CANEPARO ASSOCIATES
Transport Planning & Highway Design

Moorgarth Living

48 Churchway, London Borough of Camden

Transport Statement

August 2018

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Contents

Appendices

1 INTRODUCTION

1.1 Caneparo Associates has been appointed by Moorgarth Living, to provide traffic and transportation advice in relation to the proposed redevelopment of 48 Churchway, which is located within the London Borough of Camden (LBC).

1.2 The site is located on the eastern side of Churchway. According to the Design and Access Statement that accompanies the planning application, the application (that this report supports) proposes the demolition of the existing single storey building and its basement accessed from Churchway, and the creation of a new office building broadly within the agreed volume and massing of the previous planning application scheme for the site (LBC planning reference 2016/6599/P). This previous scheme received a resolution to grant planning permission subject to s.160 at Planning Committee in April 2017.

1.3 This report reviews the proposal in traffic and transportation terms; it sets out the existing situation and then considers the effects of the proposal in terms of trip generation, parking, servicing and refuse collection.

1.4 The remainder of the report is set out as follows:

- Section 2 - describes the existing situation and details the accessibility of the site
- Section 3 - sets out the development proposals
- Section 4 - considers the effects of the proposals
- Section 5 - provides a summary and conclusion.

2 EXISTING SITUATION & SITE ACCESSIBILITY

The Site and Surrounding Area

2.1 The site is located on the eastern side of Churchway and currently provides 288sqm(GEA) of Class B1 Office floorspace. Churchway is a secondary street which runs north-south, connecting Euston Road (to the south) with Doris Way (to the north). Euston Station is located to the west in close proximity of the site.

2.2 The location of the site is shown below at **Figure 1**.

Figure 1: Site Location Plan

2.3 The eastern boundary of the site is enclosed on three sides by Nos 39, 41 and 43 Charlton Street. Buildings at Nos 41 and 43 are owned by the applicant but are not subject to this application.

2.4 Churchway is a quiet street, predominantly residential in nature, with 4 to 5 storey mansion blocks containing apartment lining the majority of the street.

Local Highway Network

2.5 Churchway is a two-way single carriageway road approximately 6 metres in width that adjoins Euston Road to the south in the form of a signalised junction. To the north, bollards are in place

to prohibit vehicle movements north from Churchway and south onto the street. It is noted that the central bollard is moveable to presumably allow access by emergency vehicles.

2.6 Wide, well-lit footways are present on both sides of the carriageway, with dropped kerbs and tactile paving present also.

2.7 To the south Churchway adjoins Euston Road which is a significant route through central London connecting Westway / A40 in the west from Paddington, through Marylebone and Fitzrovia across to Clerkenwell, Shoreditch and the City of London.

Parking

2.8 The site is located within Controlled Permit Zone 'GA-G' with spaces available to resident permit holders only Monday to Friday 08:30-18:30.

Site Accessibility

Walking

2.9 It is generally accepted that for journeys of up to 2 kilometres walking is an appropriate mode to replace car trips and this is set out in the IHT document 'Guidelines for Providing for Journeys on Foot', which suggests a maximum 'acceptable' walking distance for pedestrians without mobility impairment of 2 kilometres.

2.10 The site benefits from a good pedestrian environment with well-maintained footways and street lighting along Churchway, Charlton Street and surrounding roads. There are signalised pedestrian crossings with dropped kerbs, tactile paving and refuge islands located across Euston Road, Grafton Place and Midland Road providing safe crossing opportunities to meet desire lines across these roads which experience high volumes of traffic.

2.11 The central location of the site affords excellent accessibility opportunities on foot with its close proximity to the Camden and St Pancras areas. The site is a very short walk (16 metres / 2 minutes) from Euston Station where overland and underground rail services can be accessed along with a series of bus stops and a significant number of local shops, services and amenities.

Cycling

2.12 "Cycling Friendly Infrastructure" guidelines published by the CIHT highlight that there is "substantial potential for substituting cycling for driving" for distances up to 5 miles.

2.13 Roads in the vicinity of the site including Cardington Road to the west are marked as "routes signed or marked for use by cyclists on a mixture of quiet or busier roads" by TfL Local Cycling Guides. Local cycle routes provide a good level of access between the site and the West End of London to the south.

2.14 A number of Santander cycle hire docking stations are located within a short walk of the site. These could be used by future employees and visitors to the site. The nearest cycle hire docking stations are summarised below:

- Doric Way, Somers Town – 29 spaces;
- Ossulston Street, Somers Town – 29 spaces; and
- Endsleigh Gardens, Euston – 31 spaces.

Public Transport

Public Transport Accessibility Level (PTAL)

2.15 Public Transport Accessibility Levels (PTALs) are a theoretical measure of the accessibility of a given point to the public transport network, taking into account walk access time and service availability. The method is essentially a way of measuring the density of the public transport network at a particular point.

2.16 The PTAL is categorised in six levels, 1 to 6 where 6 represents a high level of accessibility and 1 a low level of accessibility. The PTAL levels 1 and 6 are further subdivided into A and B levels, with level A indicating the location is rated towards the lower end of the PTAL category and B towards the higher end.

