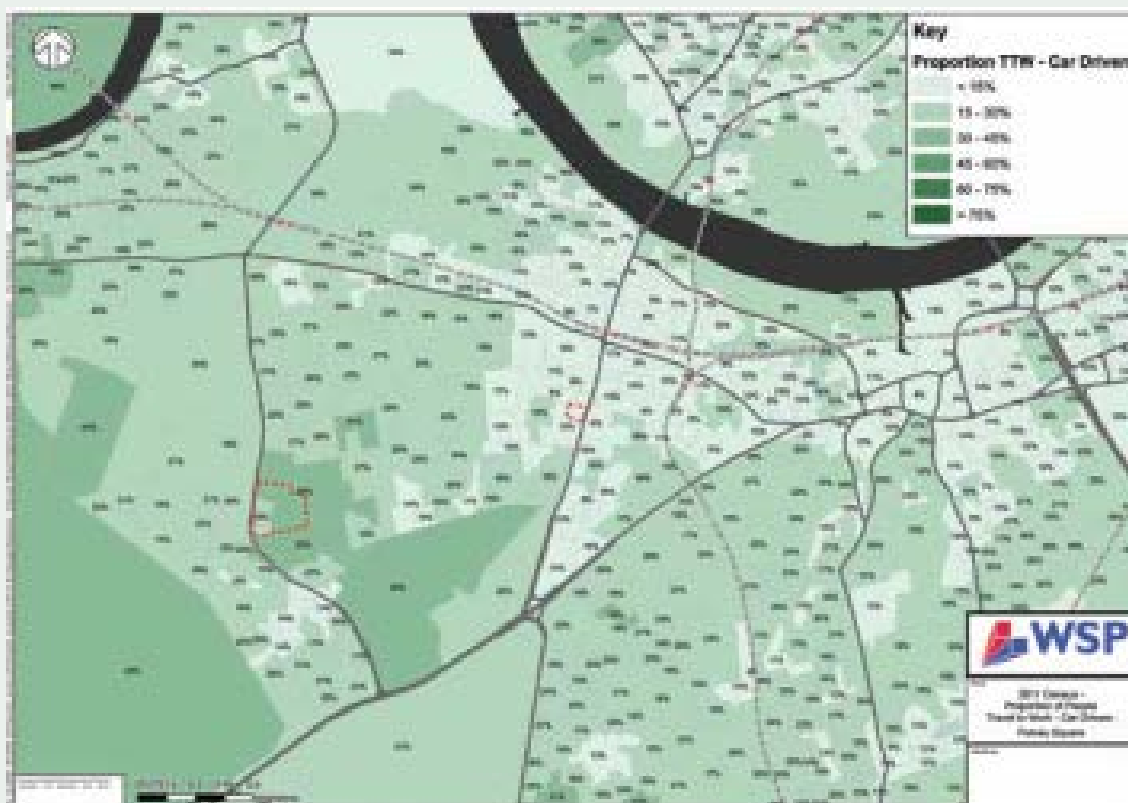
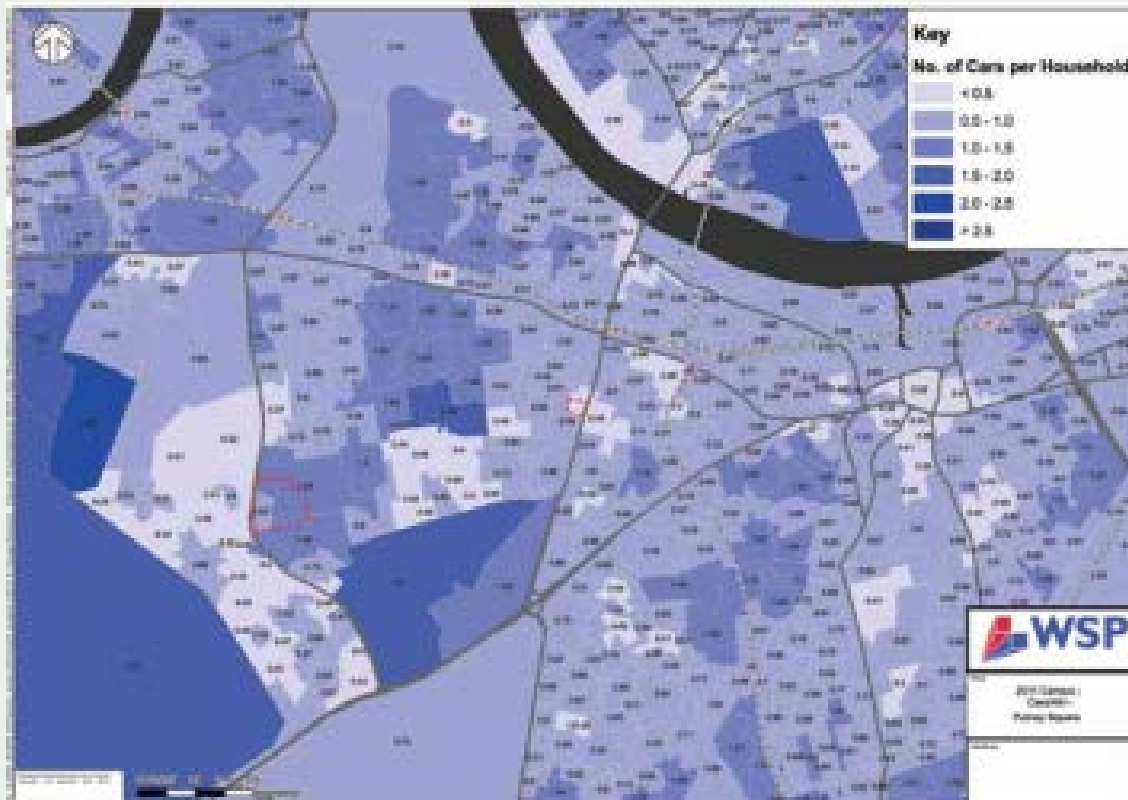
Appendix A – Census thematic maps Kidbrooke