2.17 It has been determined that the site has a PTAL rating of 6b, demonstrating an excellent level of accessibility to public transport and is awarded the highest possible PTAL score. **Appendix A** includes a copy of TfL's calculation for this.

Bus Services

2.18 A number of bus services are located within a short walk distance of the site with stops located within the Euston gyratory, located within a circa 160m (circa 2 minutes) walk distance from the site.

2.19 These bus stops are served by 120 bus services per hour. A copy of the TfL bus map is included at **Appendix B.**

Rail Services

2.20 As highlighted above, Euston Railway station is located within close proximity of the site. National Rail, London Underground and London Overground rail services can be accessed from the station. The station provides access to London Underground Northern Line services along both the 'Charing Cross' and 'Bank' branches, and Victoria Line services between Brixton and Walthamstow. Mainline railway services provide direct access to North West England and the midlands.

2.21 Kings Cross Railway Station and St Pancras International Railway Station are located approximately 650 metres to the east of the site. Mainline railway services connecting London to the midlands and north east of England can be accessed from these stations. International services run directly to Paris, Brussels and Amsterdam and the London Unground station is served by the northern (Bank branch), Victoria, Piccadilly, Circle, Metropolitan and Hammersmith and City lines.

3 DEVELOPMENT PROPOSAL

3.1 The development proposal comprises the demolition of the existing single storey building and the construction of a new office building with space at basement, ground, first, second and partial third floor levels, providing 690sqm (GEA) of class B1 office floorspace in total.

Access

3.2 A new primary entrance for pedestrians is to be constructed at the front of the site in the same location as the existing access. No vehicular access is proposed into the site, as per the existing situation.

Car Parking

3.3 The proposed development will not incorporate any on-site car parking provisions as per the existing and permitted development.

Cycle Parking

3.4 The development will provide cycle parking in accordance with adopted London Plan standards. As such the development will provide eight long stay cycle spaces for staff within the basement accessed via a lift and 2 short stay spaces for visitors adjacent to the primary access into the site. In addition, a shower room would be provided on-site at basement level. The proposed cycle facilities would encourage employees and visitors to travel to and from the site by bicycle.

Servicing and Refuse Collection

3.5 Servicing and refuse collections will be undertaken on-street from Churchway as per the existing situation. An appropriately sized refuse and recycling store is located at ground floor level close to the access into the site which will provide easy access for operatives on collection day. Refuse storage is discussed in further detail later in this report.

4 EFFECTS OF THE DEVELOPMENT PROPOSALS

4.1 This section of the report considers the potential effects of the proposals in terms of trip generation, parking, servicing and refuse collection.

Trip Generation

4.2 As highlighted earlier in this report, according to the associated Design and Access Statement the proposed development is considered to be broadly within the agreed volume and massing of the recently approved / agreed scheme (reference 2016/6599/P). As such, it is unlikely that the latest proposals would result in a material change in the floor area at the site and therefore the number of trips that would be generated by the site compared with the approved / agreed scheme.

4.3 Notwithstanding, the potential trip generation for the proposed development has been considered below.

4.4 In order to estimate the potential trip generation for the site following implementation of the proposals, should planning permission be granted, reference has been made to survey data contained within the Trip Rate Information Computer System (TRICS) database, 'Employment – Office' category. Sites within 'town centre' and 'edge of town centre' locations have been considered.

4.5 The estimated peak hour person trip rates are summarised in **Table 4.1** below with the TRICS output included at **Appendix C.**

Table 4.1: Total Person Trip Rates: Office Use (Trips per 100sqm)			
Period	**Arrivals**	**Departures**	**Two-Way**
AM Peak (08:00-09:00)	2.491	0.085	2.576
PM Peak (17:00-18:00)	0.216	2.221	2.437

4.6 The above trip rates have been applied to the proposed office floor area (690sqm) to give an indication of the number of trips that could be expected. The estimated potential trip generation for the proposed office use is set out in **Table 4.2**.

Table 4.2: Estimated Total Person Trip Generation (690sqm)			
Period	**Arrivals**	**Departures**	**Two-Way**
AM Peak (08:00-09:00)	17	1	18
PM Peak (17:00-18:00)	1	15	16

4.7 **Table 4.2** indicates that the proposed development has the potential to generates in the region of 16 to 18 two-way total person trips per hour during peak times.

Modal Split

4.8 To determine the likely modal split of the trips in the AM and PM peak periods, 2011 Census Method of Travel to Work data (workplace population) has been obtained and reviewed for the '2011 Super Output Areas – Middle Layer' in which the site is located (Camden 022). The full Census data as originally extracted is provided at **Appendix D**.

4.9 As the development is car free and there are parking controls in the surrounding area, the number of car trips is expected to be low. Nevertheless, it is acknowledged that there may be a small number of car trips associated with the site.

4.10 The estimated trip generation by mode is set out in **Table 4.3** below.

Table 4.3: Estimated Multi-Modal Trip Generation (Two-way Trips)			
Mode	**Split (%)**	**Number of Two-Way Trips**	
		AM Peak	**PM Peak**
Underground	35.6%	6	6
Rail	29.9%	5	5
Bus	13.2%	2	2
Taxi	0.3%	0	0
Motorcycle	1.2%	0	0
Car Driver	8.9%	2	1
Car Passenger	0.8%	0	0
Bicycle	3.3%	1	1
Pedestrian	6.5%	1	1
Other	0.3%	0	0

4.11 **Table 4.3** above indicates that the majority of trips are expected to be undertaken by public transport during peak times with circa 78% of all trips (circa 13 two-way trips per hour) likely to be undertaken by underground, rail or bus.

4.12 Based on the above, the site would be expected to generate a negligible number of vehicle trips during peak times. It is anticipated that the proposed development would generate in the region of 2 two-way vehicle trips per hour during the morning peak period and 1 vehicle trip per hour during the evening peak period.

4.13 With reference to the above, the trip generating potential for the proposed development would be very low and would not be noticeable to other transport users or have a material impact on the operation of the local transport network, especially in the context of the significant number of trips that are already taking place within the vicinity of the site. In addition, the potential trip generation associated with the proposals would be offset to some extent by the existing use and also the approved development which, as highlighted earlier in this report, is similar in volume and massing.

Deliveries and Servicing

4.14 As highlighted earlier in this report, it is proposed that all servicing associated with the proposed use would be undertaken on-street from Churchway (where permitted) in line with the existing servicing arrangements for the existing use and some of the adjacent uses.

4.15 Based on the typical servicing requirements of office uses it is expected that the majority of deliveries would be by bicycle / motorcycle courier or small to medium sized vehicles, e.g. transit vans. These vehicles could easily be accommodated on-street, especially when considered in the context of the existing and adjacent uses.

4.16 With regard to servicing activity, it is anticipated that deliveries to the proposed development would have a negligible effect on the operation of the local road network and would likely fall within the day to day variation in existing vehicle trips already taking place. Furthermore, the number of delivery trips to the proposed use would be off-set by the number of delivery trips associated with the existing and approved office development.

4.17 Refuse and recycling collection would also be undertaken from Churchway in the same way as the existing use and neighbouring uses.

4.18 Refuse and recyclable items would be stored within a designated area conveniently located close to the site frontage.

4.19 The impact of the development proposals on existing refuse and recycling arrangements would be negligible.

5 SUMMARY & CONCLUSION

Summary

5.1 Caneparo Associates has been appointed by Moorgarth Living, to provide traffic and transportation advice in relation to a planning application for the proposed redevelopment of 48 Churchway, within the London Borough of Camden.

5.2 The site is located on the eastern side of Churchway and currently comprises a building providing circa 288sqm of Class B1 office floorspace.

5.3 According to the Design and Access Statement that accompanies the planning application, the application (that this report supports) proposes the demolition of the existing single storey building and its basement accessed from Churchway, and the creation of a new office building broadly within the agreed volume and massing of the previous planning application scheme for the site (LBC planning reference 2016/6599/P). This previous scheme received a resolution to grant planning permission subject to s.160 at Planning Committee in April 2017.

5.4 The proposals envisage a new office building with space at basement, ground, first, second and partial third floor levels, providing 690 sqm (GEA) of class B1 office floorspace in total. Pedestrian access to the proposed development would be from Churchway in accordance with the existing and permitted uses.

5.5 This report demonstrates the following:

- The site has a PTAL rating of 6b, demonstrating an excellent level of accessibility to public transport. The site is accessible by a wide range of sustainable / non-car modes including foot, cycle and public transport.
- The site is located within walking distance of local services and amenities.
- No on-site car parking would be provided in accordance with the existing scheme and agreed / previous planning application.
- The proposed cycle parking provisions and facilities comply with local policy guidance.
- The servicing and delivery requirements for the proposed development would have a negligible adverse effect on the local highway network and existing waste collection arrangements for the local area.

- The estimated trip generation associated with the proposed development is very low and therefore would not be noticeable to other road users or impact on the operation of the local highway network.