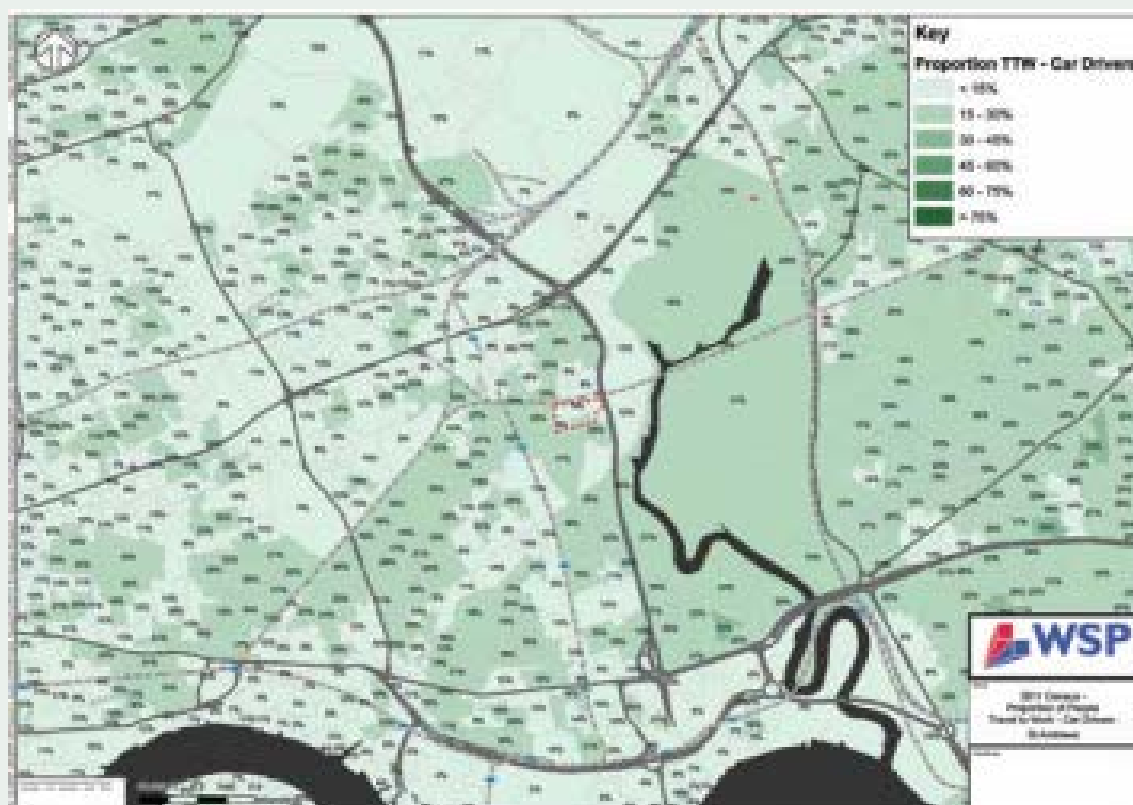
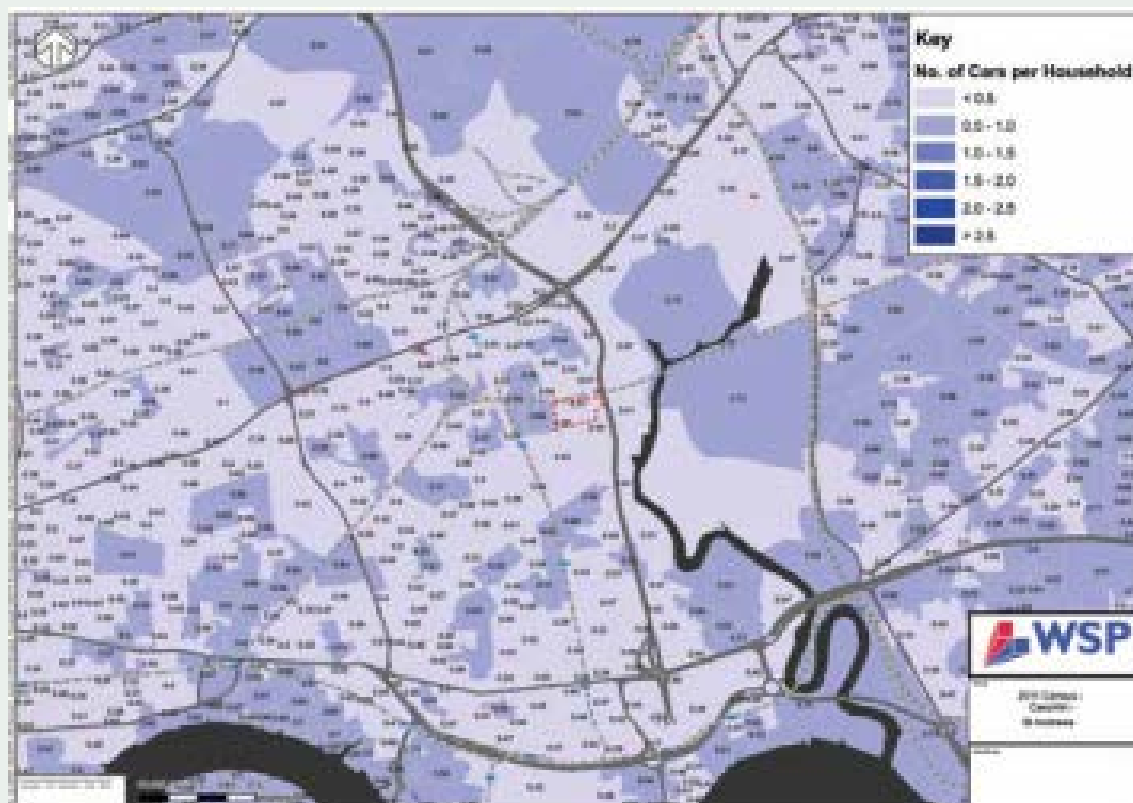
Appendix A – Census thematic maps New South Quarter