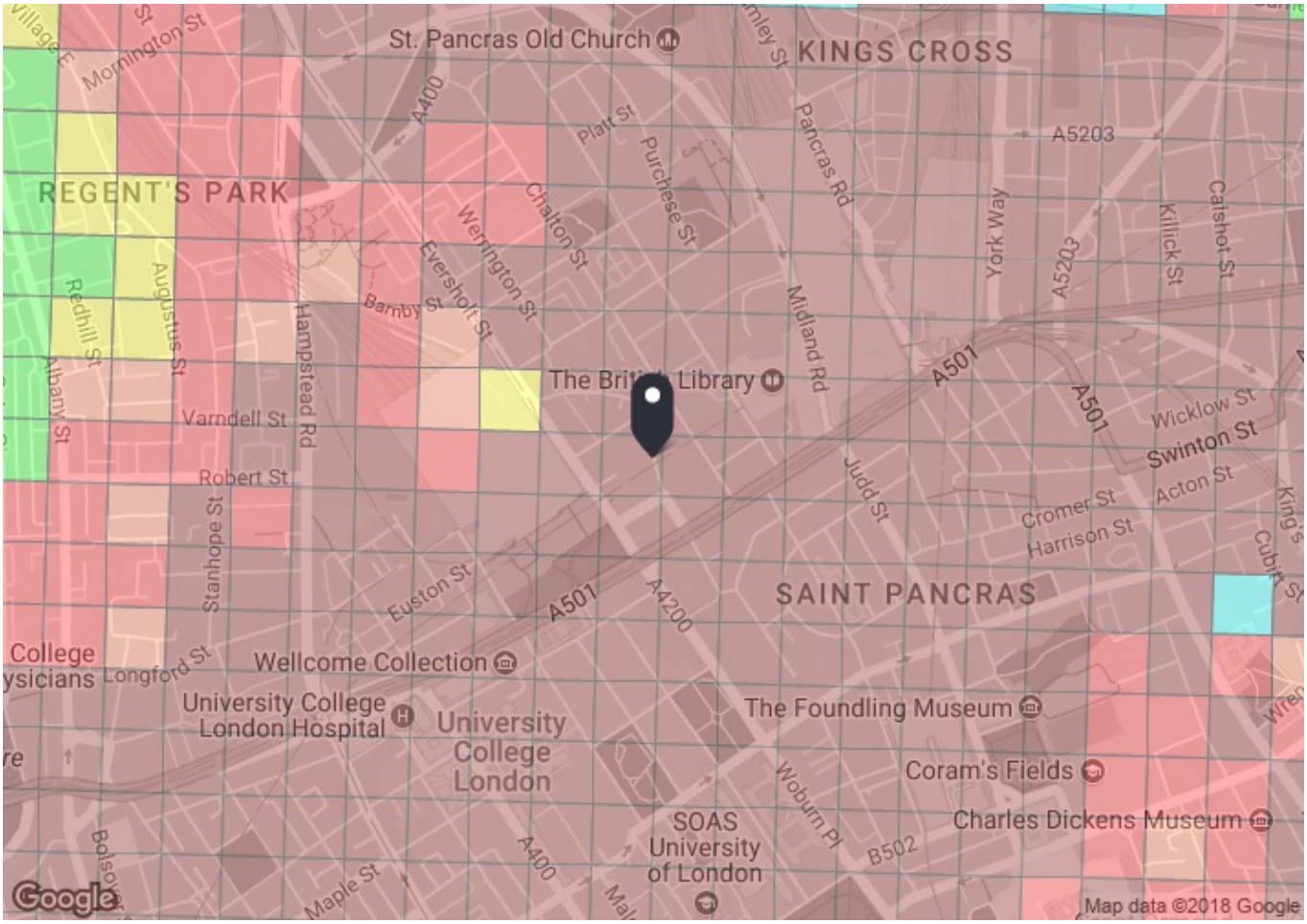
Conclusion

5.6 In conclusion, the development proposals are reasonable and appropriate for the location and can be considered sustainable in accordance with the aims and objectives of National Planning Policy Guidance. In addition, the proposal is considered acceptable in transport terms as the residual cumulative transport impacts would not be severe. Therefore, there are no traffic or transport reasons why the application should not be granted planning permission.

Appendix A

PTAL REPORT

TRANSPORT FOR LONDON



PTAL output for Base Year
6b

31 Churchway
31 Churchway, Kings Cross, London NW1 1LJ, UK
Easting: 529783, Northing: 182752

Grid Cell: 91959

Report generated: 20/06/2018

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

PTAL (cell size: 100m)

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	EUSTON BUS STATION	10	245.28	4.5	3.07	8.67	11.73	2.56	0.5	1.28
Bus	EUSTON BUS STATION	59	245.28	10	3.07	5	8.07	3.72	0.5	1.86
Bus	EUSTON BUS STATION	390	245.28	8	3.07	5.75	8.82	3.4	0.5	1.7
Bus	EUSTON BUS STATION	30	245.28	7.5	3.07	6	9.07	3.31	0.5	1.65
Bus	EUSTON BUS STATION	73	245.28	18	3.07	3.67	6.73	4.46	0.5	2.23
Bus	EUSTON BUS STATION	476	245.28	7.5	3.07	6	9.07	3.31	0.5	1.65
Bus	EUSTON BUS STATION	18	245.28	17	3.07	3.76	6.83	4.39	0.5	2.2
Bus	EUSTON BUS STATION	68	245.28	9	3.07	5.33	8.4	3.57	0.5	1.79
Bus	EUSTON BUS STATION	205	245.28	8	3.07	5.75	8.82	3.4	0.5	1.7
Bus	UPPER WOBURN PLACE	91	272.46	9	3.41	5.33	8.74	3.43	0.5	1.72
Bus	EUSTON STN EVERSHOLT ST	168	122.03	9	1.53	5.33	6.86	4.37	0.5	2.19
Bus	EUSTON STN EVERSHOLT ST	253	122.03	12	1.53	4.5	6.03	4.98	1	4.98
Rail	St Pancras	'BEDFDM-SVNOAKS 1E62'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BROMLYS 1E83'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-ORPNGTN 1L60'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-SUTTON 1O13'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-KENTHOS 1S85'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BRGHTN 1T11'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BRGHTN 1T15'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'BRGHTN-BEDFDM 1T83'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-SUTTON 1V23'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-SUTTON 1V82'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 1W06'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 1W81'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BRGHTN 1W84'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BRGHTN 1W86'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STALBCY-SVNOAKS 2E11'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	St Pancras	'BEDFDM-SVNOAKS 2E19'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'LUTON-SVNOAKS 2E21'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STALBCY-SVNOAKS 2E95'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-LUTON 2O00'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-BEDFDM 2O04'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-STALBCY 2O06'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-LUTON 2O10'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	St Pancras	'LUTON-SUTTON 2O17'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'STALBCY-SUTTON 2O21'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STALBCY-SUTTON 2O29'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'LUTON-BCKNHMJ 2S91'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STALBCY-BROMLYS 2S93'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 2T02'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 2T04'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-BRGHTN 2T15'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	St Pancras	'BEDFDM-BRGHTN 2T25'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-LUTON 2T99'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-STALBCY 2V02'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-STALBCY 2V08'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'BEDFDM-SUTTON 2V15'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-BEDFDM 2V16'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'LUTON-SUTTON 2V19'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SUTTON-KNTSHTN 2V20'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STALBCY-SUTTON 2V27'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'LUTON-SUTTON 2V31'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 2W08'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 2W12'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BRGHTN-BEDFDM 2W16'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ASHFKY-BEDFDM 1E61'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ASHFKY-BEDFDM 1E63'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'RCHT-BEDFDM 1E67'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Rail	St Pancras	'SVNOAKS-BEDFDM 1E69'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BROMLYS-BEDFDM 1E82'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BCKNHMJ-BEDFDM 1G65'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'KENTHOS-BEDFDM 1G71'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ORPNGTN-STALBCY 2D93'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ORPNGTN-LUTON 2D95'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SVNOAKS-STALBCY 2E59'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'SVNOAKS-LUTON 2E61'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SVNOAKS-WHMPSTM 2E63'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SVNOAKS-KNTSHTN 2E65'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'SVNOAKS-KNTSHTN 2E67'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BROMLYS-LUTON 2E93'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ORPNGTN-LUTON 2L59'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'ORPNGTN-KNTSHTN 2L65'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-ELPHNAC 1J87'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'BEDFDM-ELPHNAC 1J88'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STPANCI-FAVRSHM 1F08'	678.23	2	8.48	15.75	24.23	1.24	0.5	0.62
Rail	St Pancras	'BRSR-STPANCI 1F13'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'FAVRSHM-STPANCI 1F17'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	St Pancras	'EBSFLTI-STPANCI 1F85'	678.23	1.33	8.48	23.31	31.78	0.94	0.5	0.47