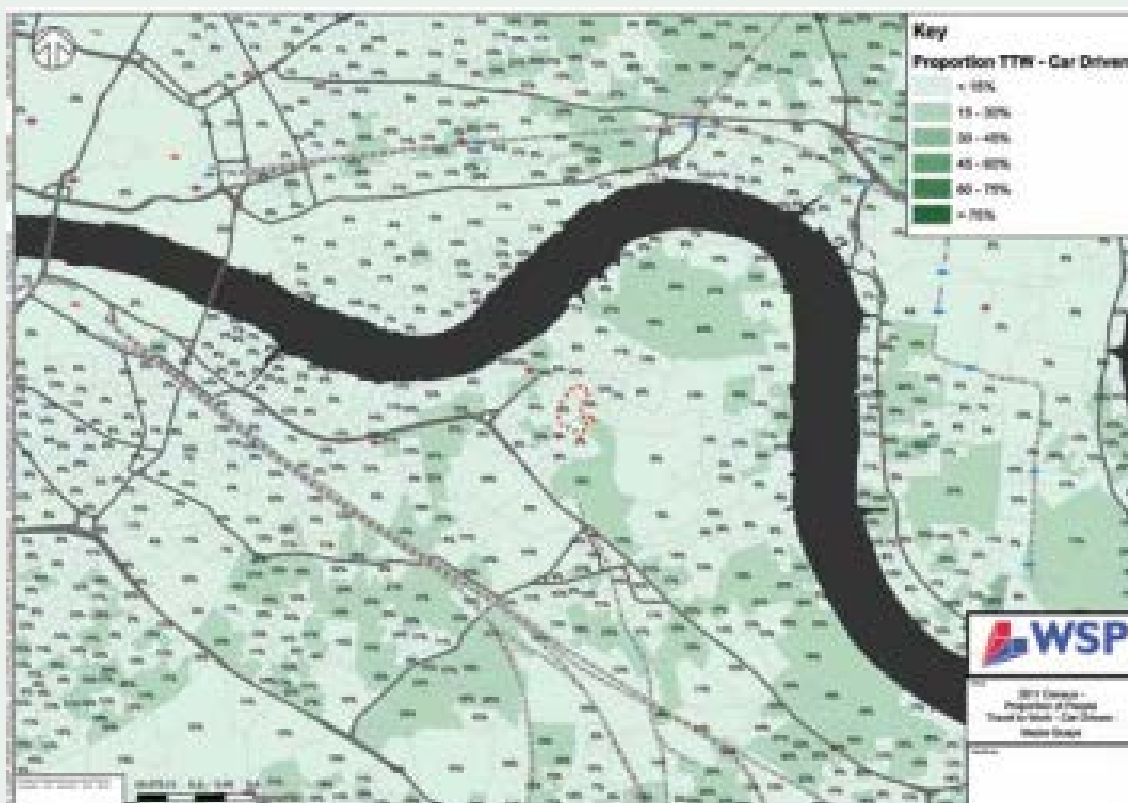
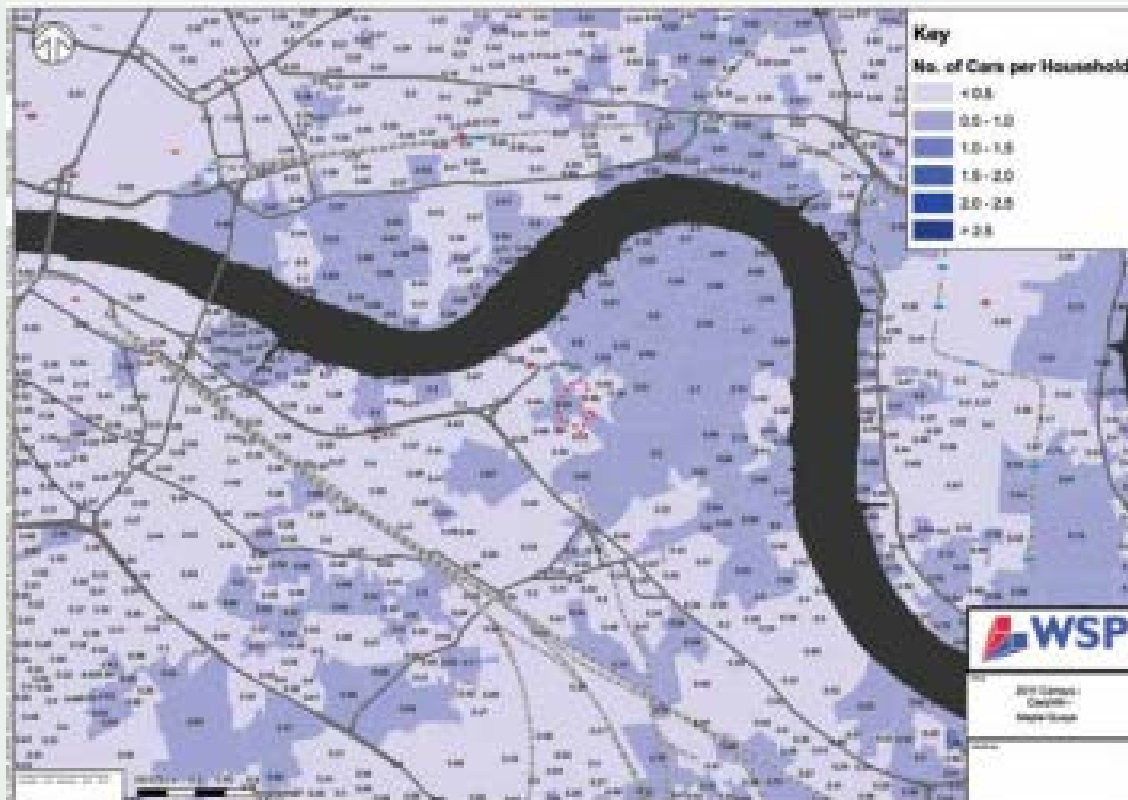
Appendix A – Census thematic maps Putney Square



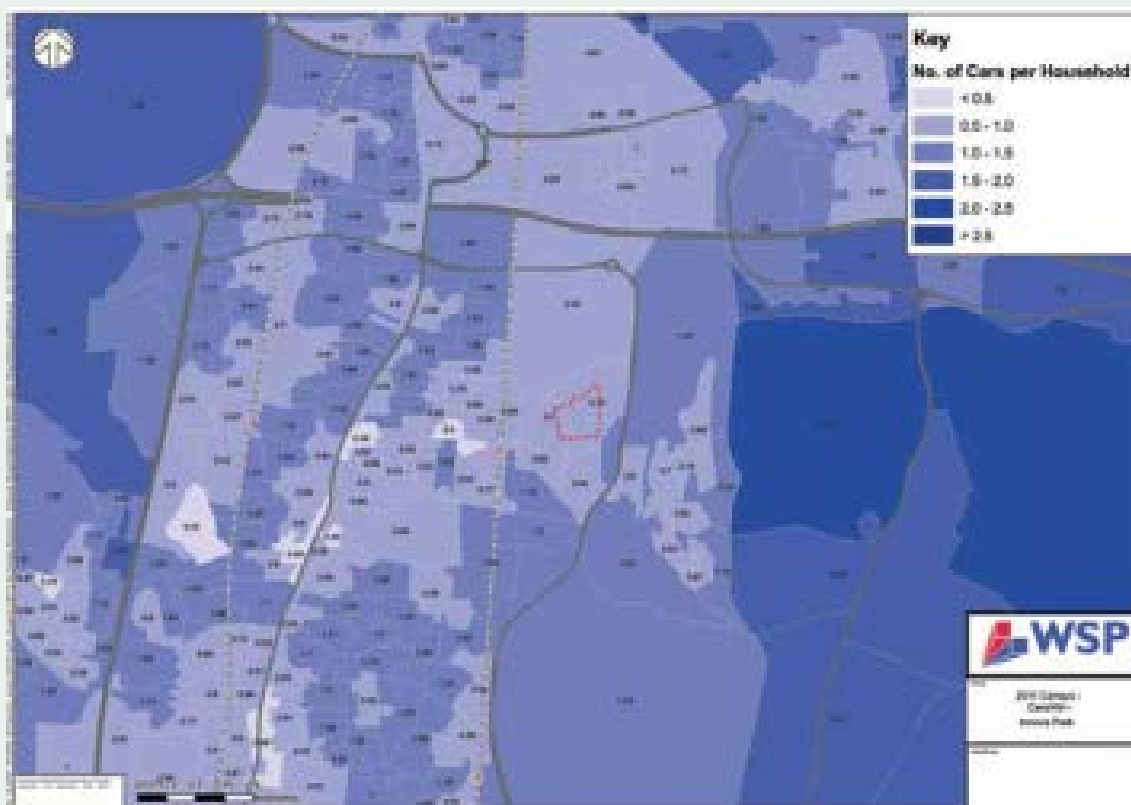
Appendix A – Census thematic maps St Andrews