Rail	St Pancras	'STPANCI-MARGATE 1J08'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'STPANCI-DOVERP 1J10'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	St Pancras	'RAMSGTE-STPANCI 1J11'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'STPANCI-MARGATE 1J12'	678.23	0.67	8.48	45.53	54	0.56	0.5	0.28
Rail	St Pancras	'MARGATE-STPANCI 1J13'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'MARGATE-STPANCI 1J17'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'DOVERP-STPANCI 1J19'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'MARGATE-STPANCI 1J21'	678.23	0.33	8.48	91.66	100.14	0.3	0.5	0.15
Rail	St Pancras	'MSTONEW-STPANCI 1T91'	678.23	1	8.48	30.75	39.23	0.76	0.5	0.38
Rail	King's Cross	'KNGX-CAMBDGE 1C33'	701.87	0.67	8.77	45.53	54.3	0.55	0.5	0.28
Rail	King's Cross	'KNGX-CAMBDGE 1C35'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'CAMBDGE-KNGX 1C82'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'KNGX-PBRO 1P11'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
Rail	King's Cross	'PBRO-KNGX 1P62'	701.87	1.33	8.77	23.31	32.08	0.94	0.5	0.47
Rail	King's Cross	'ROYSTON-KNGX 1R50'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'ROYSTON-KNGX 1R51'	701.87	0.67	8.77	45.53	54.3	0.55	0.5	0.28
Rail	King's Cross	'KNGX-CAMBDGE 2C03'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
Rail	King's Cross	'CAMBDGE-KNGX 2C54'	701.87	0.67	8.77	45.53	54.3	0.55	0.5	0.28
Rail	King's Cross	'CAMBDGE-KNGX 2C91'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'KNGX-PBRO 2P04'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
Rail	King's Cross	'LTCE-KNGX 2R07'	701.87	0.67	8.77	45.53	54.3	0.55	0.5	0.28
Rail	King's Cross	'HITCHIN-KNGX 2R94'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'WLWYNGC-KNGX 2Y04'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	King's Cross	'WLWYNGC-KNGX 2Y13'	701.87	0.67	8.77	45.53	54.3	0.55	0.5	0.28
LUL	King's Cross	'Hammersmith-Plaistow'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
LUL	King's Cross	'Watford-AldSfast'	701.87	3.67	8.77	8.92	17.7	1.7	0.5	0.85
LUL	King's Cross	'Cockfosters-LHRT4LT'	701.87	4.67	8.77	7.17	15.95	1.88	0.5	0.94
LUL	King's Cross	'RayLane-Cockfosters'	701.87	3.67	8.77	8.92	17.7	1.7	0.5	0.85
LUL	King's Cross	'LHRT4LT-ArnosGrove'	701.87	4.67	8.77	7.17	15.95	1.88	0.5	0.94
LUL	King's Cross	'ArnosGrove-RayLane'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
LUL	King's Cross	'ArnosGrove-Nthfields'	701.87	3	8.77	10.75	19.52	1.54	0.5	0.77
LUL	King's Cross	'Oakwood-RayLane'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
LUL	King's Cross	'Nthfields-Cockfoster'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
LUL	King's Cross	'LHRT5-Cockfosters'	701.87	6	8.77	5.75	14.52	2.07	0.5	1.03
LUL	King's Cross	'Uxbridge-Cockfosters'	701.87	3.67	8.77	8.92	17.7	1.7	0.5	0.85
LUL	King's Cross	'Ruislip-Cockfosters'	701.87	2.33	8.77	13.63	22.4	1.34	0.5	0.67
LUL	King's Cross	'ArnosGrove-Uxbridge'	701.87	1	8.77	30.75	39.52	0.76	0.5	0.38
LUL	King's Cross	'Oakwood-Uxbridge'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
LUL	King's Cross	'Oakwood-Ruislip'	701.87	0.33	8.77	91.66	100.43	0.3	0.5	0.15
Rail	Kings Cross St Pancras	'CAMBDGE-KNGX 2C92'	805.99	0.67	10.07	45.53	55.6	0.54	0.5	0.27
Rail	Kings Cross St Pancras	'PBRO-KNGX 2P90'	805.99	0.33	10.07	91.66	101.73	0.29	0.5	0.15
LUL	Warren Street	'Morden-Edgware'	786.13	4.67	9.83	7.17	17	1.76	0.5	0.88
LUL	Warren Street	'HighBarnet-Kenningt'	786.13	5.33	9.83	6.38	16.21	1.85	0.5	0.93
LUL	Warren Street	'MillHillE-Kenningt'	786.13	1.67	9.83	18.71	28.54	1.05	0.5	0.53
LUL	Euston Square	'Hammersmith-Edgware'	599.6	6	7.5	5.75	13.25	2.27	0.5	1.13
LUL	Euston Square	'Barking-Hammersmith'	599.6	6.34	7.5	5.48	12.98	2.31	0.5	1.16
LUL	Euston Square	'Amer-AldgateFast'	599.6	1	7.5	30.75	38.25	0.78	0.5	0.39
LUL	Euston Square	'Ches-AldgateFast'	599.6	2	7.5	15.75	23.25	1.29	0.5	0.65
LUL	Euston Square	'Uxbridge-AldSlow'	599.6	5.33	7.5	6.38	13.87	2.16	0.5	1.08
LUL	Euston Square	'Aldg-WatfordSlow'	599.6	3.67	7.5	8.92	16.42	1.83	0.5	0.91
LUL	Euston Square	'Ald-HarrowHill'	599.6	1.33	7.5	23.31	30.8	0.97	0.5	0.49
Rail	Euston	'BLTCHLY-EUSTON 2B04'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'WATFDJ-EUSTON 2J06'	187.22	0.67	2.34	45.53	47.87	0.63	0.5	0.31
Rail	Euston	'EUSTON-MKNSCEN 2K21'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'EUSTON-TRING 2T11'	187.22	0.67	2.34	45.53	47.87	0.63	0.5	0.31
Rail	Euston	'EUSTON-TRING 2T19'	187.22	1.33	2.34	23.31	25.65	1.17	0.5	0.58
Rail	Euston	'MKNSCEN-EUSTON 2W01'	187.22	0.67	2.34	45.53	47.87	0.63	0.5	0.31
Rail	Euston	'TRING-EUSTON 2W02'	187.22	1	2.34	30.75	33.09	0.91	0.5	0.45
Rail	Euston	'TRING-EUSTON 2W26'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'BLTCHLY-EUSTON 2W57'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'RUGBY-EUSTON 2W59'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'TRING-EUSTON 2W63'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'MKNSCEN-EUSTON 2W93'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
Rail	Euston	'WATFJDC-EUSTON 2C06'	187.22	2.67	2.34	11.99	14.33	2.09	0.5	1.05
Rail	Euston	'EUSTON-WATFJDC 2D86'	187.22	3	2.34	10.75	13.09	2.29	1	2.29
LUL	Euston	'Edgware-Morden'	187.22	9	2.34	4.08	6.42	4.67	0.5	2.34
LUL	Euston	'HighBarnet-Morden'	187.22	7.66	2.34	4.67	7.01	4.28	0.5	2.14
LUL	Euston	'Morden-MillHillE'	187.22	4	2.34	8.25	10.59	2.83	0.5	1.42
LUL	Euston	'HighBarnet-Morden'	187.22	0.33	2.34	91.66	94	0.32	0.5	0.16
LUL	Euston	'Kennington-Edgware'	187.22	14.67	2.34	2.79	5.14	5.84	0.5	2.92
LUL	Euston	'MillHill-Morden'	187.22	1.67	2.34	18.71	21.05	1.42	0.5	0.71
LUL	Euston	'Brixton-WalthamstowC'	187.22	15.67	2.34	2.66	5	5.99	1	5.99
LUL	Euston	'SevenSisters-Brixton'	187.22	11.67	2.34	3.32	5.66	5.3	0.5	2.65
									Total Grid Cell AI:	**85.27**

Appendix B

TfL BUS SPIDER MAP

Buses from Euston

Route finder

Bus route	Towards	Bus stops
10 24hr Daily	Hammersmith	M N
	King's Cross	C K L
18	Sudbury	F H P
30	Hackney Wick	D
	Marble Arch	H P
59	King's Cross	C K L
	Streatham Hill	E M N
68	West Norwood	E M N
73	Oxford Circus	H P
	Stoke Newington	D
91	Crouch End	C K L
	Trafalgar Square	M N
168	Hampstead Heath	A K L
	Old Kent Road	B M N
205	Bow Church	D
	Paddington	H P
253	Hackney	A G
390 24hr Daily	Archway	C
	Notting Hill Gate	H P
476	Northumberland Park	D

Route finder

Bus route	Towards	Bus stops
748	Hemel Hempstead Monday-Friday evening peak	CH

Key

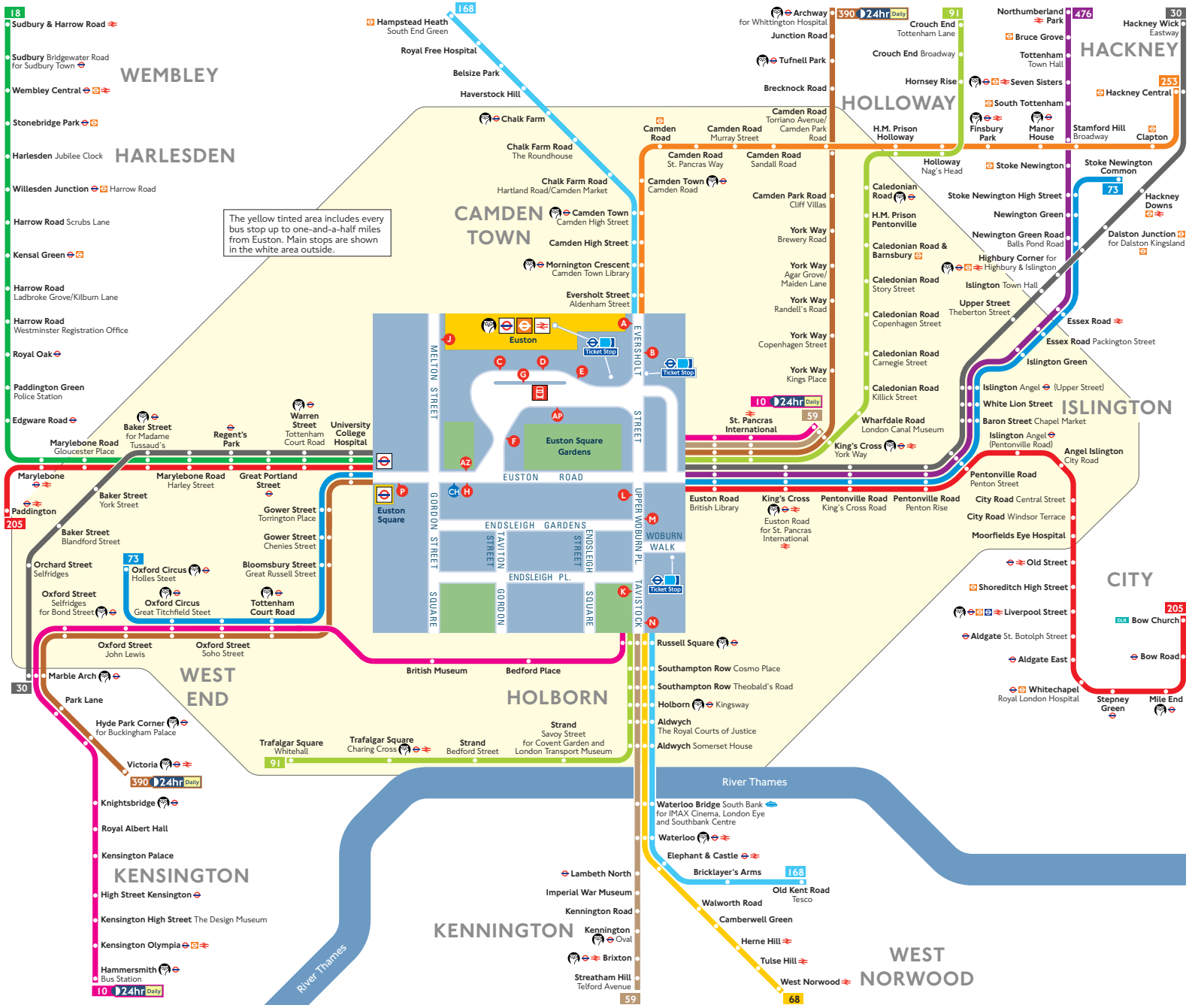
- Connections with London Underground
- Connections with London Overground
- Connections with National Rail
- Connections with Docklands Light Railway
- Connections with river boats
- Tube station with 24-hour service Friday and Saturday nights