Appendix A – Census thematic maps Maple Quays



Appendix A – Census thematic maps Innova Park



Appendix B – Charts of travel survey results

Chart B.1 – Commuting – Main mode modal share

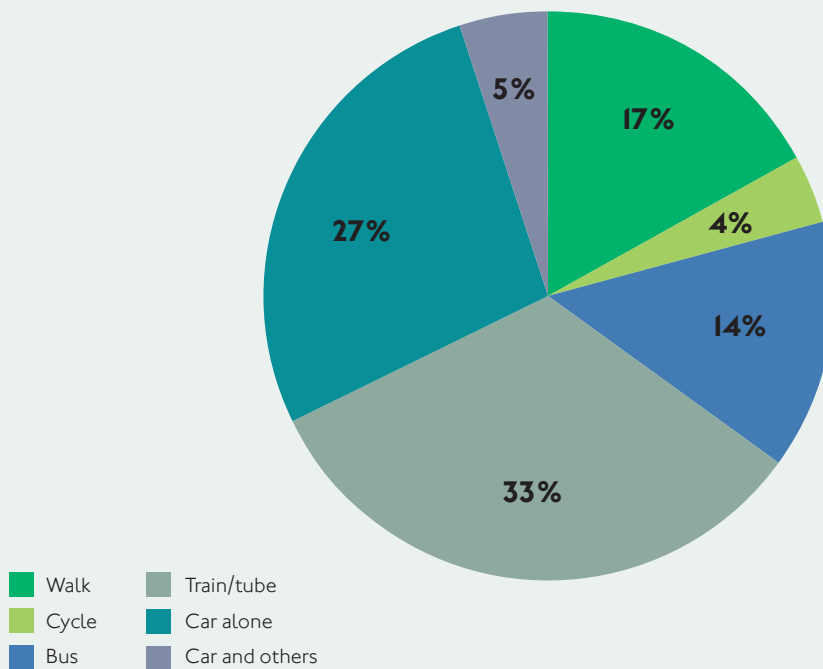


Chart B.2 – Modal use for shopping by frequency

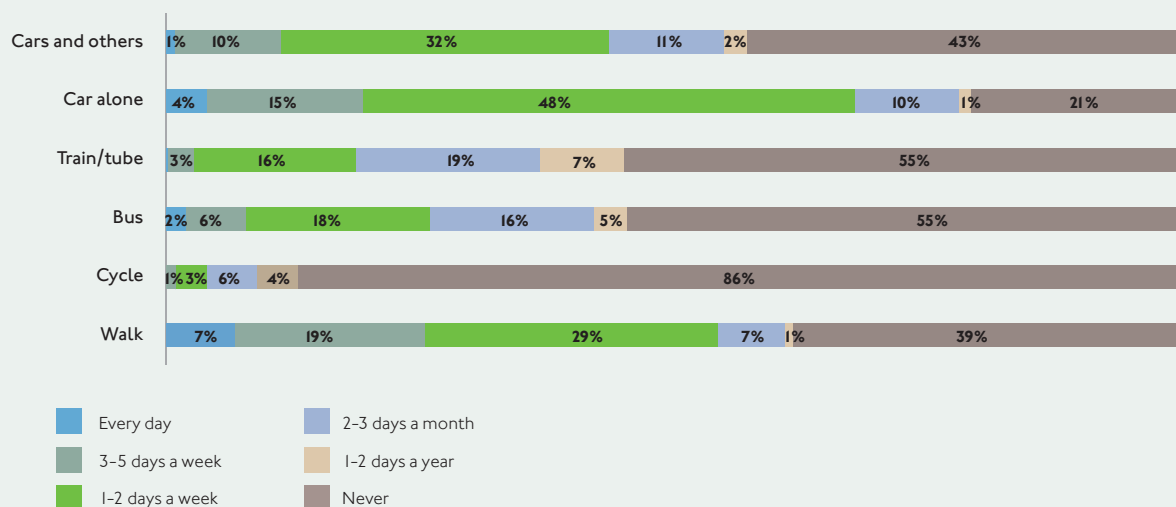
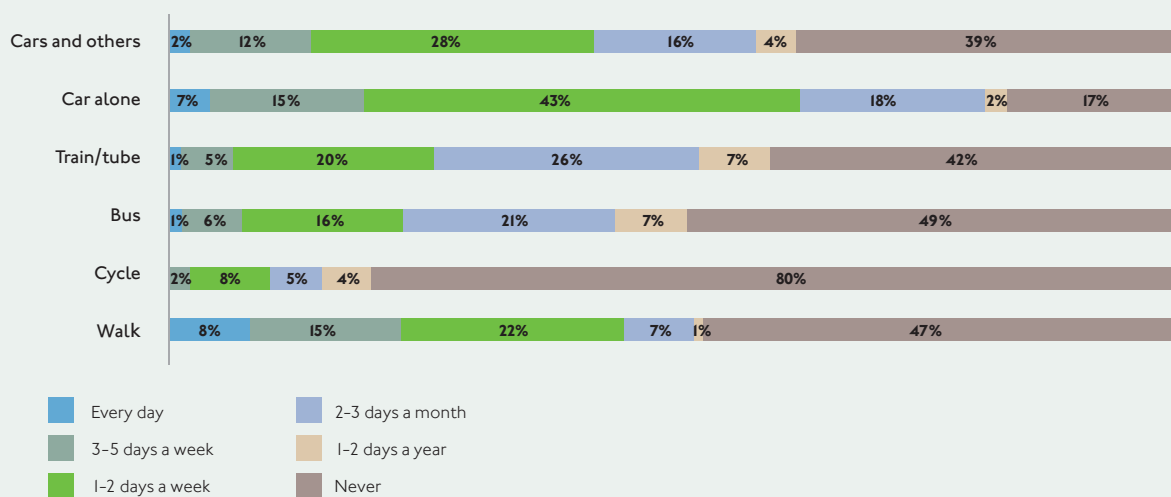
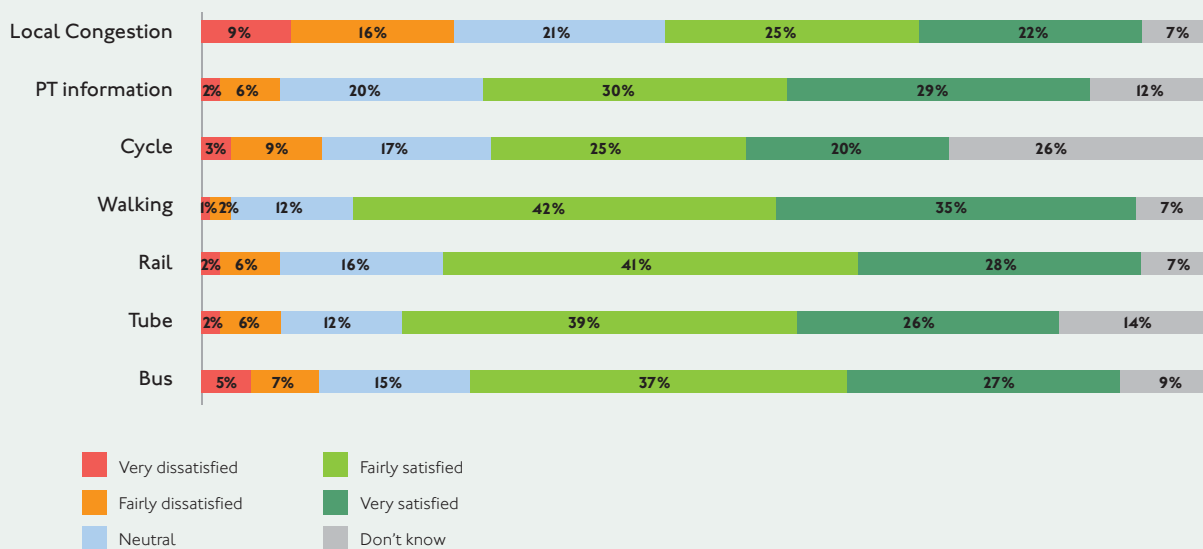


Chart B.3 – Modal use for leisure by frequency**Chart B.4 Satisfaction with local services**

Appendix B

Chart B.5 – stated reasons for changes in travel behaviour

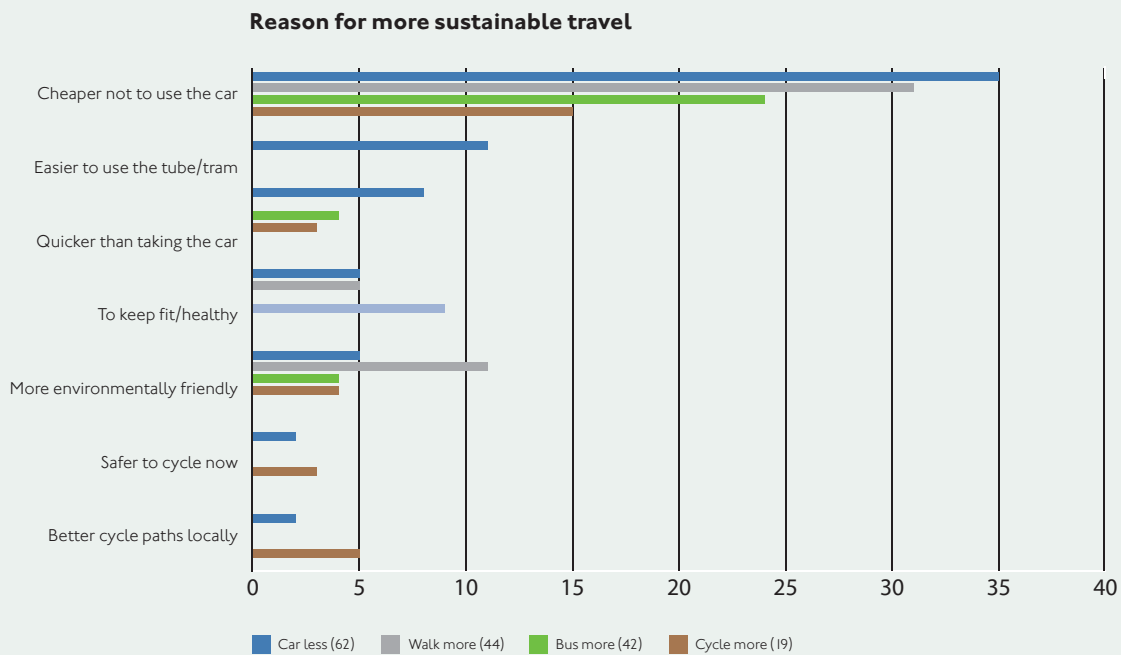
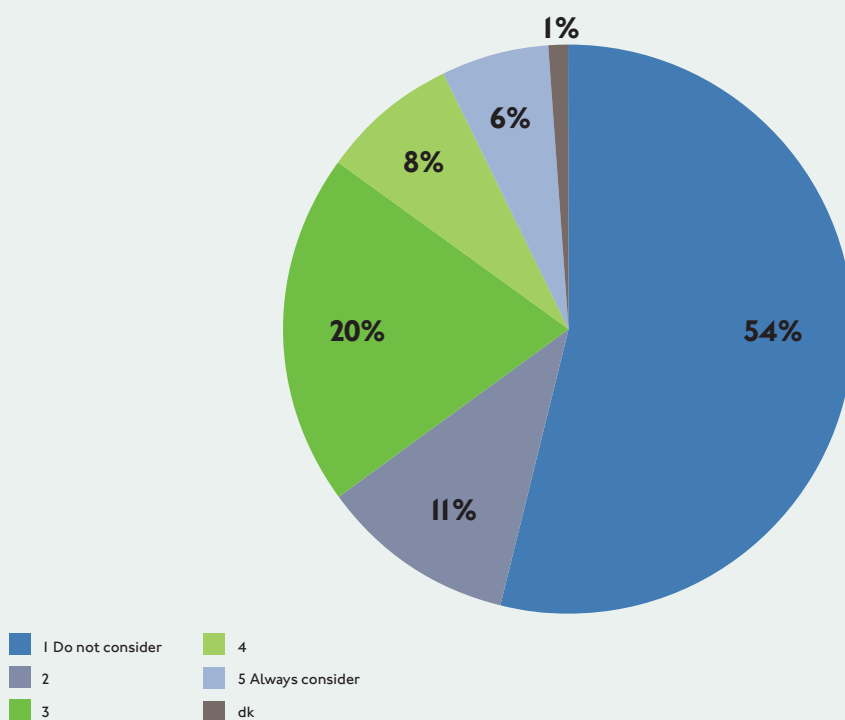


Chart B.6 – Level of concern for environmental impact of modal choice



Appendix C – Survey method and sample

In addition to the trip generation survey sites, other recent developments with innovative Travel Plan measures were selected for questionnaire and interview surveys. All residents of the selected sites were contacted at home for face-to-face questionnaire surveys, and all were asked if they would be willing to take part in subsequent and more detailed interviews.

From the full set of fourteen sites which were considered, listed below, a total of 60 COAs (Census Output Areas, which generally comprise 100 – 150 households and are the most detailed level of Census reporting) were selected from which a sample of 539 interviews was achieved, representative of the resident population of car owning households in the survey area.

Development	London Borough	Developer
Acton Gardens Phase I	Ealing	Countryside Properties
Beaufort Park	Barnet	Berkeley Group
Chelsea Bridge Wharf	Wandsworth	Berkeley Group
Imperial Wharf	Hammersmith & Fulham	Berkeley Group
Innova Park	Enfield	Kennet Properties
Kidbrooke Village	Greenwich	Berkeley Group
Maple Quays	Southwark	Barratt
New South Quarter	Croydon	Barratt
Putney Square	Wandsworth	Barratt
Queen Mary's Place	Wandsworth	Berkeley Group
Sandy Lane	Richmond Upon Thames	Linden Homes
St Andrews Hospital	Tower Hamlets	Barratt
St George Wharf	Lambeth	Berkeley
Woodberry Down	Hackney	Berkeley

The following quotas were applied, drawing on 2011 Census data for all the COAs.

Gender	
Male	50%
Female	50%
Age	
16-24	20%
25-44	54%
45-64	19%
65+	7%
Ethnicity	
White	51%
Mixed/Multiple	6%
Black / Black British	18%
Asian/ Asian British	18%
Other	7%

Tenure	
Households - Owner Occupied	35%
Households - Rented Council / Social	34%
Households - Rented Private/ Other	31%
Household composition	
Household with children under 16	25%
Household with no children	75%

Appendix C – Survey method and sample [continued]

The questionnaire was designed to elicit current travel behaviour and response to sustainable travel initiatives promoted to residents on moving to their current home. In particular the questionnaire focussed on any changes that had taken place in comparison with their previous residence and the reasons for this change. A copy of the questionnaire can be found in Appendix C.

Computer Assisted Personal Interviewing (CAPI) was conducted in-home with households selected at random within each selected COA, and screened to ensure there was a car/van in the household and that the respondent met the quota requirements. Interviewing was conducted from 20 July – 11 August inclusive.

A selection from the 45 respondents agreeing to take part in further research were re-contacted for a telephone interview to provide further detail on the rationale for their changes in travel behaviour. Respondents were selected who had demonstrated some changes in their travel behaviour from the CAPI survey, covering a range of locations and demographic profile, with 19 interviews being achieved. The topic guide used for these interviews is provided in Appendix D.

Chart C.I illustrates the sample profile for respondents in each surveyed development, in terms of gender, age working status, time at residence and tenure, based on a total sample of 539 residents in car owning households.

Chart C.I: Sample profile

	OVERALL	Acton Gardens	Beaufort Park	Chelsea Bridge Wharf	Imperial Wharf	Innova Park	Kidbrooke	Maple Quays	New South Quarter	Putney Square	Queen Mary's Place	Sandy Lane	St Andrews	St George Wharf	Woodberry Down
Gender	539	16	43	11	42	48	49	35	35	49	44	48	47	40	32
Male	49%	44%	58%	73%	50%	56%	37%	29%	63%	59%	52%	35%	45%	45%	56%
Female	51%	56%	42%	27%	50%	44%	63%	71%	37%	41%	48%	65%	55%	55%	44%
Age															
16-24	14%	25%	14%	27%	17%	19%	8%	11%	14%	10%	16%	6%	26%	8%	16%
25-34	23%	19%	46%	36%	43%	46%	18%	31%	46%	55%	14%	40%	11%	23%	31%
35-44	32%	13%	37%	18%	14%	23%	20%	26%	37%	6%	27%	21%	32%	23%	19%
45-54	17%	31%	3%	18%	14%	10%	27%	17%	3%	4%	23%	10%	13%	30%	28%
55-64	8%	0%	0%	0%	7%	2%	14%	9%	0%	16%	11%	13%	9%	15%	3%
65+	6%	13%	0%	0%	5%	0%	12%	6%	0%	8%	9%	8%	11%	0%	3%

	OVERALL	Acton Gardens	Beaufort Park	Chelsea Bridge Wharf	Imperial Wharf	Innova Park	Kidbrooke	Maple Quays	New South Quarter	Putney Square	Queen Mary's Place	Sandy Lane	St Andrews	St George Wharf	Woodberry Down
Working Status															
Working full time	56%	50%	89%	64%	57%	65%	43%	60%	89%	69%	57%	44%	32%	58%	47%
Working part-time	8%	0%	3%	0%	10%	4%	2%	11%	3%	6%	11%	6%	23%	8%	13%
Looking after house/ children	7%	6%	3%	0%	12%	10%	16%	6%	3%	0%	11%	23%	0%	3%	16%
In full time education	7%	6%	3%	27%	7%	6%	2%	9%	3%	2%	2%	10%	11%	5%	13%
Unemployed	8%	25%	3%	9%	2%	10%	24%	3%	3%	4%	2%	6%	9%	0%	6%
Retired	7%	13%	0%	0%	2%	0%	12%	9%	0%	6%	11%	10%	13%	3%	6%
Other	6%	0%	0%	0%	10%	4%	0%	3%	0%	12%	5%	0%	13%	25%	0%
Time at Residence															
Less than 1 year	27%	6%	11%	45%	19%	13%	18%	60%	11%	59%	11%	29%	9%	35%	19%
1-2 years	30%	25%	34%	9%	17%	46%	41%	14%	34%	33%	7%	31%	30%	30%	50%
More than 2 years	43%	69%	54%	45%	64%	42%	41%	26%	54%	8%	82%	40%	62%	35%	31%
Tenure															
Rented	59%	88%	31%	27%	57%	58%	73%	51%	31%	45%	55%	65%	94%	65%	78%
Owner Occupier	31%	0%	66%	73%	38%	23%	0%	49%	66%	29%	36%	33%	4%	25%	9%
Shared Owner-ship Keyworker / discounted	10%	13%	3%	0%	5%	15%	27%	0%	3%	22%	5%	0%	2%	0%	3%

The gender profile across the whole sample provides an even balance male and female respondents. Nearly a third of the sample (32%) are aged 25-34, with a further 23% aged 35-54. A similar proportion are below 25 (14%) or 55+ (14%). Just over half (56%) of residents work full time, with the remainder spread fairly evenly (between 6 and 8%) amongst the six other working status categories.

A quarter (27%) had lived at their current address for less than a year, with a further 30% between 1-2 years, and the remaining 43% over two years.

Appendix C – Survey method and sample [continued]

From those giving consent for further contact in relation to the study, nineteen depth interviews were undertaken amongst residents who noted that they were now undertaking more sustainable travel. The sample profile for this qualitative exercise is detailed below:

Gender		Borough	
Male	10	Putney Square	5
Female	9	Woodberry Down	3
Age		Imperial Wharf	4
25-34	4	Kidbrooke	1
35-44	3	Acton Gardens	4
45-54	5	Sandy Lane	2
55+	7		
Ethnicity		Time at Residence	
Working	14	Less than 1 year	4
Not Working	5	1-2 years	5
		More than 2 years	10

Appendix C – Travel survey questionnaire

Good morning/afternoon/evening. My name is and I am carrying out research for WSP, an independent transport planning consultancy. The interview is on travel in London.

Can I just ask you a couple of questions to check that you are eligible to take part in this research? I would like to assure you that all the information we collect will be kept in the strictest of confidence, and used for research purposes only. It will not be possible to identify any particular individual or address in the results.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society

REASSURANCES TO USE IF NECESSARY:

The interview will take up to 20 minutes to complete. Please note that all data will be reported in aggregate form and your answers will not be reported to our client in any way that would allow you to be identified.

IF RESPONDENT WISHES TO CONFIRM VALIDITY OF SURVEY OR GET MORE INFORMATION ABOUT AIMS AND OBJECTIVES, THEY CAN CALL:

MRS: MARKET RESEARCH SOCIETY ON 0500396999

WSP – JON CASSELL, PROJECT ADMINISTRATOR, ON 01256 318621

6.3.8 Screening questions

Q1. How many cars or light vans are there in your household? DO NOT READ OUT

- 1
- 2
- 3+
- None **THANK & CLOSE**

Q2. INTERVIEWER: RECORD GENDER

- Male
- Female

CHECK QUOTAS

Q3. Which of the following age bands do you fall into? READ OUT

- Under 16 **THANK & CLOSE**
- 16-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+
- Prefer not to say **DO NOT READ**

CHECK QUOTAS

Appendix C – Travel survey questionnaire [continued]

Q4. Which of the following best describes your working status? **READ OUT**

- Working full time (30+ hrs)
- Working part-time (9-29 hrs)
- Unemployed/ Not working
- Retired
- Looking after house/children
- In full time education
- Other
- Don't know **DO NOT READ**

CHECK QUOTAS

Q5. Which of the following groups do you consider you belong to? **READ OUT**

- WHITE British/Irish
- Any other white background
- MIXED
- ASIAN OR ASIAN BRITISH
- BLACK OR BLACK BRITISH
- CHINESE OR OTHER ETHNIC GROUP
- Refused - N/A **DO NOT READ**

CHECK QUOTAS

Main Questionnaire

Thank you, I can confirm you are in scope for the survey. The questionnaire will take up to 20 minutes to complete. You do not have to answer questions you do not wish to and you can terminate the interview at any point.

Q6. How long have you lived at your current address?

- Less than 6 months
- 6– 11 months
- 1 – 2 years
- More than 2 years
- Don't know

Q7. Which of the following best describes the tenure of your household?

- Owner Occupier
- Shared Ownership or Keyworker
- Discounted Market Sale
- Private Rented
- Housing Association Rented
- Refused - N/A
- D/K

SHOW RESPONDENT SHOWCARD A.**Q8. How often do you have access to... READ OUT**

	Every day	3-5 times a week	1-2 times a week	2-3 times a month	Less often	Never
A car or light van as a driver	1	2	3	4	5	6
A bicycle	1	2	3	4	5	6

Q9. Where do you normally park your car(s)/van(s) when at home? MULTICODE

- In own parking space
- In development with "right to park"
- In someone else's parking space with permission
- On nearby street with CPZ Permit
- On nearby street without CPZ Permit
- In off-site private car park
- In off-site public car park
- Other (specify) _____
- DK

ASK IF 0 = 1-2, SHOW RESPONDENT SHOWCARD A**Q10. Considering all the journeys you usually make, how often do you travel by each of the following modes for commuting to/from work? READ OUT**

	Every day	3-5 times a week	1-2 times a week	2-3 times a month	Less often	Never
Walk	1	2	3	4	5	6
Cycle	1	2	3	4	5	6
Bus	1	2	3	4	5	6
Train/tube	1	2	3	4	5	6
Car alone	1	2	3	4	5	6
Car and others	1	2	3	4	5	6
Motorcycle	1	2	3	4	5	6
Taxi	1	2	3	4	5	6

Appendix C [continued]

ASK IF 0 = 6, SHOW RESPONDENT SHOWCARD A.

Q 11. Considering all the journeys you usually make, how often do you travel by each of the following modes in order to **travel to/from your place of education?** **READ OUT**

	Every day	3-5 times a week	1-2 times a week	2-3 times a month	Less often	Never
Walk	1	2	3	4	5	6
Cycle	1	2	3	4	5	6
Bus	1	2	3	4	5	6
Train/tube	1	2	3	4	5	6
Car alone	1	2	3	4	5	6
Car and others	1	2	3	4	5	6
Motorcycle	1	2	3	4	5	6
Taxi	1	2	3	4	5	6

SHOW RESPONDENT SHOWCARD A.

Q 12. Considering all the journeys you usually make, how often do you travel by each of the following modes for **shopping?** **READ OUT**

	Every day	3-5 times a week	1-2 times a week	2-3 times a month	Less often	Never
Walk	1	2	3	4	5	6
Cycle	1	2	3	4	5	6
Bus	1	2	3	4	5	6
Train/tube	1	2	3	4	5	6
Car alone	1	2	3	4	5	6
Car and others	1	2	3	4	5	6
Motorcycle	1	2	3	4	5	6
Taxi	1	2	3	4	5	6

SHOW RESPONDENT SHOWCARD A.

Q 13. Considering all the journeys you usually make, how often do you travel by each of the following modes for **leisure/visiting friends and family?** **READ OUT**

	Every day	3-5 times a week	1-2 times a week	2-3 times a month	Less often	Never
Walk	1	2	3	4	5	6
Cycle	1	2	3	4	5	6
Bus	1	2	3	4	5	6
Train/tube	1	2	3	4	5	6
Car alone	1	2	3	4	5	6
Car and others	1	2	3	4	5	6
Motorcycle	1	2	3	4	5	6
Taxi	1	2	3	4	5	6

Q 14. DUMMY QUESTION: USE OF TRANSPORT MODES

- IF Q 10R 1, Q 11 R 1, Q 12R 1 or Q 13R 1 = I-5 Walk
 IF Q 10R 2, Q 11 R 2, Q 12R 2 or Q 13R 2 = I-5 Cycle
 IF Q 10R 3, Q 11 R 3, Q 12R 3 or Q 13R 3 = I-5 Bus
 IF Q 10R 4, Q 11 R 4, Q 12R 4 or Q 13R 4 = I-5 Train/Tube
 IF Q 10R 5, Q 11 R 5, Q 12R 5 or Q 13R 5 = I-5 Car alone
 IF Q 10R 6, Q 11 R 6, Q 12R 6 or Q 13R 6 = I-5 Car, with others
 IF Q 10R 7, Q 11 R 7, Q 12R 7 or Q 13R 7 = I-5 Motorcycle
 IF Q 10R 8, Q 11 R 8, Q 12R 8 or Q 13R 8 = I-5 Taxi

ASK IF Q 10R 5 OR Q 10R 6 = I-4 OR IF Q 11 R 5 OR Q 11 R 6 = I-4. OTHERS GO TO Q 16

Q 15. Do you have free parking at work or your place of education, either on-site or on-street?

Yes

No

Q 16. Have you, or any other member of your family/household taken advantage of any of the following travel benefits while living here? **READ OUT. MULTICODE.**
PLEASE TICK ALL THAT APPLY.

BRING FORWARD ALL THOSE NOT MENTIONED AT Q 16

Q 17. And which of the following benefits are available to you? **READ OUT. MULTICODE.**

IF NEEDED: A travel pack is distributed to all residents with full details on public transport availability and key services and facilities in the area.

IF NEEDED: Personal journey planning is an annual Travel Plan surgery available for a day for residents to book appointments or drop by and visit to discuss the Travel Plan and their personal travel planning needs. This can also be available via email or telephone.

- A. Travel pack when you first moved in
- B. Personalised Journey Planning advise
- C. Housing development's website with travel information
- D. Car Parking Provision
- E. Car sharing scheme
- F. Local Car club – where you can hire a car for the day
- G. Electric vehicle charging point
- H. Free pre-paid Oyster Card
- I. Free mini-bus shuttle service
- J. Cycle Training & Discounts on cycle purchase
- K. Secure cycle Parking Provision
- L. Cycle maintenance facilities
- M. Barclays Cycle Hire/"Boris Bike" on-site/nearby
- N. Year free membership to the London Cycle Campaign
- O. Good quality footpaths with easy access to local area
- P. Other (specify)

None of the above **EXCLUSIVE. DO NOT READ.**

Q 16

Q 17

Appendix C [continued]

BRING FORWARD ALL THOSE MENTIONED AT Q 16

Q 18. Did you find the experience of these benefits useful? **READ OUT.**

	Yes	No
A. Travel pack when you first moved in	1	2
B. Personalised Journey Planning – advise	1	2
C. Housing development's website with travel information	1	2
D. Car Parking Provision	1	2
E. Car sharing scheme	1	2
F. Local Car club – where you can hire a car for the day	1	2
G. Electric vehicle charging point	1	2
H. Free pre-paid Oyster Card	1	2
I. Free mini-bus shuttle service	1	2
J. Cycle Training & Discounts on cycle purchase	1	2
K. Secure cycle Parking Provision	1	2
L. Cycle maintenance facilities	1	2
M. Barclays Cycle Hire / "Boris Bike" on-site / nearby	1	2
N. Year free membership to the London Cycle Campaign	1	2
O. Good quality footpaths with easy access to local area	1	2
P. Other (specify)	1	2

Q 19. Do you travel more or less by each of the following modes while living in your current residence, or is it about the same as before? **READ OUT.**

	More	Same	Less	Don't know
IF Q 14 = 1 Walk	1	2	3	4
IF Q 14 = 2 Cycle	1	2	3	4
IF Q 14 = 3 Bus	1	2	3	4
IF Q 14 = 4 Train/Tube	1	2	3	4
IF Q 14 = 5 Car alone	1	2	3	4
IF Q 14 = 6 Car, with others	1	2	3	4
IF Q 14 = 8 Taxi	1	2	3	4

Q20. IF Q 19R5 OR Q 19R6 = 3 ASK. OTHERS GO TO Q21**Why are you travelling by car (alone/with others) less?**

Cheaper not to use the car
 More environmentally friendly
 Decided to keep fit by cycling
 Better cycle paths locally
 Safer to cycle now
 Easier to use the bus
 Easier to use the train
 Easier to use the tube
 Quicker than taking the car
 Other (Specify)

Q21. IF Q 19R2 = 1 ASK. OTHERS GO TO Q22**Why are you cycling more?**

Cheaper not to use the car
 More environmentally friendly
 Decided to keep fit by cycling
 Better cycle paths locally
 Safer to cycle now
 Easier to use the bus
 Easier to use the train
 Easier to use the tube
 Quicker than taking the car
 Other (Specify)

Q22. IF Q 19R 1 = 1 ASK. OTHERS GO TO Q23**Why are you walking more?**

Cheaper not to use the car
 More environmentally friendly
 Decided to keep fit by cycling
 Better cycle paths locally
 Safer to cycle now
 Easier to use the bus
 Easier to use the train
 Easier to use the tube
 Quicker than taking the car
 Other (Specify)

Appendix C [continued]

Q23. IF Q19 R3 = 1 ASK. OTHERS GO TO Q24

Why are you using the **bus** more?

Cheaper not to use the car
 More environmentally friendly
 Decided to keep fit by cycling
 Better cycle paths locally
 Safer to cycle now
 Easier to use the bus
 Easier to use the train
 Easier to use the tube
 Quicker than taking the car
 Other (Specify)

Q24. IF Q19 R4 = 1 ASK. OTHERS GO TO Q25

Why are you using the **train/tube** more?

Cheaper not to use the car
 More environmentally friendly
 Decided to keep fit by cycling
 Better cycle paths locally
 Safer to cycle now
 Easier to use the bus
 Easier to use the train
 Easier to use the tube
 Quicker than taking the car
 Other (Specify)

Q25. IF Q14 = 3 OR 4 ASK. OTHERS GO TO Q26

Which of the following changes would most encourage you to use public transport for some journeys in your local area? **READ OUT. MULTICODE.**

Cheaper fares
 Know which bus/train/tube to catch to get to where I want to go
 Well-lit bus stops and train/tube stations which discourage anti-social behaviour
 Friendly bus drivers that let you know where to get off the bus
 Air conditioning on buses and trains/tubes
 Able to buy tickets on the bus
 Safe and direct routes to bus stop/station
 More frequent services
 Services operating later in the evening
 Services operating earlier in the morning
 Other (please specify) _____
 Nothing would encourage me **DO NOT READ. EXCLUSIVE**

Q26. IF Q14 = 2 SAY: Which of the following enhancements would encourage you to cycle for some journeys in your local area? **IF Q14 = 2 SAY:** Which of the following enhancements for cyclists would you most like to see? **READ OUT. MULTICODE.**

- Safer, better lit cycle paths
- Improve cycle paths on the journey to town centre/rail station
- Improve cycle parking at this development
- Arrangements to buy a bicycle at discount
- Improved crossing facilities at major road junctions
- Improved cycle parking at local facilities (please specify where) _____
- Other (please specify) _____
- Nothing would encourage me **DO NOT READ OUT. EXCLUSIVE.**

Q27. SHOW RESPONDENT SHOWCARD B.

Thinking about your travel here in your area, how satisfied are you with local services?

Please use a scale of 1 to 5, where 1 is very satisfied and 5 is very dissatisfied.

How satisfied are you with the local.. **READ OUT.**

	Very satisfied	Fairly satisfied	Neutral	Fairly dissatisfied	Very dissatisfied	Don't use
Bus services	1	2	3	4	5	6
Tube/underground services	1	2	3	4	5	6
Rail services	1	2	3	4	5	6
Walking routes	1	2	3	4	5	6
Cycling routes	1	2	3	4	5	6
Information on bus and rail services	1	2	3	4	5	6
Levels of local congestion	1	2	3	4	5	6

Q28. To what extent do you consider the impact of transport emissions when deciding how to travel, using a scale from 1 – 5 with 1 being “do not consider” and 5 being “always consider.”

- 1 do not consider
- 2
- 3
- 4
- 5 always consider
- 6 Don't know **DO NOT READ OUT.**

Appendix C [continued]

Q29. We really appreciate the time that you have given us today. Would you be willing to be contacted again for clarification purposes or be invited to take part in other research for WSP?

Yes, for both clarification and further research

Yes, for clarification only

Yes, for further research only

No

Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm my credentials please call the MRS free on 0500 396999.

HAND OVER THE THANK YOU SLIP.

Please can I take a note of your name and where we can contact you for quality control purposes?

Respondent name:

Telephone:

INTERVIEWER CONFIRMATION

I confirm that this interview was conducted under the terms of the MRS code of conduct and is completely confidential.

Appendix D – Depth interview topic guide

Appendix D DEPTH INTERVIEW TOPIC GUIDE

Good morning/afternoon/evening. My name is from WSP. Thank you for taking part in a survey for us and agreeing to speak further about your travel.

Are you happy for us to record the interview? We will not mention your name; just use your comments to help us in writing our report . **ONLY RECORD IF CONSENTED.**

I would like to assure you that all the information we collect will be kept in the strictest of confidence, and used for research purposes only. It will not be possible to identify any particular individual in the results. Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society.

The interview will take up to 30 minutes to complete. As a token of thanks we will post you a £15 Marks & Spencer voucher.

If respondent wishes to confirm validity of survey or get more information about aims and objectives, they can call:

MRS: Market Research Society on 0500396999

WSP – Jon Cassell, project administrator, on 01256 318621

Q1. What is the year, make and model of the car/van you drive/use?

Q2. Do you feel that you now park your car in a more convenient location than you used to when you lived elsewhere?

Yes No

Q3. Was parking a consideration in your decision to move here?

Yes No

IF YES – In what way?

Q4. Have any costs associated with parking your car at home changed since moving here e.g. permit costs?

Yes No

IF YES –In what way?

Q5. Has the cost of parking your car at work/your place of education changed since relocating?

Yes No

IF YES – In what way?

Appendix D [continued]

Q6. In what way have the following schemes or incentives offered by your new residence reduced your car travel or helped you to travel more by walking/bus /tube/train?

PROBE ON ACTUAL DETAIL OF ANY USE FROM Q 16, Q 19

- A. Travel pack when you first moved in
- B. Personalised journey planning service
- C. Housing development's travel information website
- D. Car parking provision
- E. Car sharing scheme
- F. Local car club (where you can hire a car for the day)
- G. Electric vehicle charging point
- H. Free pre-paid Oyster Card
- I. Free mini-bus shuttle service
- J. Cycle Training / discounts on cycle purchases
- K. Secure cycle parking
- L. Cycle maintenance facilities
- M. Barclays Cycle Hire / 'Boris Bikes' on-site / nearby
- N. Year free membership to the London Cycle Campaign
- O. Good quality footpaths with easy access to local area

Q7. Is it easier to get to the railway/tube station where you live now?

Yes No

IF YES – In what way?

Q8. In what way would you say that your satisfaction with your local walking or cycle routes is different to those around your previous residence?

Q9. In what way would you say that congestion on roads local to your new residence is different to that around your previous residence?

Q 10. IF RELEVANT Do you feel that you have reduced your car travel as a result of a change in your environmental awareness of carbon emissions?

Q 11. IF RELEVANT Would you say that you have reduced your car travel to keep fit and healthy?

Yes No

IF YES – In what way?

Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm my credentials or those of WSP please call the MRS free on 0500 396999.



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