Ways to pay

Use your contactless debit or credit card. It's the same fare as Oyster and there is no need to top up.

Top up your Oyster pay as you go credit or buy Travelcards and bus & tram passes at around 4,000 shops across London.

Sign up for an online account to top up online and see your travel history and spending



Information correct from 17 June 2017

Appendix C

TRICS OUTPUT

Calculation Reference: AUDIT-358901-180709-0720

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE
MULTI-MODAL VEHICLES

Selected regions and areas:

01	**GREATER LONDON**		
	CI	CITY OF LONDON	2 days
	WH	WANDSWORTH	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	1215 to 9803 (units: sqm)
Range Selected by User:	408 to 120000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 05/07/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Thursday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	2
Built-Up Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B1	3 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	1 days
50,001 to 100,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

250,001 to 500,000	1 days
500,001 or More	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	3 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

4 Good	1 days
5 Very Good	1 days
6b (High) Excellent	1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	**CI-02-A-02**	**OFFICES**		**CITY OF LONDON**
	GRACECHURCH STREET			
	MONUMENT			
	CITY OF LONDON			
	Town Centre			
	Commercial Zone			
	Total Gross floor area:		9803 sqm	
	Survey date: FRIDAY		*29/11/13*	*Survey Type: MANUAL*
2	**CI-02-A-03**	**OFFICES**		**CITY OF LONDON**
	MONUMENT STREET			
	MONUMENT			
	CITY OF LONDON			
	Town Centre			
	Commercial Zone			
	Total Gross floor area:		1951 sqm	
	Survey date: FRIDAY		*29/11/13*	*Survey Type: MANUAL*
3	**WH-02-A-02**	**OFFICES**		**WANDSWORTH**
	BATTERSEA PARK ROAD			
	BATTERSEA			
	Town Centre			
	Built-Up Zone			
	Total Gross floor area:		1215 sqm	
	Survey date: THURSDAY		*10/05/12*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	4323	0.617	3	4323	0.077	3	4323	0.694
08:00 - 09:00	**3**	**4323**	**2.491**	3	4323	0.085	3	4323	2.576
09:00 - 10:00	3	4323	1.110	3	4323	0.162	3	4323	1.272
10:00 - 11:00	3	4323	0.509	3	4323	0.362	3	4323	0.871
11:00 - 12:00	3	4323	0.440	3	4323	0.717	3	4323	1.157
12:00 - 13:00	3	4323	1.064	3	4323	1.627	**3**	**4323**	**2.691**
13:00 - 14:00	3	4323	1.434	3	4323	1.018	3	4323	2.452
14:00 - 15:00	3	4323	0.802	3	4323	0.547	3	4323	1.349
15:00 - 16:00	3	4323	0.378	3	4323	0.709	3	4323	1.087
16:00 - 17:00	3	4323	0.455	3	4323	1.326	3	4323	1.781
17:00 - 18:00	3	4323	0.216	**3**	**4323**	**2.221**	3	4323	2.437
18:00 - 19:00	3	4323	0.077	3	4323	0.547	3	4323	0.624
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			9.593			9.398			18.991

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	1215 - 9803 (units: sqm)
Survey date date range:	01/01/10 - 05/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix D

CENSUS DATA

nomis
official labour market statistics

Office for National Statistics

WP703EW - Method of travel to work (2001 specification) (Workplace population)

Edit query

View data Change format

WP703EW - Method of travel to work (2001 specification) (Workplace population)

Population	All usual residents aged 16 to 74 in employment in the area the week before the census
Units	Persons
Area Type	2011 super output areas - middle layer
Area Name	E02000187 : Camden 022

Method of travel to work	2011
All categories: Method of travel to work (2001 specification)	7,794
Work mainly at or from home	242
Underground, metro, light rail or tram	2,683
Train	2,259
Bus, minibus or coach	1,000
Taxi	21
Motorcycle, scooter or moped	93
Driving a car or van	673
Passenger in a car or van	60
Bicycle	250
On foot	492
Other method of travel to work	21

Warnings and notes:

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies