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King's Cross Methodist Church Proposed Redevelopment

Transport Statement Report

August 2015

A report prepared on behalf of West London Mission

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1 Introduction

1.1 Background

- 1.1.1 This report has been prepared by Transport Planning & Highway Solutions (TPHS) on behalf of West London Mission, in relation to a planning application for the redevelopment of the existing King's Cross Methodist Church, Birkenhead Street, London, WC1H 8BB.
- 1.1.2 The redevelopment scheme comprises the replacement and enhancement of the current ancillary accommodation on site to provide 26 bedrooms, more comprehensive and up-to-date facilities for the church and an enabling scheme of 11 residential apartments, with these being either one-bed or two-bed units. The development would come forward as a car-free scheme, other than for disabled badge holders for whom permits could be sought.
- 1.1.3 The premises are currently occupied by the church, which provides a number of evening and Sunday services. It also provides ancillary accommodation for 25 visiting scholars and also a community facility for local homeless people and night workers. The proposals would provide enhanced facilities for all users of the current site, but would only increase in demand for the additional residential enabling units.
- 1.1.4 In assessing the impacts of the proposal, given the scale of the proposed residential development which this planning application would support, the preparation of a Transport Statement is considered appropriate to support the submission. This has been identified through previous pre-application meetings with LB Camden. Separately, an Event Travel Plan will be prepared for the retained operations.
- 1.1.5 The purpose of this report is to demonstrate that there would not be any material impacts on the local travel networks, highways and other modes of travel, as a result of the redevelopment proposals and that the operational requirements of the proposed land-use would be satisfactorily accommodated.

1.2 Scope of the Report

- 1.2.1 This report will provide the following information, as is typical of a Transport Statement, which as referenced above, in the initial background, is appropriate for this development:
- review of the range of existing travel networks within the vicinity of the site, including consideration of the full range and extent of public transport services, supported by a PTAL assessment, as well as of the form of the local highway network and how this accommodates pedestrians and cycling routes and desire lines;

- in relation to the local highway network, confirmation of the current on-street parking provisions and restrictions within the vicinity of the site via a full overnight survey of occupancy, to present a baseline against which to consider the principles of the car provision for the residential development proposals;
- consideration of the key facilities which can be practically accessed from the site by the full range of travel modes, including local nurseries and schools, health centres, local retail and leisure facilities, but particularly in relation to non-car travel and through the identification and description of potential walk and cycle catchments;
- description of the development proposals in terms of how the site will be accessed, with additional detail of how the residential units would be serviced and of the proposed car parking and cycle parking strategies;
- multi-modal trips assessment for the proposed residential units, with this being based on a combination of TRAVL data and TRAVL research for trip volumes and patterns identified from local census statistics in terms of mode share;
- identification of the impacts of these additional movements by mode, particularly during the peak periods, which in terms of non-car trips will demonstrate that the range of services and current infrastructure will accommodate the general demands.

1.2.2 Against the background of this summary scope, this brief introduction is to be followed by the following sections, before presenting the key points and related conclusions:

- Section 2 of this report presents commentary relating to the existing travel conditions at and around the site, considering all modes of travel, as well as access to the range of local facilities particularly by non-car modes.
- Section 3 of this report provides further details of the development proposals for the site.
- Section 4 of this report discusses the parking strategy, servicing strategy and sustainable travel incentives to be brought forward for the residential properties at the site.
- Section 5 of this report presents the assessment of the likely trip making characteristics of the proposal, to consider the likely impacts of the scheme upon the full range of travel networks to inform the key conclusions.

2 Existing Travel Conditions

2.1 Background

- 2.1.1 The site has a footprint of around 800m², with the property comprising 58a Birkenhead Street to the east and 6 Crestfield Street to the west as a single operating unit. The current facility comprises four floors, basement through to second floor level.
- 2.1.2 To the immediate north the site is bounded by the property at 59 Birkenhead Street and the rear of the King's Cross Inn Hotel, which runs along Crestfield Street from the corner of Euston Road opposite King's Cross railway station, whilst to the immediate south the site is bounded by the properties at 58 Birkenhead Street and 5 Crestfield Street. Birkenhead Street forms the site frontage to the east and Crestfield Street the site frontage to the west.
- 2.1.3 Birkenhead Street runs as a one-way road southbound between a left-in simple priority junction with Euston Road to the north and St Chad's Street south, whilst Crestfield Road runs as a one-way road southbound between a left-in only simple priority junction with Euston Road to the north and Argyle Square to the south. Both stretches run for a length of around 100m and are subject to a speed limit of 20mph.
- 2.1.4 Footways of no less than 2m in width run along both sides of Birkenhead Street, as well as along the eastern (site) side of Crestfield Street. The majority of the length along the western side of Crestfield Street forms a dropped kerb arrangement, with stretches of footway along the northernmost and southernmost stretches of this street.
- 2.1.5 The area to the south of Euston Road and west of Grays Inn Road is primarily residential in nature, but with a number of smaller-sized offices and other services located along Birkenhead Street and Crestfield Street particularly towards the Euston Road end and a storage provider occupying the Belgrove House unit to the west of Crestfield Street.
- 2.1.6 The site and the surrounding streets sit within a controlled parking zone (Zone CA-D King's Cross Area), which is subject to operational restrictions between the hours of 08:30 and 18:30 Monday to Friday and the hours of 08:30 and 13:30 Saturday; there are no such restrictions in place on Sunday.
- 2.1.7 Along Birkenhead Street within the vicinity of the site on-street parking by means of demarcated spaces or banks is located along both sides of the carriageway, primarily with these available to permit holders only during the hours of restriction but with 'pay and display' spaces towards the Euston Road end of the street, whilst along Crestfield Street the on-street parking is located along the eastern (site) side and divided between spaces for permit holders only during the hours of restriction and 'pay and display' spaces.

- 2.1.8 Public transport opportunities accessible from the site within the PTAL distance thresholds of 640m for buses (equivalent to a typical walk of eight minutes) and 960m for rail and underground (equivalent to a typical walk of twelve minutes) include access to fourteen high-frequency bus routes operating via stops within the vicinity of King's Cross and St Pancras stations, to six underground lines via King's Cross St Pancras station and a further underground line via Euston station, and National Rail services via King's Cross, St Pancras and Euston mainline stations. Against this background, the site has a corresponding PTAL score of 6b which represents 'excellent' accessibility.
- 2.1.9 The availability of public transport services is of particular relevance to residents of the proposed residential apartments, with the development coming forward as a car-free scheme, since the range of these services available maximises the opportunity for residents and visitors to travel by means other than the private vehicle.
- 2.1.10 In terms of key facilities within easy walking distance of the site, there are food shops, post facilities, banks, pharmacies, a medical centre, a community centre, entertainment and recreation facilities no more than around 400m of the site, which equates to a typical walk of no more than five minutes. There is additionally a primary school within 400m of the site, with secondary school and further education facilities within a walk of a kilometre.
- 2.1.11 An initial overview of the census population data for the local area, based on the 2011 census, suggests that around 75% of households do not have a car and of those residents travelling to work only a small percentage of residents drive a car to work (8%), with instead around half of residents using public transport (55%) and around a third using the 'slow' modes (35%), which is reflective of the choice of practical travel modes being available.
- 2.1.12 A site plan illustrating the location of the property in the context of the surrounding area is included at **Appendix A**.

2.2 Existing Pedestrian Environment

- 2.2.1 The streets within the immediate vicinity of the site are supported by a comprehensive network of footways, with footways running along both sides of Birkenhead Street and along the eastern side of Crestfield Street, thus along both the eastern and western site frontages. Along the immediate site frontage, along Birkenhead Street (the western side) and Crestfield Street (the eastern side), the footways have width of no less than 2m.
- 2.2.2 These footways form part of a wider network to support pedestrian connectivity around the site and local area, connecting the site to the wider pedestrian network running along Euston Road about 50m north of the site and along St Chad's Street a similar distance to the south of the site, the stretch of which running west to Crestfield Street is closed to vehicular traffic. Both these routes connect eastwards with Gray's Inn Road.

- 2.2.3 TfL's *'Pedestrian Comfort Guidance for London (2010)'* considers flows of up to 600 persons per hour as being 'low', additionally with a 'comfortable' environment based on footway width of 2m having the scope to accommodate up to between 720 and 960 persons per hour. Informal observations of pedestrians using both Birkenhead Street and Crestfield Street have confirmed that the peak hourly flow along the footways on both these roads do not exceed the 'low' threshold, so do not represent 'active' flow.
- 2.2.4 The guidance also confirms that outside high street or tourist areas, a footway width of 2m along streets with 'low' pedestrian flow is appropriate, with this being the width required for two users to pass comfortably as well as meeting current DfT minimum standards.
- 2.2.5 A short distance to the east of the Euston Road / Birkenhead Street junction there are signal-controlled crossings incorporated into the signal-controlled junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way. There are signal-controlled crossings across each traffic stream, with that closest to the site running between the south side of Gray's Inn Road and a wide refuge within the junction area from which further crossings run in the direction of King's Cross station and Pentonville Road. This initial crossing is a walk distance of around 85m of the site, thus a typical walk of a minute.
- 2.2.6 In the opposite direction, westwards along Euston Road, there are signal-controlled crossings incorporated into the signal-controlled junction between the A501 Euston Road and Pancras Road and Argyle Street / Belgrove Street, with these provided across the Euston Road (West), Pancras Road and Argyle Street arms of the junction. The crossing closest to the site runs across the Argyle Street arm, with this initial crossing a walk distance of around 200m of the site, thus a typical walk between two and three minutes.
- 2.2.7 The footways and controlled crossings provide excellent pedestrian connection to the full range of local facilities within the vicinity of the site, including the local bus stops along both side of Euston Road as well as along Gray's Inn Road, Pancras Road, Pentonville Road and York Way. The footway network along the south side of Euston Road provides direct access also into King's Cross St Pancras underground station, which provides alternative access to both King's Cross and St Pancras mainline rail stations to that at street level by means of the controlled crossings. These public transport facilities are considered to be key walking destinations for residents at the site, as well as the wider area in general.
- 2.2.8 With the footway network and the conveniently located crossings within the vicinity of the site, the pedestrian environment is considered to be of an overall excellent level when also considering the accommodation of key pedestrian desire lines, the quality of the walking routes and the general maintenance of the footways and lighting. The pedestrian environment is enhanced further by the network of 'Legible London' signage installed at key locations around the King's Cross and St Pancras area to assist and guide pedestrians, such as at the corner of Gray's Inn Road / Birkenhead Street approximately 80m of the site.

- 2.2.9 The quality of the pedestrian environment is highlighted because the census population data for the local area, based on the 2011 census, identifies that a sizable 31% of residents travelling to work outside the home do so on foot. Additionally, advice issued by The Institution of Highways & Transportation (IHT) within '*Guidelines for providing for journeys on foot*' suggests acceptable walking distances for a number of different trip purposes.
- 2.2.10 For the purpose of either commuting or travelling to and from school, which are key travel purposes particularly during peak periods, the acceptable walking distance is defined as 1 kilometre; this is also the acceptable walking distance for 'sightseeing', which could also be used as a proxy for access to leisure and recreation opportunities. The corresponding reference from the IHT guidelines is attached at **Appendix B**.
- 2.2.11 With regard to the purpose of local commuting, there is a significant number of employment opportunities within the vicinity of the site within a reasonable walking distance (within a kilometre of the site), including those brought forward and continuing to come forward through the redevelopment of the King's Cross Quarter to the north of King's Cross station and those located along and within the vicinity of the Euston Road corridor through to Euston Square. These local employment opportunities are in addition to those further afield which could be accessed by the excellent public transport links serving the local area.
- 2.2.12 In terms of access to education facilities, Argyle Primary School on Tonbridge Street is that closest to the site, approximately a distance of 350m which equates to a typical walk time of between four and five minutes, with the Elizabeth Garrett Anderson School for Girls on Donegal Street and the Maria Fidelis Convent Upper School on Phoenix Road being the nearest secondary schools, approximately 850m and 1km of the site respectively and so within a walk of no more than thirteen minutes. Westminster Kingsway College in Grays Inn Road provides further education opportunities for 16 to 18 year olds and for adults; it is situated approximately 750 metres from the site, a walk time of around ten minutes.

2.3 Existing Cyclist Environment

- 2.3.1 Cycling is a key mode of travel, both for commuting and for leisure journeys, and has the scope to be used to undertake shorter-distance journeys otherwise undertaken by the car. The census population data for the local area, based on the 2011 census, identifies that around 4% of residents travelling to work outside the home do so by cycle, which mirrors the London-wide cycle-based mode share for cycling (4%).
- 2.3.2 Additionally, the introduction and expansion of the London Cycle Hire scheme has increased the opportunities for non-regular cyclists in particular to use this mode of travel for shorter-distance trips across much of the central London and inner London areas.
- 2.3.3 The designation of the local streets within the surrounding, primarily residential, area as being subject to a speed limit of 20mph supports an environment conducive for cycling. Additionally, contraflow cycling is permitted along Birkenhead Street and Crestfield Street either side of the site, with this confirmed by signage and intermittent street symbology.

- 2.3.4 Similarly, the stretch of St Chad's Street between Gray's Inn Road and Birkenhead Street permits contraflow cycling, with this short stretch of carriageway of around 85m running into the non-vehicular stretch between Birkenhead Street and Crestfield Street approximately 50m to the south of the site and which provides a dedicated two-way cycle link. These routes form part of a local network for cyclists running along quieter roads.
- 2.3.5 There are advanced stop lines for cyclists upon the entry streams to the signal-controlled junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way a short distance to the north of the site, with advisory on-street cycle lanes running initially along the exit streams. There is also an advanced cycle stop line upon the Pancras Road approach to the junction with Euston Road a short distance further east.
- 2.3.6 Works undertaken at the junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way have facilitated further measures with regard to better accommodating cycle travel. Upon the Gray's Inn Road approach, in addition to the provision of advanced stop lines, a short stretch of advisory cycle lane running along the nearside kerb from the downstream bus stop runs into a segregated nearside cycle lane which then runs to the stop line. This facility then feeds into the short nearside advisory cycle lane upon the exit stream, the route of which is emphasized via a short offside kerbed strip immediately to the west of the junction with Birkenhead Street.
- 2.3.7 Additionally, a toucan crossing has been installed within the controlled crossing facilities incorporated into the junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way, running between the corner of the Euston Road / York Way to the north and the corner of Gray's Inn Road / Birkenhead Street to the south.
- 2.3.8 There are two docking stations for the London Cycle Hire scheme present within around 200m of the site, a walk of between two and three minutes. These are along St Chad's Road, which is located to the east of the site close to the junction with Gray's Inn Road and accommodates up to 22 cycles, and along Belgrove Street, which is located to the west of the site close to the junction with Euston Road and accommodates up to 20 cycles. A further station, some 350 metres away in Northdown Street, accommodates up to 21 cycles.
- 2.3.9 Literature published by Sustrans suggests a comfortable cycling distance could be up to 5 miles (about 8 kilometres) over a half-hour period, as this ties in with the recommended minimum amounts of weekly adult physical activity of five units of thirty minutes. This distance threshold is greater than the advice given previously in the superseded Planning Policy Guidance 13 '*Transport*', which suggested that those short-distance journeys which had the scope to be undertaken by cycle instead of the car were about a distance of 5 kilometres, although acknowledging it not being uncommon for greater timed and lengthier journeys to be undertaken on regular occasions, in particular to a place of work.

- 2.3.10 Within the full threshold of eight kilometres the cycle catchment would extend northwards through Finsbury Park to Wood Green, eastwards through Bethnal Green to Bow, southwards across central London and the City through to Denmark Hill, and westwards across central London and Paddington through to Shepherds Bush. The lesser-sized catchment of five kilometres would include the significant employment, as well as leisure and recreational, opportunities across the full extent of central London and the City area, as well as along the South Bank and around the Paddington Basin area.
- 2.3.11 These catchment areas would evidently encompass a significant number of key centres and areas within central London and its surrounds through which there are a vast number of employment opportunities as well as other key facilities for residents.

2.4 Existing Public Transport Environment

- 2.4.1 Public transport routes, by bus, underground and rail, provide a significant, realistic and viable means of travel to and from the site for commuting and educational purposes, which are key trips by residents during the week in particular, as well as for leisure and recreation purposes, which are key trips during the evenings and weekends in particular. The measured public transport accessibility level (PTAL) for the site has a score of 6b, which is considered to represent excellent accessibility by public transport.
- 2.4.2 TfL's own online PTAL calculator has been used to initially identify the score and the output from this is included at **Appendix C**. The accessibility index which has supported the 6b designation (83.94) is of such a magnitude that if there are minor variations to the range and/or frequencies of services, these would not impact upon the site's designation being in one of the most accessible locations in this area of London by public transport.
- 2.4.3 However, it should be noted that the TfL-supported PTAL calculator for this site does not include the longer-distance rail services operated to and from the mainline termini of Euston, King's Cross and St Pancras. Whilst it is acknowledged the origins / destinations of these services would not, by virtue of distance, be supportive of regular travel to and from the local area, some of these services operate via intervening stations for which it would be.
- 2.4.4 For completeness these services are included within the subsequent commentary, which further emphasises the excellent accessibility of the site by public transport.

Bus Services

- 2.4.5 There are currently fourteen different bus routes which operate services via the series of bus stops within the vicinity of the site. The pair of stops in front of King's Cross station, locally tagged as stops E and D, the stop upon the Gray's Inn Road approach to King's Cross, locally tagged as stop R, and the stop along York Way to the side of King's Cross station, locally tagged as stop G, are each frequented by eight different bus routes.

- 2.4.6 The pair of stops in front of King's Cross station is approximately 150m of the site when following the safer route by means of the controlled crossings at the junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way, thus a typical walk of around two minutes. These stops are supported by modern bus shelters and countdown real-time information displays.
- 2.4.7 The stop along the Gray's Inn Road approach to King's Cross is that closest to the site, with a walk distance of around 120m and thus a typical walk of between one and two minutes; this stop is only supported by a bus pole and attached timetable information.
- 2.4.8 The stop along York Way is approximately 170m of the site, again when following the safer route by means of the controlled crossings, thus a typical walk of around two minutes. This stop is supported by a modern bus shelter and countdown real-time information displays.
- 2.4.9 There are two further bus stops within the vicinity of the site, each of which is frequented by two bus routes in one direction of travel and for which the route in the opposite direction frequents one of bus stops D/E (King's Cross Station), stop R (Gray's Inn Road) or stop G (York Way). These stops are located along Pancras Road to the north-west of the site and Caledonian Road to the north-east of the site, approximately 240m and 280m respectively on foot and thus a typical walk of no more than between three minutes and four minutes.
- 2.4.10 The walking routes between these stops and the site are both practical and convenient, with the controlled pedestrian crossing facilities incorporated into the junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way and the junction between the A501 Euston Road and Pancras Road and Argyle Street / Belgrove Street facilitating safer walking routes to all but the bus stop along Gray's Inn Road, which is located on the same (southern / western) side of Euston Road / Gray's Inn Road as the site.
- 2.4.11 Table 2.1 presents a summary of the bus routes operating within a practical walk of the site entrance, identifying typical daytime frequencies and the nearest stops as well as a summary of the route. The table presents those services operating from within 640m of the site, in line with the PTAL assessment methodology. A summary spider map of the King's Cross St Pancras area, as prepared by TfL, is attached at **Appendix D**.
- 2.4.12 The summary table, Table 2.1 overleaf, provides details of the range of bus services accessible of the site and the frequencies of these illustrate that this mode of travel is both practical and very convenient for those travelling to and from the site.
- 2.4.13 During a typical daytime hour there are between 110 and 120 services operating within the vicinity of the site, which on average equates to two services every minute. This increases to between 180 and 190 buses in each hour typically, thus around three services every minute, when considering that nine of the fourteen routes operate as through routes, so further increasing the propensity for individuals to regularly use this travel mode.

Route No.	Route Summary	Closest Bus Stop	Typical Hourly Freq.
10	King's Cross – Oxford Str. – Marble Arch – High Street Kensington – Olympia - Hammersmith	King's Cross Station (Stop R) (Gray's Inn Road)	7
30	Hackney Wick – Dalston Junction – Upper Street – King's Cross – Baker Street – Marble Arch		6-7
59	King's Cross – Russell Square – Holborn – Waterloo – Kennington - Brixton – Streatham Hill		9
73	Stoke Newington – Islington – King's Cross – Oxford Street – Hyde Park Corner – Victoria		12
91	Crouch End – Holloway – Caledonian Rd – King's Cross – Russell Sq. – Holborn – Trafalgar Sq.		8
205	Bow Church – Whitechapel – Aldgate – Islington – King's Cross – Baker Street - Paddington		7
390	Archway – Tufnell Park – York Way – King's Cross – Oxford Street – Marble Arch – Notting Hill Gate		7-8
476	Northumberland Park – Tottenham - Seven Sisters – Islington - King's Cross - Euston		7-8
45	St Pancras - King's Cross – Chancery Lane – Blackfriars – Southwark – Clapham Park	King's Cross Station (Stops D / E)	8
46	Lancaster Gate – Paddington – Hampstead Heath – King's Cross – Chancery Lane – St Bart's Hosp.		6-7
63	St Pancras - King's Cross – Blackfriars – Elephant & Castle - Peckham Rye – Honor Oak		10
214	Highgate Village – Kentish Town – Camden Town – King's Cross – Islington – Old Street – Moorgate		7-8
17	Archway – Holloway – King's Cross – Chancery Lane – St Paul's – Cannon Street - London Bridge	King's Cross Station (Stop H)	9
259	King's Cross – Caledonian Road – Holloway – Finsbury Park – Manor House - Edmonton Green	(Caledonian Rd)	7-8
		CUM. HOURLY FREQ.	110-116

Table 2.1: Summary of Local Bus Services

2.4.14 Three of these daytime bus routes additionally operate a twenty-four hour service, with routes 10 and 390 operating half-hourly via bus stop R (Gray's Inn Road) and bus stop G (York Way) and route 214 operating every twenty minutes via bus stop E (King's Cross Station) and bus stop T (Pancras Road). There are also four further dedicated night bus routes operating via the King's Cross area, three of which operate as through route services; each of the dedicated services operating a half-hourly service by direction. A summary night-bus spider map of the King's Cross St Pancras area is attached at **Appendix E**.

2.4.15 All the buses operating within the vicinity of the site, providing both the daytime and night services, are low-floor vehicles which can be lowered to pavement level when the bus stops and the doors open, ensuring that this key mode of travel is accessible to those with mobility difficulties, so fully inclusive. The vehicles have easy access ramps and sufficient space on-board for a wheelchair, be it motorised or non-motorised, though not for all scooter models.

London Underground

- 2.4.16 As referenced previously the current provision for public transport within the vicinity of the site includes access to underground services via King's Cross St Pancras station to the north-west, which is the closest underground station to the site and through which six lines operate, and Euston station further west, through which a further line operates.
- 2.4.17 The closest access for King's Cross St Pancras underground station to the site is located along the south side of Euston Road, adjacent to the corner with Belgrove Street. This access is approximately 170m of the site and thus a typical walk of around two minutes, with access by means of a series of steps. The main access for this station is by means of the arrangements located directly in front of King's Cross mainline railway station, which are approximately 200m of the site via the series of controlled crossings and thus a typical walk time of between two and three minutes, with this route providing step-free access.
- 2.4.18 King's Cross underground station is defined by TfL as being in the 'A' group of stations which *'have the smallest step and gap and are suitable for most customers including wheelchair-users'*, with step-free access for all lines available between street level and platform level.
- 2.4.19 Euston underground station is located approximately 900m west of the site, with access taken through the mainline railway station. There is no step-free access between street level and platform level at this station. However, all London Underground staff are trained to assist customers with disabilities and will help as much as they can provided it is safe to do so, thus there are some disabled groups which can use the support offered by staff.
- 2.4.20 Six underground lines operate through King's Cross St Pancras underground station, with a further underground line operating via Euston, which is considered to provide excellent accessibility of the site by this mode. These different lines run to and from a number of destinations and origins throughout not only central London but also within the suburban areas particularly in the north, east and west.
- 2.4.21 A summary of the London Underground routes, with typical hourly frequency, serving the local area by means of King's Cross St Pancras and Euston stations are included in Table 2.2.
- 2.4.22 The summary table provides details of the range of underground services accessible via the two stations and seven underground lines local to the site. It clearly demonstrates that this mode of travel is a highly practical and convenient mode of travel to the site, with regular high-frequency services to and from many parts of the Greater London conurbation.
- 2.4.23 With a cumulative hourly frequency of typically 109 services, this equates to an average approaching two services every minute. When taking into consideration that these lines operate as through routes, the frequency of service available to those travelling to and from the King's Cross area around the site during a typical daytime hour increases to typically around 220 services, thus between three and four services every minute on average which further increases the propensity for individuals to regularly use this mode of travel.

Station	Route Summary	Line	Typical Hourly Freq.
King's Cross St Pancras	Hammersmith – Paddington – Baker Street - King's Cross St Pancras – Tower Hill – Westminster - Victoria – Edgware Rd	Circle	6
	Hammersmith – Paddington – Baker Street King's Cross St Pancras – Whitechapel – Mile End - West Ham - Barking	Hammersmith & City	6
	Uxbridge / Amersham / Chesham – Wembley Park - Baker Street – King's Cross St Pancras – Moorgate - Aldgate	Metropolitan	12
	Edgware / High Barnet – Camden Town – Euston - King's Cross St Pancras – Bank – Kennington – Balham - Morden	Northern (Bank)	20
	Heathrow / Uxbridge – Hammersmith – Green Park – King's Cross St Pancras – Finsbury Park - Arnos Grove - Cockfosters	Piccadilly	21
	Brixton – Victoria – Oxford Circus - King's Cross St Pancras – Highbury & Islington – Tottenham Hale - Walthamstow Central	Victoria	24
Euston	Edgware / Mill Hill East / High Barnet – Camden Town – Euston – Leicester Square - Charing Cross – Waterloo - Kennington	Northern (Charing X)	20
		CUM. HOURLY FREQ.	109

Table 2.2: Summary of Local Underground Services

2.4.24 Indeed, solely considering the underground services operating via King's Cross St Pancras station, there would be typically around 180 services available for travel in a typical daytime hour, so continuing to be around three services every minute on average.

London Overground & National Rail Services

2.4.25 As referenced previously the current provision for public transport within the vicinity of the site includes access also to via King's Cross, St Pancras and Euston stations, with King's Cross station located to the initial north-west, St Pancras station then adjacent to King Cross and Euston station located further west along Euston Road. These stations are frequented by both commuter and longer-distance rail routes, including London Overground at Euston.

2.4.26 King's Cross station is that closest to the site, with the station forecourt area running between York Way in the east and Pancras Road in the west. Access into and out of the station is between 200m and 300m of the site, when including the safer route by means of the controlled crossings within the junction between the A501 Euston Road / Pentonville Road and the A5200 Gray's Inn Road / York Way. The distance range, which equates to a typical walk of no more than four minutes, reflects separate entry and exit arrangements.

- 2.4.27 St Pancras station is approximately 450m of the site, by means of the main access provided along Pancras Road closer to the domestic service platforms. This equates to a typical walk of between five and six minutes, again allowing for use of the controlled crossings along Euston Road as part of a safer pedestrian route between the site and the station.
- 2.4.28 Euston station is that furthest from the site, but continuing to be within the practical walk distance considered appropriate for travel by rail within the PTAL assessment – 960m. The station is located approximately 900m of the site, thus equating to a typical walk of around eleven minutes, with the most convenient access for the site being on Eversholt Street.
- 2.4.29 Tables 2.3 and 2.4 present a summary of the London Overground and National Rail routes operating within an acceptable walk distance of the site, via the referenced mainline stations, with Table 2.3 in relation to services via King’s Cross and Table 2.4 in relation to services via St Pancras and Euston. These tables identify typical daytime frequencies as well as a summary of the corresponding route, though excluding routes and services for which the first stop out of or the last stop into London is more than an hour’s journey time.

Operator	Route Summary	Typical Hourly Freq.
Great Northern	KING’S CROSS – Cambridge – Waterbeach – Ely – Littleport – Downham Market – Watlington – King’s Lynn	1
	KING’S CROSS – Finsbury Park – Hatfield – Welwyn Garden City – Stevenage – Hitchin – Baldock – <i>Royston – Foxton - Cambridge</i>	1
	KING’S CROSS – Cambridge Only	1
	KING’S CROSS – Stevenage – Hitchin – Arlesley - Biggleswade – Sandy – St Neots – Huntingdon – <i>Peterborough</i>	1
	KING’S CROSS – Finsbury Park – Hatfield – Welwyn Garden City – Stevenage – Hitchin - <i>St Neots – Huntingdon – Peterborough</i>	1
	KING’S CROSS – Finsbury Park – Stevenage – Hitchin – Letchworth Garden City – Baldock – Royston – <i>Cambridge</i>	1
Virgin Trains East Coast	KING’S CROSS – Peterborough – <i>Doncaster – Wakefield - Leeds</i>	2
	KING’S CROSS – Stevenage – Peterborough – <i>Grantham – Newark North Gate – Retford – Doncaster – York</i>	1
	KING’S CROSS – Peterborough – <i>Newark North Gate – Doncaster – York – Darlington - Durham – Newcastle - Edinburgh</i>	1
CUM. HOURLY FREQ.		10

Table 2.3: Summary of Local National Rail Services – King’s Cross

Operator	Route Summary	Typical Hourly Freq.
Thameslink	Sutton – Wimbledon – Blackfriars – City – ST PANCRAS – St Albans City – Harpenden – Luton Airport Parkway – Luton	2
	Sutton – Carshalton – Blackfriars – City – ST PANCRAS – West Hampstead – Mill Hill Broadway - St Albans City	2
	Bedford – Luton – St Albans City – ST PANCRAS – City – Blackfriars – East Croydon – <i>Gatwick Airport – Brighton</i>	2
	Bedford – Luton – St Albans City – ST PANCRAS – City – Blackfriars – East Croydon – Gatwick Airport – <i>Three Bridges</i>	2
	(Luton – St Albans City) – West Hampstead – ST PANCRAS – City – Blackfriars – Catford - Bromley South – Swanley - Sevenoaks	2
	Bedford – Luton – Luton Airport Parkway – St Albans City – ST PANCRAS – Farringdon - City – Blackfriars – Elephant & Castle	1
East Midlands Trains	ST PANCRAS – Luton – Bedford – Wellingborough – Kettering – <i>Corby</i>	1
	ST PANCRAS – Market Harborough – <i>Leicester – East Midlands Parkway – Nottingham</i>	1
	ST PANCRAS – Luton Airport Parkway – Bedford – Wellingborough – Kettering – <i>Leicester – Nottingham</i>	1
South Eastern	ST PANCRAS – Stratford International – Ebbsfleet – Ashford – Canterbury West – <i>Ramsgate – Broadstairs – Margate</i>	1
	ST PANCRAS – Stratford International – Ebbsfleet – Ashford – Folkestone West – Folkestone Central – <i>Dover Priory</i>	1
	ST PANCRAS – Stratford International – Ebbsfleet Only	2
London Overground	EUSTON – Queen’s Park – Willesden Junction – Wembley Central – Kenton - Harrow & Wealdstone – Bushey – Watford Junction	3
London Midland	EUSTON – Harrow & Wealdstone – Bushey – Watford Junction – Kings Langley - Apsley - Hemel Hempstead – Berkhamsted - Tring	2
	EUSTON – Leighton Buzzard – Bletchley - Milton Keynes Central – Wolverton - Northampton – <i>Rugby – Birmingham New Street</i>	1
	EUSTON – Watford Jct – Hemel Hempstead – Berkhamsted – Leighton Buzzard – Bletchley – Milton Keynes (- <i>Northampton</i>)	2
	EUSTON – Watford Junction – Milton Keynes Central – Northampton – Rugby – Coventry – Birmingham New Street	1
	EUSTON – Milton Keynes Central – Rugby – <i>Nuneaton – Lichfield Trent Valley – Stafford – Stoke-on-Trent – Crewe</i>	1
Virgin Trains	EUSTON – Milton Keynes Central – Coventry – <i>Birmingham New Street – Wolverhampton – Carlisle - Glasgow or Edinburgh</i>	1
	EUSTON – Milton Keynes Central – Crewe – Chester	1
	EUSTON – Milton Keynes - <i>Stoke-on-Trent –Manchester Picc.</i>	1
CUM. HOURLY FREQ.		31

Table 2.4: Summary of Local London Overground & National Rail Services – St Pancras & Euston

- 2.4.30 The summary table provides details of the range of London Overground and National Rail services available via the three mainline rail stations within a practical walk of the site. It demonstrates that this mode of travel can complement the underground services by being an alternative practical means of travel for both short-distance and longer-distance journeys, with a cumulative hourly frequency of around forty services each coming into and departing from these termini equating to an average of a service at least every two minutes.
- 2.4.31 For the purpose of residential commuting the range of rail services practically connects the site area with the key employment centres to the north of Greater London, such as Cambridge and Peterborough via King's Cross station, Luton and Bedford via St Pancras station, and Watford and Milton Keynes via Euston station. Each of these centres would be no more than an hour's travel time by rail from and to the area surrounding the site.

2.5 Existing Highway Environment

- 2.5.1 Birkenhead Street, which runs along the eastern side of the site, operates as a one-way route between a left-in simple priority junction with the A501 Euston Road, approximately 50m to the north of the site, and St Chad's Street, approximately 50m to the south of the site, other than for cyclists which are permitted to travel along the carriageway in the northbound direction also. This road forms part of the 20mph zone covering the local area.
- 2.5.2 Crestfield Road, which runs along the western side of the site, operates similarly as a one-way route southbound between a left-in simple priority junction with the A501 Euston Road, again approximately 50m to the north of the site, and Argyle Square (East), approximately 50m to the south of site, other than for cyclists which are permitted to travel along the carriageway in the northbound direction also. This road falls within the 20mph zone also.
- 2.5.3 The initial stretch of 10m from the A501 Euston Road along both of these streets is subject to the restrictions of the 'red route' network, with no parking or loading / unloading activity permitted at any time, other than in the designated space(s) permitted during certain times. The A501 Euston Road, as part of the Inner Ring Road, forms part of the high-level road network within the Greater London area managed by TfL (the TLRN), running between the A40 / A5 in the west and A10 / A1202 in the east, and subject to these restrictions.
- 2.5.4 Following on from the initial stretch, along Birkenhead Street the kerbside space is characterised by banks of on-street parking divided by stretches of single yellow lining, with the on-street parking being designated either for use specifically by permit holders during certain periods or operating as 'pay and display' spaces with certain restrictions of use.
- 2.5.5 Additionally, there is a designated loading space immediately after the initial stretch of double-red lines, along the eastern side of Birkenhead Street, which permits loading and unloading for periods of twenty minutes during the period of 08:00 to 19:00 Monday to Saturday, with no restrictions on use at any other time. During these periods these dedicated space can also be used by 'blue badge' holders for periods of three hours.

- 2.5.6 Also, along the western (site) side of Birkenhead Street there is a stretch of single yellow lining, of a length of around 10m to 12m, immediately north of the site, which whilst not permitting on-street parking during the periods of restriction attached to the controlled parking allows on-street loading and unloading. Along the eastern side of Birkenhead Street there are stretches of single yellow lining either side of a dropped kerb access, again immediately north of the site, though only the stretch to the north of the dropped kerb access would be suitable for kerbside activity with a length of around 6m; the length to the south of the dropped kerb access measures less than 4m.
- 2.5.7 There are further stretches of single yellow lining running along either side of Birkenhead Street as it runs into St Chad's Street to the south, though when considering proximity of dropped kerb arrangements and the road narrowing at the southernmost end may be limited practically to a stretch of no more than around 6m along the eastern side.
- 2.5.8 Along Crestfield Street, following on from the initial stretch, the kerbside space is characterised along the eastern (side) primarily by banks of on-street parking, again with the on-street parking being designated either for use specifically by permit holders during certain periods or operating as 'pay and display' spaces with certain restrictions of use, and along the western side primarily by a stretch of single yellow lining.
- 2.5.9 Along the eastern (site) side of Crestfield Street, in addition to the banks of on-street parking there is a designated bank for motorcycle parking, of around 16m in length and which has been observed as having the capacity to accommodate 16 motorcycles (1 per metre).
- 2.5.10 Along the western side of Crestfield Street there is a stretch of single yellow lining, of a length of around fifty metres, which runs in front of an inset dropped kerb area to the rear of Belgrove House which currently accommodates a commercial storage operation. Whilst this full length may not be appropriate for the purpose of loading and unloading as the on-street regulations would permit, there continues to be of a length of around 25m or so between the refuse storage area and the rear access to the unit which could be used.
- 2.5.11 Additionally, there is a designated loading space immediately after the initial stretch of double-red lines, along the western side of Crestfield Street, which permits loading and unloading for periods of twenty minutes during the period of 08:00 to 19:00 Monday to Saturday, with no restrictions on use at any other time. During these periods these dedicated space can also be used by 'blue badge' holders for periods of three hours.
- 2.5.12 There are car club facilities located along both Birkenhead Street and Crestfield Street, each of which have the scope to accommodate two vehicles at any one time. On-site observations have identified that typically in each facility one vehicle is a car and one vehicle a van. The facility along Birkenhead Street, which is located directly opposite the site, is operated by City Car Club, whilst the facility along Crestfield Street, approximately 35m to the north of the site towards the junction with Euston Road, is operated by Zipcar.

2.6 Existing Parking Environment

- 2.6.1 As referenced previously, the site and the streets within the surrounding area sit within a controlled parking zone (Zone CA-D King's Cross Area), which is subject to operational restrictions between the hours of 08:30 and 18:30 Monday to Friday and the hours of 08:30 and 13:30 Saturday, with no restrictions on Sunday.
- 2.6.2 Along Birkenhead Street the on-street parking bank along the western side closest to the A501 Euston Road is that available for use as 'pay and display' spaces during the controlled parking hours, with a maximum stay permitted of two hours, with the other on-street parking banks for use by resident permit holders only during the hours of restriction.
- 2.6.3 As such, the banks of on-street parking both directly in front of and opposite the site are those along Birkenhead Street for use specifically by resident permit holders, with the bank on the site side approximately 45m in length and the bank opposite approximately 25m.
- 2.6.4 Along Crestfield Street the on-street parking banks run along the eastern (site) side of the street, with these split generally equally between a bank available for use as 'pay and display' spaces during the hours of restriction and a bank specifically for use by resident permit holders, each approximately 25m in length. The stretch running along the site frontage forms part of the bank of parking available for 'pay and display' use.
- 2.6.5 In order to investigate the current peak on-street parking demand, which typically corresponds with the overnight period and thus outside of the controlled hours of parking, a series of parking beat surveys was undertaken within the local roads closest to the site and as shown on the plan attached at **Appendix F**, which provides an inventory of the different types of parking and traffic regulations as they relate to the kerbside space.
- 2.6.6 At the time of survey, a number of kerbside stretches were not available as a result of building works. Along Birkenhead Street these works impacted upon the loading space along the eastern side and the bank of 'pay and display' parking along the western side closest to the junction with Euston Road, whilst along Crestfield Street these works impacted upon the loading space along the western side and the stretch of double-red lining along the eastern side again closest to the junction with Euston Road. Recent site observations have confirmed that these works are no longer in place and that the kerbside is again available.
- 2.6.7 The surveys, based primarily on the LB Lambeth methodology for undertaking parking demand surveys, were undertaken on Tuesday 25th November 2014, from 02:55, and on Wednesday 26th November 2015, from 03:10. The study area comprised those streets within a 200m walk distance of the site, but excluding the A501 Euston Road. The results of the survey are attached for information as **Appendix G**.

- 2.6.8 As an overview of the results, within the 200m catchment of the site the utilised capacity of the on-street parking banks defined for permit holders only sits at around an average of around 67%, which is below the 90% threshold generally used to indicate unacceptable levels of parking stress, with there being typically no less than twenty spaces available within these specific areas.
- 2.6.9 When considering the full extent of overnight parking opportunities within the 200m catchment of the site, including some of the stretches of single yellow lining and 'pay and display' bays, and the additional observed demands, the utilised capacity of on-street parking sits at around an average of 72% and so continuing to be below the 90% threshold indicating parking stress.
- 2.6.10 Notwithstanding the availability of spaces within the on-street parking banks defined for permit holders only, a similar consistent demand was observed using the stretches of single yellow lining and 'pay and display' bays within the catchment, hence the two utilisation ratios referenced above not being significantly dissimilar.

2.7 Proximity to Local Amenities

- 2.7.1 As the preceding commentary has outlined, there are significant catchments accessible from the site through the use of the full range of non-car modes of travel. Within these catchments there are a number of key local facilities and amenities which are practically accessible for a number of trip purposes, be they for work or for non-work opportunities.
- 2.7.2 Following the technical housing standards review undertaken by central government, Code for Sustainable Homes (CfSH) was withdrawn at the end of March 2015. In light of this, the Building Research Establishment (BRE) has been developing the Home Quality Mark (HQM) to form part of the BREEAM group of quality and sustainability standards. Assessment under the HQM will measure a range of issues, including a number relating to 'Our Surroundings'.
- 2.7.3 'Our Surroundings' will consider site context and movement and connectivity, with a key factor within the latter being the range of local amenities accessible of the site such as retail centres, banking facilities, local schools, healthcare facilities, leisure facilities and open spaces. These facilities match the list put forward with regard to the preparation of a Home Users Guide under the BREEAM assessment of domestic refurbishments.
- 2.7.4 However, there is no specific reference in either the emerging assessment guidance or the corresponding BREEAM information to what are considered appropriate and practical travel distances, thus in the absence of specific thresholds the BREEAM guidance for proximity to key amenities for multi-residential accommodation may provide a useful proxy and has been used in this consideration of proximity to key amenities.

- 2.7.5 The BREEAM guidance for proximity to key amenities for multi-residential accommodation seeks provision of a food shop, post box and cash point within 500m of a site, with a number of other amenities within 1000m of a site. Table 2.5 lists the full range of local amenities referenced and then demonstrates whether or not these are within the distance thresholds.
- 2.7.6 In addition to the significant catchments accessible from the site through the use of the full range of non-car modes of travel, this additional assessment demonstrates that all the key facilities would be within a kilometre of the site, with all but the leisure centre and secondary school being within 500m of the site; indeed, a number of the key facilities would be much closer and within a typical walk of no more than five minutes.
- 2.7.7 Thus, it is evident that the full range of key facilities is accessible to and from the site by foot and cycle and not requiring the use either of local public transport or the car.

	Distance		Supporting Commentary
	500m	1km	
Food Shop	✓	✓	There are numerous food stores within the site's vicinity, including Marks & Spencer 'Simply Food' units in King's Cross and St Pancras stations and a Tesco Metro on Caledonian Street, all within 500m.
Post Box / Post Facility	✓	✓	There is a post office along Euston Road about 150m of the site, with three separate post box facilities within 400m (Gray's Inn Road, Judd Street, York Way).
Bank / Cash Point	✓	✓	Barclays on Euston Road and Lloyds on Gray's Inn Road are about 200m of the site, with a number of cash points available within the area.
Pharmacy	NOT REQUIRED	✓	There are two Boots pharmacies located in King's Cross station and one in St Pancras station, all within 500m of the site.
Medical Centre		✓	King's Cross Road Surgery is about 300m of the site, with a further three facilities within around 1km.
Leisure Centre		✓	Pancras Square Leisure Centre is about 650m of the site.
Community Centre		✓	In addition to facilities offered by the church, King's Cross neighbourhood centre on Argyle Street is within 200m of the site.
Place of Worship		✓	The King's Cross Methodist Church would continue to accommodate the majority of the space on site.
Public House		✓	There are numerous pubs within 500m of the site, including The Boot (250m), McGlynn's (280m) and The Water Rats (290m).
Outdoor Open Access Public Area		✓	Argyle Square Gardens, which is open during daylight hours, is about 150m from the site.
School		✓	The nearest primary school is Argyle Primary School, which is about 350m of the site, with the nearest secondary, Elizabeth Garrett Anderson (for Girls), about 850m of the site and Maria Fidelis Convent Upper School about 1km.
Children's Play Area		✓	There is both a children's play area and multi-use games area in Argyle Square Gardens.

Table 2.5: Summary Assessment of Proximity to Local Amenities

3 Description of Development Proposals

- 3.1.1 The scheme proposals comprise the redevelopment of the existing King’s Cross Methodist Church at the Birkenhead Street / Crestfield Road site. The current building is three-storeys (ground to second) with additional basement level.
- 3.1.2 The redevelopment scheme comprises the replacement and enhancement of the current ancillary accommodation, to provide twenty-six bedrooms, and similarly the enhancement of the church and facilities for the local community. The enhancement and updating of these facilities would provide a better quality environment for the existing users at the site.
- 3.1.3 To enable the replacement and enhancement works outlined above, there would be additionally development of eleven (11) residential apartments, to be provided from first floor to third floor levels, comprising of one-bed to two-bed units. Table 3.1 summarises the proposed residential units on a floor-by-floor basis by unit size.

	UNIT SIZE	
	1-bed	2-bed
Basement	-	-
Ground	-	-
1 st	0	3
2 nd	3	1
3 rd	3	1
TOTAL	6	5

Table 3.1: Summary of Proposed Residential Apartments

- 3.1.4 With the proposed redevelopment scheme, the entrance to the church and ancillary facilities would switch from the Birkenhead Street frontage to the Crestfield Street frontage, to provide access which would be fully DDA-compliant. The refuse storage area for the church and ancillary facilities would be provided within an enclosed area at ground floor level, accessible externally for users of the church and by collection operatives.
- 3.1.5 The proposed residential apartments would have a street-level lobby access along the Birkenhead Street frontage, adjacent to No. 56 Birkenhead Street, with this lobby providing access to both stairs and a lift to the upper floors. There would be an enclosed refuse storage area for residents at ground floor level, with this located adjacent to the residential entrance and accessible for both residents and collection operatives by an external door.
- 3.1.6 Cycle parking for both the retained and enhanced church and ancillary facilities and for the proposed residential apartments would be provided in separate dedicated cycle storage areas at basement level, the area given over to the former equating to around 30m² and the area given over to the latter equating to around 25m².

4 Parking, Servicing & Sustainable Travel Incentives

4.1 Background

- 4.1.1 This section of the report discusses the parking strategy to be brought forward for the site, with this strategy considered against the policy guidance and requirements set at the borough level, but also with due consideration of the current on-street parking demands.
- 4.1.2 The commentary then discusses the servicing strategy to be brought forward for the site, considering separately the proposals for the collection of waste and recyclables and the proposals for the delivery / servicing activity to support both the existing church operations and residents on a day-to-day basis.
- 4.1.3 The final element of this section discusses the sustainable travel incentives which would be brought forward and offered to residents of the proposed units, in lieu of a Residential Travel Plan given the scale of the development. A separate Event Travel Plan for use by the church has been prepared as a framework in parallel to this report.

4.2 Site Parking Strategy

- 4.2.1 As referenced earlier in this document, the proposed eleven residential apartments would not be supported by any dedicated spaces on-site and the scheme would come forward as a car-free scheme, other than for those with mobility difficulties and registered blue badge holders for whom on-street parking permits can be sought if required.
- 4.2.2 This approach accords with Policy DP18 of London Borough of Camden's 'Development Policies 2010-2025 (November 2010)' which presumes against the provision of car parking for developments, referencing that:

'The Council will seek to ensure that developments provide the minimum necessary car parking provision. The Council will expect development to be car free in the Central London Area...and other areas within Controlled Parking Zones that are easily accessible by public transport.'

Development should comply with the Council's parking standards.... Where the Council accepts the need for car parking provision, development should not exceed the maximum standard for the area in which it is located (excluding spaces designated for disabled people). Developments in areas of on-street parking stress should be 'car capped'.

- 4.2.3 Additionally, it is acknowledged, against this policy background, that the site is located in the Central London area for which LB Camden would expect the scheme to come forward as car-free and also that the site is located in a controlled parking zone to and from which travel alternatively by public transport is both practical and convenient. As such, the applicant would enter into a legal agreement such that future occupants would be informed of the obligation not to seek permits for parking within the controlled zone.

- 4.2.4 With regard to access to the on-street parking for those with mobility difficulties, as confirmed by the possession of a 'blue badge', the guiding standard suggests for general housing that where provision is sought this would be in relation to the likely occupancy of a dwelling by an individual in this user group. All of the proposed residential units would be built to Lifetime Homes standards, with three units having the scope to be converted to become wheelchair accessible units, thus it would be typically three spaces being sought.
- 4.2.5 As the site sites within the 'green badge' zone, those with a 'blue badge' are permitted to park without any charge and without any time limit in 'pay and display' spaces, as well as along stretches of double-yellow and single-yellow lines for up to three hours, thus against this background there would be ample opportunity for those with disabilities frequenting the site, be it for the church facilities or for the residential units, to park on-street along Birkenhead Street and Crestfield Street.
- 4.2.6 However, holders of a 'blue badge' would not be permitted to park within the on-street parking banks designated for use by permit holders only during the periods of restriction, which may be a requirement in particular for those occupying the three units within the proposed redevelopment having the scope to be accessible by wheelchair. These residents would have the scope to obtain a further 'green badge' to permit parking in these areas.
- 4.2.7 Whilst the restrictions relating to access of the 'green badge' are based wholly on whether the applicant lives, works or studies in the zone, thus equally applicable to those working within the church building, it should be noted also that with the current level of parking stress during the peak overnight parking period there would be ample space to accommodate the requirements of those with mobility difficulties and that these additional demands would not materially affect the current stress level on street.

4.3 Servicing

- 4.3.1 Servicing of the both the retained and enhanced church with community facilities and the proposed residential units would be undertaken from the street, thus no different to how either the current church operations or the other operations and residential properties along Birkenhead Street and Crestfield Street are serviced.
- 4.3.2 As discussed in Section 2 of this report, there are a number of opportunities for on-street loading and unloading along Birkenhead Street, which would be the street from which the proposed residential units would be serviced, and Crestfield Street, which would be the street from which the retained and enhanced church with community facilities would be serviced, given the location of the accesses for each of these uses respectively.
- 4.3.3 Servicing of the retained and enhanced church with community facilities via Crestfield Street would be best serviced by means of the stretch of single yellow lining running between the refuse store and rear access to the commercial storage operation in Belgrove House opposite, as this provides an inset area of around 25m opposite the site entrance.

- 4.3.4 Additionally, the dedicated loading bay along the opposite side of the road to the site entrance, towards the junction with Euston Road, would also provide a practical and convenient facility for servicing the site, with this facility being located no more than 40m from the proposed main site entrance to the retained and enhanced church facility.
- 4.3.5 Servicing of the proposed residential units via Birkenhead Street would be best serviced by means of the stretch of single yellow lining running immediately north of the site frontage for a length of around 10m to 12m, with this stretch being no more than 20m from the proposed residential entrance, with alternative short stretches primarily on the opposite side of the street available within a distance of 50m.
- 4.3.6 Similarly, there is additionally the dedicated loading bay along the opposite side of the road to the site entrance, towards the junction with Euston Road, which would also provide a practical and convenient facility for servicing the site, with this facility being located again within 50m from the proposed main site entrance to the proposed residential lobby.
- 4.3.7 Drivers of vehicles seeking access of the church or of the residential units would thus have to find an appropriate location to temporarily wait whilst unloading and/or loading.
- 4.3.8 In terms of the collection of general refuse and recyclables, as referenced in the scheme description both the retained and enhanced church facility and the proposed residential apartments would each come forward with an enclosed storage area for general waste and recyclables, with access to these storage areas by collection operatives being facilitated by the provision of doors opening onto the street frontage – onto Crestfield Street for the church facility and onto Birkenhead Street for the residential units.
- 4.3.9 Similarly to the general servicing, the collection of general waste and recyclables would be undertaken by means of collection vehicles running on-street, with the collection operatives moving the storage receptacles between the enclosed storage areas and the waiting vehicle. This strategy similarly reflects that for such collection along the local streets currently.
- 4.3.10 The provision and location of refuse facilities would be enhanced from the existing provision by means of the location.
- 4.3.11 Additionally, there may be occasional one-off requirements of residents, such as when moving into or out from the property, when it would be beneficial for the vehicle to sit directly outside the main entrance to the building along the Birkenhead Street frontage. Since the site sits within a controlled parking zone, with the parking areas marked on-street, upon application the LB Camden can suspend parking bays without need for a temporary traffic order. Residents would be made aware of these requirements as part of the information brought forward in the 'Home Users Guide'.

4.4 Sustainable Travel Incentives & Provisions

- 4.4.1 A 'Home Users Guide' would be issued to each of the residential properties and this would include a range of material relating to travel options available to residents.
- 4.4.2 Information to be provided within the guide pack would include details of the restrictions upon obtaining a permit to park within the controlled parking zone, other than those with mobility difficulties if required, of car club and car hire facilities within the surrounding local area and how these can be accessed and of the on-site cycle storage, as well as a map identifying the cycle routes in the area and an overview map identifying the local public transport routes in and through the area (bus, underground and rail).
- 4.4.3 The information provided to residents in relation to the travel modes and facilities which are both practical and convenient to travel to and from the site would also be complemented by information on the range and location of local amenities and demonstration of how these amenities can be accessed on foot or by cycle initially given the proximity of the majority of key facilities, but also by public transport services to ensure that those with mobility issues are fully included within the considerations of the 'Home Users Guide'.
- 4.4.4 The entrance into the proposed residential units would be taken from the Birkenhead Street frontage and the entrance into the retained and enhanced church facility would be taken from the Crestfield Street frontage, thus both connecting with the local footway network and the routes to and from the local public transport stops and range of local amenities.
- 4.4.5 The residential units would be supported by dedicated cycle parking which would be provided in a secure and covered cycle parking area, by virtue of an internal dedicated storage area at basement level. This would be accessible from the site frontage onto Birkenhead Street, which whilst stepped between the street level and basement level the access would be fitted with gully runs to facilitate the movement of cyclists.
- 4.4.6 Policy DP18 of London Borough of Camden's '*Development Policies 2010-2025 (November 2010)*' also references, in relation to cycle parking, that '*Developments will also be expected to meet the Council's minimum standards for cycle parking*', which the supporting appendix references as being one storage or parking space per unit. For the scale of residential development being proposed, this would require no less than eleven cycle parking spaces.
- 4.4.7 At the London-wide level, the current policy as presented in the '*London Plan – Consolidated with Alterations since 2011 (March 2015)*' references firstly at Policy 6.9 '*Cycling*' in the context of planning decisions that '*developments should provide secure, integrated, convenient and accessible cycle parking facilities in line with the minimum standards set out in Table 6.3*'. The need to meet these minimum cycle parking standards is further reiterated in Policy 6.13 '*Parking*'.

- 4.4.8 In terms of the long-stay cycle parking for residents, the minimum cycle parking requirement is to provide no less than one cycle parking spaces for each one-bed dwelling unit and to provide no less than two cycle parking spaces for each larger-sized dwelling unit, thus suggesting a requirement of sixteen cycle parking spaces. The proposed basement area would have the scope to accommodate twenty cycles, thus in excess of the minimum requirements set by both LB Camden and the GLA / TfL.
- 4.4.9 With the guide for residents emphasising the scope to undertake the typical short-length journeys between the site and local amenities either on foot or by cycle, then subsequently to undertake longer-distance journeys by public transport and deterring car-based travel by virtue of the scheme coming forward as car-free, a range of sustainable travel incentives would brought forward and made available to residents upon first occupation.
- 4.4.10 The scheme promoter would commit to supporting residents to travel to and from the units brought forward within the redevelopment scheme without necessarily needing to access and/or own a car by providing each household with the following:
- provision of London Transport monthly Travelcards for Zones 1 to 6, totalling no more than three per household within the first year of occupation, but which can be made available to any resident within each household during that period;
 - reimbursement of costs of up to £200 per household within the first year of occupation in relation to purchases made at a number of cycling and sportswear local outlets within the Camden borough (a list to be provided within the Home Users Guide);
 - fund car club membership of either City Car Club or Zipcar for each of the eleven residential units, with the funding for each to cover a five-year period.

5 Development Trips Characteristics & Impacts

5.1 Background

- 5.1.1 This section of the report considers the likely trip patterns and impacts of the proposal to redevelop the existing King’s Cross Methodist Church, to bring forward a replacement and enhanced church and facilities for the local community and additionally, to enable these works, the provision of eleven new-build residential apartments.
- 5.1.2 The purpose of the enhancement and updating works to the church and local community facilities would be to provide a better quality environment for the existing users at the site, thus not resulting in any material change in tripmaking behaviour for these operations. As such, no further consideration is given to the trips associated with the existing operations, though a separate Event Travel Plan has been prepared to sustain sustainable travel.
- 5.1.3 To undertake the appraisal of the likely trip patterns associated with the proposed residential units, which would be those impacting additionally upon the travel networks, trips by mode have been determined through a review of TRAVL research and data, primarily in relation to the overall trips volumes, and a review of local census data, in relation to determining an appropriate mode share for these trips.

5.2 Proposed Residential Trip Generation

- 5.2.1 The proposed redevelopment of the site would include the bringing forward of eleven residential apartments, comprising one and two-bed units, with these coming through generally as part of a car-free scheme, other than for those with mobility difficulties.
- 5.2.2 Research has been undertaken previously by MVA, on behalf of TRAVL, with regard to generic residential trip rates as they relate to both the general PTAL of the site and the number of bedrooms within the units. The majority of the sites available within the last stand-alone release of the TRAVL database were also available at the time of the research.
- 5.2.3 A copy of this research note is attached at **Appendix H**, with the key trip rates summarised in the following table, Table 5.1, based on private residential apartments.

Number of Bedrooms	PTAL	TRAVL Sample Size	Trips per Residential Unit – ALL MODES		
			Daily	AM Peak	PM Peak
1	4-6	22	2.20	0.58	0.30
	2-3	43	2.80	0.57	0.25
2	4-6	47	2.93	0.53	0.39
	2-3	58	2.78	0.44	0.31
3	4-6	14	2.91	0.57	0.29
	2-3	47	4.18	0.82	0.38

Table 5.1: Summary of Potential Residential Trip Rates (All Modes) from TRAVL Research

- 5.2.4 With the majority of weekday trips being to and from work, the modal split identified through the 'journey to work' from census data can provide a sound estimate of the modal split for the proposed residential units within the King's Cross Methodist Church site. The local neighbourhood statistics have been updated to reflect results of the 2011 census.
- 5.2.5 The following table, Table 5.2, summarises the 'journey to work' mode shares for residents of the area surrounding the site (Camden Super Output Area 024C), having first discounted those classified as 'not in employment' and as 'work mainly at or from home', but noting those which have specified 'other'.
- 5.2.6 The information presented in the table has been expanded to illustrate the corresponding person trips by mode. This is based on the generic daily trip rates and peak hour trip rates (all modes) brought forward from the TRAVL research note for the different sizes of residential units within areas with a PTAL of between 4 and 6 inclusive.

Travel Mode	MODE SHARE & PERSON TRIPS (TWO-WAY)			
	Local Area	A.M. Peak Hour	P.M. Peak Hour	Daily
Car Driver	8%	1	0	2
Taxi	0%	0	0	0
Car Passenger	0%	0	0	0
Motorcycle	0%	0	0	0
Bus	22%	1	1	6
Underground	24%	1	1	7
Rail	9%	1	1	3
Bicycle	4%	0	0	1
Foot	31%	2	1	9
Other	2%	0	0	0
TOTAL	100%	6	4	28

NOTE: Where appropriate, trips by mode have been rounded to ensure figures tally.

Table 5.2: Summary of Residential Mode Share & Trips by Mode

- 5.2.7 The projected trips associated with the proposed residential units identify, given the small-scale nature, a relatively low-level of tripmaking over the course of a typical day, with the majority of these undertaken by public transport, in particular by underground and bus which is reflective of the range of transport modes available to residents in this area, but also a sizeable proportion of trips on foot which is reflective of the central London location.
- 5.2.8 For robustness, a separate review of the sites within the residential category of the previous stand-alone TRAVL database (TRAVL 8.19) has been undertaken also, with the initial search criteria having been sites of up to 200 residential units, to support a suitable sample size, with either a central London or inner London location, surveyed no earlier than 2004 and with a PTAL between 4 and 6. This search identified six sites, as summarised in Table 5.3.

5.2.9 The six sites identified through the application of the initial search criteria comprised three sites which could be classed as affordable (Albion Wharf, Green Dragon House, St George’s) and three which could be classed as market private (Discovery Dock, Parliament View, St George’s). A further review has been undertaken of each of the six sites to consider the appropriateness of the corresponding data to the proposed residential units at the site.

	YEAR	PTAL	No. of Units	Zone	Location
Albion Wharf	2005	4	45	Central	Battersea
Green Dragon House	2008	6	29	Inner	Holborn
Discovery Dock	2008	4	192	Inner	Docklands
Parliament View	2004	4	190	Central	Albert Embankment
St George’s – Afford.	2006	6	173	Inner	Vauxhall
St George’s - Private	2006	6	118	Inner	Vauxhall

Table 5.3: Summary of TRAVL Residential Sites (based on initial search criteria)

5.2.10 Of the three sites which could be classed as affordable, one of these (Green Dragon House) is operated by a housing association as rented accommodation and so is not considered analogous to the proposed market units within the development scheme. The other two affordable sites could be considered analogous in that the residential accommodation provided in these blocks is generally privately owned, albeit not sold at full market rates.

5.2.11 Of the three sites which could be classed as market private, one of these (Parliament View) comprises a significant proportion of second homes (around 30%) and thus may not be fully occupied. However, this site has not been discounted from further consideration as there would be no preclusion for a similar proportion of the proposed residential units within the redevelopment scheme being bought as a second home.

5.2.12 Table 5.4 summarises the a.m. peak hour, p.m. peak hour and typical daily (07:00-19:00) trip rates for all modes combined based on the average trip rates coming forward for the two retained affordable housing sites and the three market private housing sites. These are presented with the corresponding trips by all modes when applied to the proposed units.

	DAILY			A.M. PEAK HOUR			P.M. PEAK HOUR		
	ARR.	DEP.	TOT.	ARR.	DEP.	TOT.	ARR.	DEP.	TOT.
TRAVL Rates (Five Sites)	1.810	2.016	3.826	0.248	0.378	0.626	0.168	0.167	0.335
Proposed Trips	20	22	42	3	4	7	2	2	4

Table 5.4: Summary of Potential Residential Trip Rates & Trips (All Modes) from TRAVL Data

5.2.13 Based on the trip rates derived specifically from the five sites extracted from TRAVL, by virtue of the selection criteria, it is evident that for the peak hours in particular these are not materially different from those derived from the generic rates within the MVA research on behalf of TRAVL. The resultant daily trips based on the bespoke TRAVL data suggest around an additional trip per unit when compared with the daily trips based on the MVA research.

5.2.14 As such, it is considered that the residential trip rates determined through the site-specific exercise are validated and can be taken forward to project robustly the trips associated with the proposed eleven residential units. Additionally, these residential trip rates support further disaggregation between arrivals at and departures from the site, with the modal share again informed by the local census data referenced earlier in this section of the report.

5.2.15 Table 5.5 presents the resultant proposed residential trips firstly for the typical daytime period (07:00-19:00) and then for each of the a.m. and p.m. peak hours, based on the bespoke TRAVL trip rates and the local census data

	MODE SHARE	DAILY (07:00-19:00)		A.M. PEAK HOUR		P.M. PEAK HOUR	
		Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Car Driver	8%	2	2	0	0	0	0
Car Passenger	0%	0	0	0	0	0	0
Taxi	0%	0	0	0	0	0	0
Motorcycle	0%	0	0	0	0	0	0
Bus	22%	4	5	1	1	0	0
Underground	24%	5	5	1	1	1	1
Rail	9%	2	2	0	1	0	0
Bicycle	4%	1	1	0	0	0	0
Foot	31%	6	7	1	1	1	1
Other	2%	0	0	0	0	0	0
TOTAL	100%	20	22	3	4	2	2

NOTE: Where appropriate, trips by mode have been rounded to ensure figures tally.

Table 5.5: Summary of Proposed Residential Units Trips by Mode

5.2.16 Again, the projected trips associated with the proposed residential units identify a relatively low-level of tripmaking over the course of a typical day, continuing to show corresponding low volumes of additional trips to and from the site during the peak hours as overall trips as well as confirming use primarily of the bus, underground and on foot for travel.

5.3 Potential Scheme Impacts

5.3.1 The assessment presented in the preceding sub-section of this report identifies that the proposed residential units could result in an additional 42 daily person trips (two-way) to and from the site, via the proposed residential entrance on Birkenhead Street. These estimates of additional trips are considered to represent a sound and robust assessment, given that on average they suggest just under four person trips per unit per day.

- 5.3.2 Without disaggregating these additional trips to and from site between the different modes, it is evident that no more than an additional seven or so trips during the peak hours (based on the busier a.m. peak), as well as the additional trips over the course of the day, would not represent a significant increase in trips to and from the site as a result of the enabling units.
- 5.3.3 *In terms of the potential impacts of trips by car*, these have been projected at no more than four two-way movements, with two arrival trips and two departure trips, with no car-based trips projected to occur within either of the typical network peak hours. This level of car-based travel is considered to be robust in that the proposed residential scheme would come forward as car-free, but with the scope for those with mobility difficulties to have access to on-street parking and with the scope for others to make use of the local car club facilities.
- 5.3.4 *In terms of potential impacts of trips by public transport*, collectively these have been identified as having the highest number of additional trips, with twenty-three additional trips two-way by public transport during a typical day, but with no more than five trips (two as arrivals and three as departures) by public transport during the peak hours (based on the busier a.m. peak). Further review suggests no more than an additional arrival trip and an additional departure trip by each of the public transport modes during the peak hours.
- 5.3.5 With between 180 and 190 buses arriving into the King's Cross area within the vicinity of the site during a typical hour, and similarly between 180 and 190 buses departing, if the two peak hour arrival trips and the three peak hour departure trips by public transport were to be undertaken by this single mode of travel, it would equate an additional person arriving amongst ninety buses coming into the local area and an additional person departing amongst sixty buses running out of the local area, which cannot be considered material.
- 5.3.6 Similarly, with almost 90 underground services arriving into King's Cross St Pancras station during a typical hour, and similarly around 90 underground services departing, if the two peak hour arrival trips and the three peak hour departure trips by public transport were to be undertaken by this single mode of travel, it would equate to an additional person amongst about forty-five services arriving at the station and an additional person amongst about thirty services departing from the station, which again cannot be considered material.
- 5.3.7 *In terms of potential impacts of trips by the 'slow' modes of cycling and walking*, as a single mode of travel the highest number of trips would be on foot, with around 13 pedestrian movements two-way over the course of a typical day, with no more than two additional pedestrian movements on foot during either of the peak hours. When combined with trips by public transport, which would have a foot trip between the site and the public transport node, there would be no more than seven trips on foot during the peak hour.
- 5.3.8 The width of the footway along the western side of Birkenhead Street, between the site and Euston Road is of a standard width with the scope to accommodate between 720 and 960 persons per hour and maintain a 'comfortable' environment, but with observations confirming that peak hourly flow did not exceed 600 persons per hour. The additional seven further pedestrian movements would not materially impact on this current level of comfort.

6 Conclusions

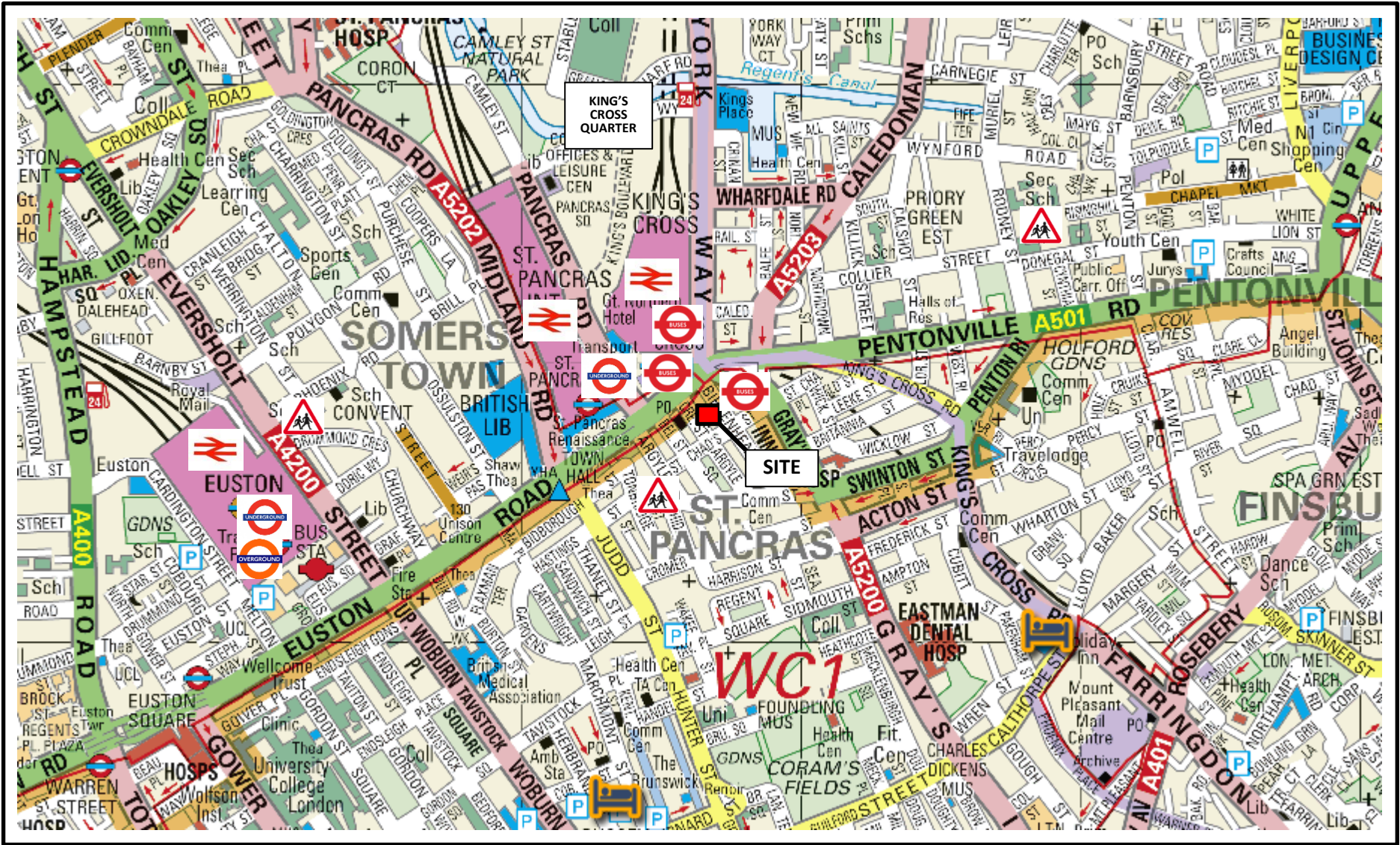
- 6.1.1 This report has been prepared on behalf of West London Mission, in relation to a planning application for redevelopment of the existing King's Cross Methodist Church at Birkenhead Street, London, to facilitate the replacement and enhancement of the current church and community facilities and provide eleven residential apartments to enable these works.
- 6.1.2 The site is located within a short walking distance of the A501 Euston Road within the immediate vicinity of King's Cross and St Pancras railway stations, with the full range of key local amenities no more than a kilometre of the site and with the majority of these (food shops, post office and post boxes, bank and cash points, pharmacy, medical surgery, community centre, church, public house, outdoor open space, primary school and children's play area) all within 500m of the site, demonstrating that key trips can be realistically undertaken on foot or by cycle in the first instance.
- 6.1.3 The site has a specific PTAL score of 6b, based upon access of fourteen high-frequency bus services operating via stops within the vicinity of King's Cross station, of seven different London Underground lines and of numerous National Rail services via King's Cross, St Pancras and Euston stations. All but services via Euston are within 500m of the site, thus no more than a walk of six minutes typically.
- 6.1.4 An assessment of the tripmaking potential of the additional eleven residential apartments to be brought forward within the scheme suggests no more than between 40 and 45 person trips during a typical day, with between 20 and 25 of these by the range of public transport services available to and from the local area and around 13 being solely on foot. Travel by car would be exceptionally limited, projected at no more than four two-way trips daily.
- 6.1.5 A further assessment of the impacts of trips by mode during the peak hours has identified no more than an additional person for every sixty bus services or no more than an additional person for every thirty underground services, based on the marginally higher departure movement during the a.m. peak hour, as well as no more than additional seven pedestrian movements along the footway on Birkenhead Street, none of which could be considered material in terms of any corresponding impact.
- 6.1.6 The scheme would come forward as car-free, other than for those with mobility difficulties. Whilst with an additional permit this user group would have no restriction upon parking within the vicinity of the site, a full parking survey has also been undertaken and the results indicate that current overnight parking stress sits around the 70% stress level, thus not being materially impacted by this or other limited car-based demands.
- 6.1.7 Using good practice and empirical evidence there is an objective demonstration that the proposed redevelopment scheme and the resultant additional residential trips would not impact upon the operational efficiency of the full range of travel networks and infrastructure. Therefore, it is considered that there are no highway and transport reasons to refuse the planning application to redevelop the King's Cross Methodist Church site.







APPENDICES



APPENDIX A



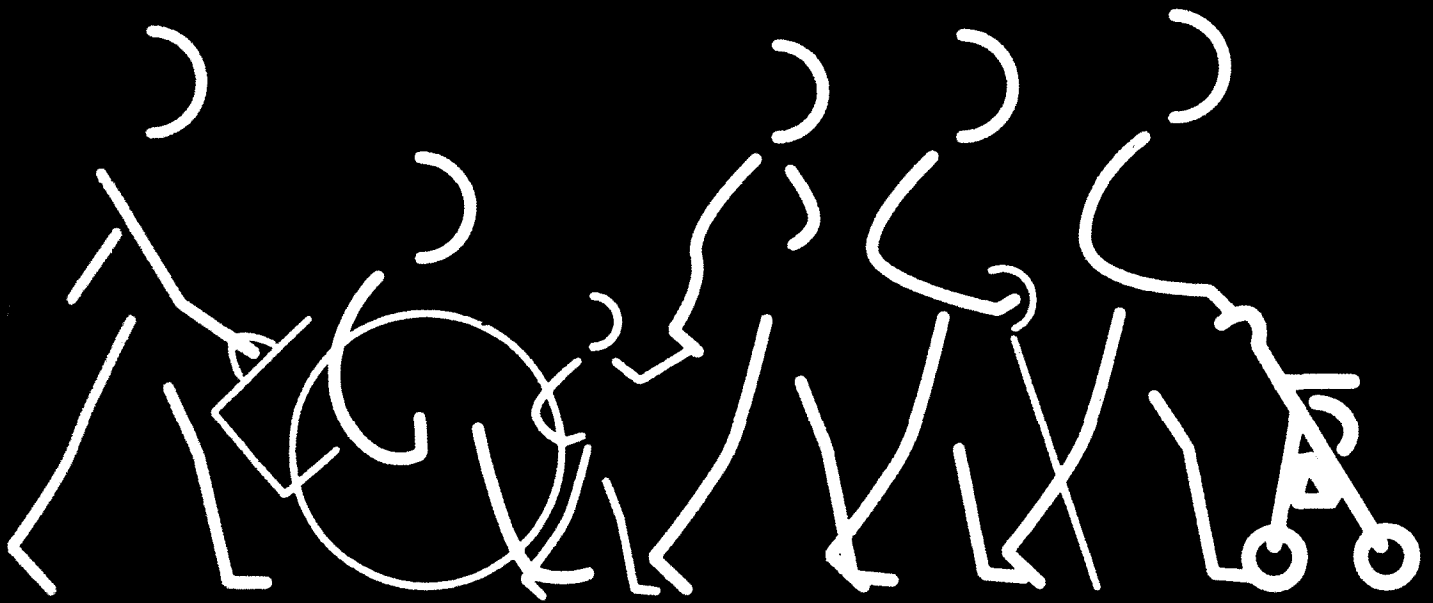
PLAN 1
SITE LOCATION

- Local Bus Stops 
- Local Schools 
- National Rail Stations 
- Underground / Overground 



APPENDIX B

PROVIDING FOR JOURNEYS ON FOOT



THE INSTITUTION OF HIGHWAYS & TRANSPORTATION



Sainsbury's
making life taste better.

sustrans
ROUTES FOR PEOPLE




London Walking Forum



Table 3.2: Suggested Acceptable Walking Distance.

	Town centres (m)	Commuting/School Sight-seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred maximum	800	2000	1200

3.33. Planning Policy Guidance Note 6 states that the acceptable distance from a supermarket car park to the town centre is about 200–300m (DOE, 1996). Further sources of information on acceptable walking distances are provide by IHT (1997 and 1999) and DETR (1998).

3.34. For shopping, Carley and Donaldsons (1996) advise that that “acceptable” walking distances depend on the quality of the shops, the size of the shopping centre and the length of stay of the shopper. Specifically, they state that parking time governs the distance walked from parking. See Table 3.3) Higher quality and larger centres generate longer acceptable walking distances with up to 1250m of walking journey to 100,000m² of floor space.

Table 3.3: Acceptable walking distances for car-borne shoppers.

Parking time (hours)	Acceptable walking distance (metres)
30 mins	100
1	200
2	400
4	800
8	1000

Source: Carley and Donaldsons (1997).

Individual Sites/Redevelopment

3.35. For smaller areas and individual new developments or redevelopment, usually within an existing urban area, origin /destination surveys and network planning may not be appropriate. It will be important to identify the anticipated desire lines, crossing locations, volume and type of pedestrian activity. The practicality and attractiveness of walking depend not only on the general location but also on the access details. The most important considerations are likely to be:

-) the ease of pedestrian access to the site
-) the orientation and location of buildings within the site
-) the access arrangements within the site
-) the architectural style of the development (car or pedestrian oriented).

3.36. Additional walking distances or gradients, can be crucial in determining whether a development is pedestrian friendly. Layouts that require pedestrians to walk through car parks or to follow indirect footpaths should be avoided as far as possible. These are issues that should be addressed jointly by planners and engineers involved in development control.

3.37. If the development is sufficiently large to warrant a Transport Impact Assessment, the local authority should ensure that this thoroughly addresses the issues of pedestrian access, both to the site and within it. Some guidance is provided in IHT *Guidelines for Providing for Public Transport in Developments* (IHT, 1999). Further Guidelines on Transport Assessments are expected from DETR.



APPENDIX C

PTAI Study Report File Summary

PTAI Run Parameters

PTAI Run 20151708150843
Description 20151708150843
Run by user PTAL web application
Date and time 17/08/2015 15:08

Walk File Parameters

Walk File PLSQLTest
Day of Week M-F
Time Period AM Peak
Walk Speed 4.8 kph
BUS Walk Access Time (mins) 8
BUS Reliability Factor 2.0
LU LRT Walk Access Time (mins) 12
LU LRT Reliability Factor 0.75
NATIONAL_RAIL Walk Access Time (mins) 12
NATIONAL_RAIL Reliability Factor 0.75

Coordinates: 530348, 182912

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Weight	Walk time (mins)	SWT (mins)	TAT (mins)	EDF	AI
BUS	KINGS CROSS ST PANCRAS	46	172.03	6.0	0.5	2.15	7.0	9.15	3.28	1.64

BUS	KINGS CROSS ST PANCRAS	45	172.03	7.5	0.5	2.15	6.0	8.15	3.68	1.84
BUS	KINGS CROSS STATION	259	175.33	8.0	0.5	2.19	5.75	7.94	3.78	1.89
BUS	KINGS CROSS ST PANCRAS	63	172.03	12.0	0.5	2.15	4.5	6.65	4.51	2.26
BUS	KINGS CROSS STATION	17	175.33	7.5	0.5	2.19	6.0	8.19	3.66	1.83
BUS	KINGS CROSS ST PANCRAS	73	172.03	18.0	1.0	2.15	3.67	5.82	5.16	5.16
BUS	KINGS CROSS ST PANCRAS	476	172.03	7.5	0.5	2.15	6.0	8.15	3.68	1.84
BUS	KINGS CROSS ST PANCRAS	59	172.03	9.0	0.5	2.15	5.33	7.48	4.01	2.0
BUS	KINGS CROSS ST PANCRAS	10	172.03	10.0	0.5	2.15	5.0	7.15	4.2	2.1
BUS	KINGS CROSS ST PANCRAS	30	172.03	7.5	0.5	2.15	6.0	8.15	3.68	1.84
BUS	KINGS CROSS ST PANCRAS	91	172.03	9.0	0.5	2.15	5.33	7.48	4.01	2.0
BUS	KINGS CROSS ST PANCRAS	390	172.03	8.0	0.5	2.15	5.75	7.9	3.8	1.9

BUS	KINGS CROSS ST PANCRAS	214	172.03	8.0	0.5	2.15	5.75	7.9	3.8	1.9
BUS	KINGS CROSS ST PANCRAS	205	172.03	8.0	0.5	2.15	5.75	7.9	3.8	1.9
LU LRT	Euston	Northern Line Kennington to Edgware	906.1	5.0	0.5	11.33	6.75	18.08	1.66	0.83
LU LRT	Kings Cross St.Pancras	Northern Line High Barnet to Morden	228	9.0	0.5	2.85	4.08	6.93	4.33	2.16
LU LRT	Kings Cross St.Pancras	Victoria Line Seven Sisters to Brixton	228	11.7	0.5	2.85	3.31	6.16	4.87	2.43
LU LRT	Kings Cross St.Pancras	Victoria Line Brixton to Walthamstow Central	228	15.7	1.0	2.85	2.66	5.51	5.44	5.44
LU LRT	Euston	Northern Line Mill Hill East to Kennington	906.1	4.3	0.5	11.33	7.73	19.05	1.57	0.79
LU LRT	Euston	Northern Line Morden to Mill Hill East	906.1	1.0	0.5	11.33	30.75	42.08	0.71	0.36
LU LRT	Kings Cross St.Pancras	Northern Line Edgware to Morden	228	9.7	0.5	2.85	3.84	6.69	4.48	2.24
LU LRT	Euston	Northern Line Edgware to Morden	906.1	8.3	0.5	11.33	4.36	15.69	1.91	0.96
LU LRT	Euston	Northern Line High Barnet to Kennington	906.1	5.4	0.5	11.33	6.31	17.63	1.7	0.85
LU LRT	Euston	Northern Line Morden to High Barnet	906.1	3.7	0.5	11.33	8.86	20.18	1.49	0.74
LU LRT	Kings Cross St.Pancras	Northern Line Morden to Mill Hill East	228	2.7	0.5	2.85	11.86	14.71	2.04	1.02
LU LRT	Kings Cross St.Pancras	Piccadilly Line Ruislip to Arnos Grove	228	1.3	0.5	2.85	23.83	26.68	1.12	0.56
LU LRT	Kings Cross St.Pancras	Metropolitan Line Watford to Aldgate	228	2.3	0.5	2.85	13.79	16.64	1.8	0.9

LU LRT	Kings Cross St.Pancras	Hammersmith and City Hammersmith (H&C Line) to Barking	228	6.0	0.5	2.85	5.75	8.6	3.49	1.74
LU LRT	Kings Cross St.Pancras	Piccadilly Line Oakwood to Rayners Lane	228	0.7	0.5	2.85	43.61	46.46	0.65	0.32
LU LRT	Kings Cross St.Pancras	Metropolitan Line Uxbridge to Aldgate	228	6.3	0.5	2.85	5.51	8.36	3.59	1.79
LU LRT	Kings Cross St.Pancras	Metropolitan Line Aldgate to Wembley Park	228	1.0	0.5	2.85	30.75	33.6	0.89	0.45
LU LRT	Kings Cross St.Pancras	Metropolitan Line Amersham to Aldgate	228	3.0	0.5	2.85	10.75	13.6	2.21	1.1
LU LRT	Kings Cross St.Pancras	Piccadilly Line Cockfosters to Heathrow Terminal 4	228	6.0	0.5	2.85	5.75	8.6	3.49	1.74
LU LRT	Kings Cross St.Pancras	Piccadilly Line Ruislip to Cockfosters	228	1.3	0.5	2.85	23.83	26.68	1.12	0.56
LU LRT	Kings Cross St.Pancras	Piccadilly Line Rayners Lane to Cockfosters	228	2.7	0.5	2.85	11.86	14.71	2.04	1.02
LU LRT	Kings Cross St.Pancras	Piccadilly Line Oakwood to Uxbridge	228	0.7	0.5	2.85	43.61	46.46	0.65	0.32
LU LRT	Kings Cross St.Pancras	Metropolitan Line Croxley to Aldgate	228	0.3	0.5	2.85	100.75	103.6	0.29	0.14
LU LRT	Kings Cross St.Pancras	Metropolitan Line Aldgate to Watford	228	4.0	0.5	2.85	8.25	11.1	2.7	1.35
LU LRT	Kings Cross St.Pancras	Piccadilly Line Rayners Lane to Arnos Grove	228	1.3	0.5	2.85	23.83	26.68	1.12	0.56
LU LRT	Kings Cross St.Pancras	Piccadilly Line Arnos Grove to Northfields	228	2.3	0.5	2.85	13.79	16.64	1.8	0.9
LU LRT	Kings Cross St.Pancras	Circle Line Hammersmith (H&C Line) to Edgware Road (Circle Line)	228	6.0	0.5	2.85	5.75	8.6	3.49	1.74
LU LRT	Kings Cross St.Pancras	Metropolitan Line Chesham to Aldgate	228	0.7	0.5	2.85	43.61	46.46	0.65	0.32

LU LRT	Kings Cross St.Pancras	Piccadilly Line Heathrow Terminal 4 to Arnos Grove	228	2.0	0.5	2.85	15.75	18.6	1.61	0.81
LU LRT	Kings Cross St.Pancras	Piccadilly Line Uxbridge to Cockfosters	228	2.7	0.5	2.85	11.86	14.71	2.04	1.02
LU LRT	Kings Cross St.Pancras	Piccadilly Line Cockfosters to Heathrow T5	228	6.0	0.5	2.85	5.75	8.6	3.49	1.74
LU LRT	Kings Cross St.Pancras	Piccadilly Line Arnos Grove to Uxbridge	228	1.3	0.5	2.85	23.83	26.68	1.12	0.56
LU LRT	Kings Cross St.Pancras	Metropolitan Line Aldgate to Harrow-on-the-Hill	228	2.3	0.5	2.85	13.79	16.64	1.8	0.9
LU LRT	Kings Cross St.Pancras	Piccadilly Line Oakwood to Ruislip	228	0.7	0.5	2.85	43.61	46.46	0.65	0.32
NATIONAL_RAIL	St Pancras Domestic	MOORGATE to LUTON	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	BEDFORD MIDLAND to MOORGATE	278.13	2.6	1.0	3.48	12.29	15.77	1.9	1.9
NATIONAL_RAIL	St Pancras Domestic	ST ALBANS BR to SUTTON (SURREY)	278.13	0.67	0.5	3.48	45.53	49.0	0.61	0.31
NATIONAL_RAIL	St Pancras Domestic	ST ALBANS BR to WEST NORWOOD BR	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	BEDFORD MIDLAND to LONDON BLACKFRIARS	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	DOVER PRIORY to St Pancras Domestic	278.13	1.33	0.5	3.48	23.31	26.78	1.12	0.56
NATIONAL_RAIL	St Pancras Domestic	LUTON to MOORGATE	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	St Pancras Domestic to MARGATE	278.13	1.0	0.5	3.48	30.75	34.23	0.88	0.44
NATIONAL_RAIL	St Pancras Domestic	WIMBLEDON BR to ST ALBANS BR	278.13	1.33	0.5	3.48	23.31	26.78	1.12	0.56
NATIONAL_RAIL	St Pancras Domestic	SELHURST to ST ALBANS BR	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16

NATIONAL_RAIL	St Pancras Domestic	SUTTON (SURREY) to ST ALBANS BR	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	St Pancras Domestic to FAVERSHAM	278.13	2.0	0.5	3.48	15.75	19.23	1.56	0.78
NATIONAL_RAIL	St Pancras Domestic	Ebbsfleet to St Pancras Domestic	278.13	1.33	0.5	3.48	23.31	26.78	1.12	0.56
NATIONAL_RAIL	St Pancras Domestic	MOORGATE to LUTON	278.13	0.67	0.5	3.48	45.53	49.0	0.61	0.31
NATIONAL_RAIL	St Pancras Domestic	WIMBLEDON BR to LUTON	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	MOORGATE to BEDFORD MIDLAND	278.13	0.6	0.5	3.48	50.75	54.23	0.55	0.28
NATIONAL_RAIL	St Pancras Domestic	WIMBLEDON BR to BEDFORD MIDLAND	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	BEDFORD MIDLAND to MOORGATE	278.13	1.0	0.5	3.48	30.75	34.23	0.88	0.44
NATIONAL_RAIL	St Pancras Domestic	BEDFORD MIDLAND to BRIGHTON	278.13	2.0	0.5	3.48	15.75	19.23	1.56	0.78
NATIONAL_RAIL	St Pancras Domestic	BEDFORD MIDLAND to SUTTON (SURREY)	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	BROADSTAIRS to St Pancras Domestic	278.13	1.0	0.5	3.48	30.75	34.23	0.88	0.44
NATIONAL_RAIL	St Pancras Domestic	MOORGATE to ST ALBANS BR	278.13	1.0	0.5	3.48	30.75	34.23	0.88	0.44
NATIONAL_RAIL	St Pancras Domestic	ST ALBANS BR to MOORGATE	278.13	0.67	0.5	3.48	45.53	49.0	0.61	0.31
NATIONAL_RAIL	St Pancras Domestic	WIMBLEDON BR to BEDFORD MIDLAND	278.13	0.33	0.5	3.48	91.66	95.14	0.32	0.16
NATIONAL_RAIL	St Pancras Domestic	LUTON to MOORGATE	278.13	0.67	0.5	3.48	45.53	49.0	0.61	0.31
NATIONAL_RAIL	LONDON EUSTON BR	BLETCHLEY to LONDON EUSTON BR	906.1	1.0	0.5	11.33	30.75	42.08	0.71	0.36

NATIONAL_RAIL	LONDON EUSTON BR	Rugby to LONDON EUSTON BR	906.1	0.33	0.5	11.33	91.66	102.99	0.29	0.15
NATIONAL_RAIL	LONDON EUSTON BR	LONDON EUSTON BR to TRING	906.1	2.0	0.5	11.33	15.75	27.08	1.11	0.55
NATIONAL_RAIL	LONDON EUSTON BR	MILTON KEYNES CENTRAL to LONDON EUSTON BR	906.1	1.3	0.5	11.33	23.83	35.15	0.85	0.43
NATIONAL_RAIL	LONDON EUSTON BR	LONDON EUSTON BR to WATFORD JUNCTION	906.1	3.0	0.5	11.33	10.75	22.08	1.36	0.68
NATIONAL_RAIL	LONDON EUSTON BR	WATFORD JUNCTION to LONDON EUSTON BR	906.1	0.33	0.5	11.33	91.66	102.99	0.29	0.15
NATIONAL_RAIL	LONDON KINGS CROSS BR	WELWYN GARDEN CITY to LONDON KINGS CROSS BR	228	0.33	0.5	2.85	91.66	94.51	0.32	0.16
NATIONAL_RAIL	LONDON KINGS CROSS BR	LETCHWORTH to LONDON KINGS CROSS BR	228	0.67	0.5	2.85	45.53	48.38	0.62	0.31
NATIONAL_RAIL	LONDON KINGS CROSS BR	Cambridge to LONDON KINGS CROSS BR	228	2.3	0.5	2.85	13.79	16.64	1.8	0.9
NATIONAL_RAIL	LONDON KINGS CROSS BR	WELWYN GARDEN CITY to LONDON KINGS CROSS BR	228	0.33	0.5	2.85	91.66	94.51	0.32	0.16
NATIONAL_RAIL	LONDON KINGS CROSS BR	ROYSTON HERTS to LONDON KINGS CROSS BR	228	0.33	0.5	2.85	91.66	94.51	0.32	0.16
NATIONAL_RAIL	LONDON KINGS CROSS BR	WELWYN GARDEN CITY to LONDON KINGS CROSS BR	228	0.33	0.5	2.85	91.66	94.51	0.32	0.16
NATIONAL_RAIL	LONDON KINGS CROSS BR	LETCHWORTH to LONDON KINGS CROSS BR	228	0.33	0.5	2.85	91.66	94.51	0.32	0.16

NATIONAL_RAIL	LONDON KINGS CROSS BR	LONDON KINGS CROSS BR to Peterborough	228	2.0	0.5	2.85	15.75	18.6	1.61	0.81
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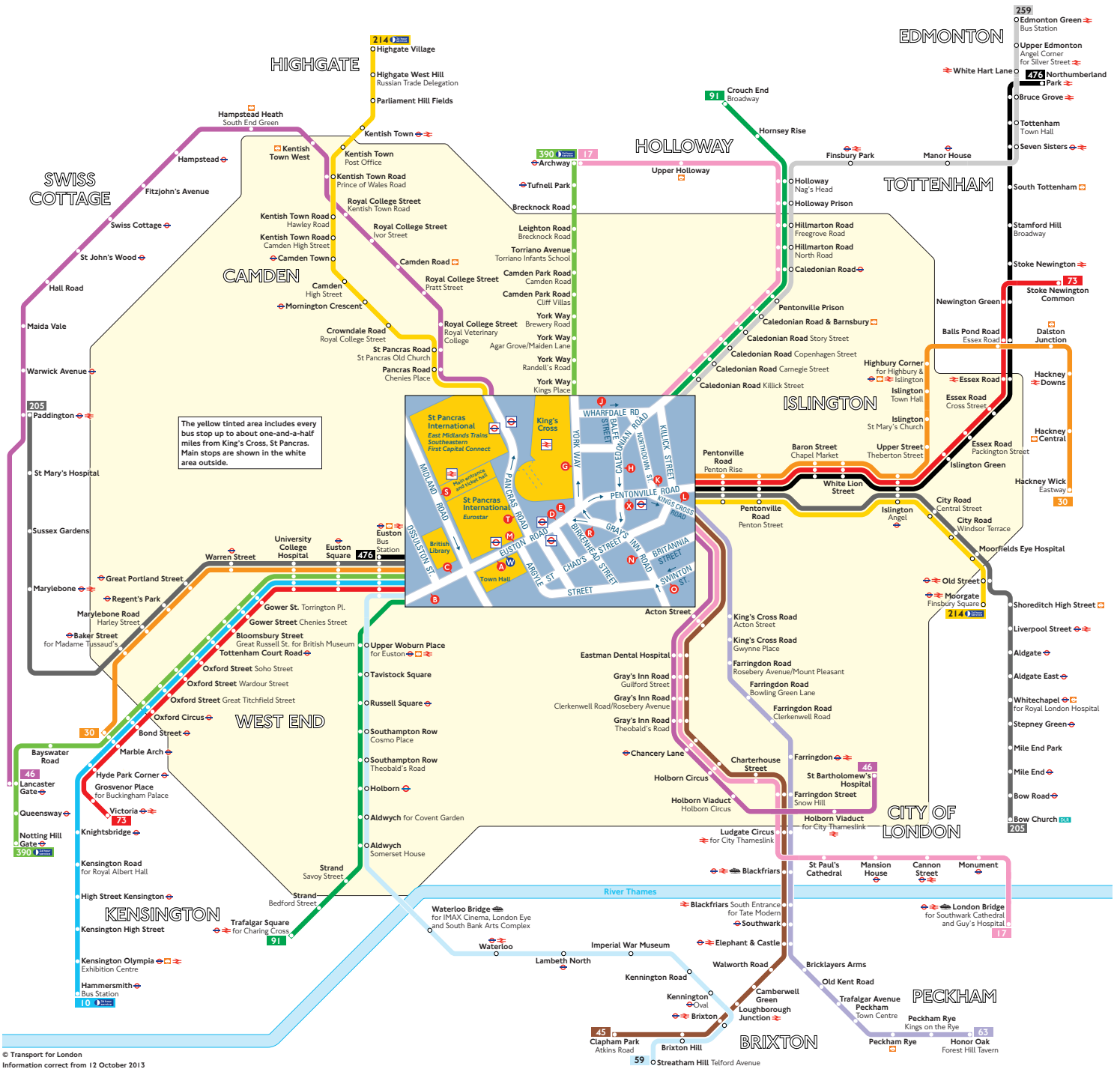
Total AI for this POI is 83.94.

PTAL Rating is 6b.



APPENDIX D

Buses from King's Cross, St Pancras



The yellow tinted area includes every bus stop up to about one-and-a-half miles from King's Cross, St Pancras. Main stops are shown in the white area outside.

Key

- Connections with London Underground
- Connections with National Rail
- Connections with Docklands Light Railway
- Connections with river boats

A Red discs show the bus stop you need for your chosen bus service. The disc **A** appears on the top of the bus stop in the street (see map of town centre in centre of diagram).

Route finder

Day buses including 24-hour services

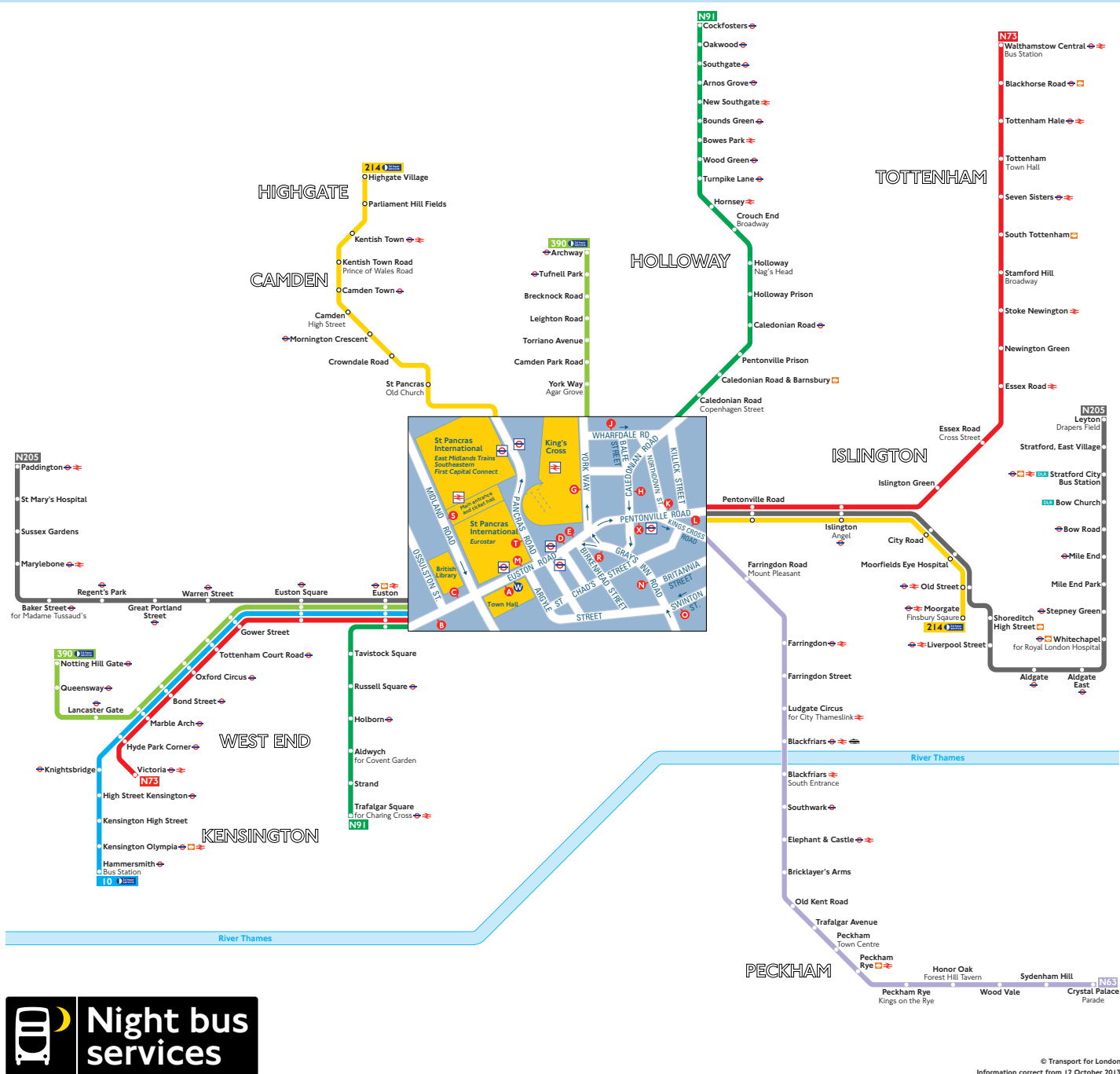
Bus route	Towards	Bus stops
10	Hammersmith	A B H J R
17	Archway	G J N
30	London Bridge	H L
	Hackney Wick	C E K
	Marble Arch	A B R X
45	Clapham Park	D L S
46	Lancaster Gate	N T
	St Bartholomew's Hospital	D L S
59	Streatham Hill	A B H J R
63	Honor Oak	D L S
73	Stoke Newington	C E K
	Victoria	A B R X
91	Crouch End	C G J M
	Trafalgar Square	A B H R
205	Bow Church	C E K
	Paddington	A B R X
214	Highgate Village	T X
	Moorgate	E K S
259	Edmonton Green	G J N
390	Archway	C G M
	Notting Hill Gate	A B H J R
476	Euston	A B R X
	Northumberland Park	C E K

Night buses
 For night bus information, please see separate poster








APPENDIX E

Night buses from King's Cross, St Pancras



Key

-  Connections with London Underground
-  Connections with London Overground
-  Connections with National Rail
-  Connections with Docklands Light Railway
-  Connections with river boats

 Red discs show the bus stop you need for your chosen bus service. The disc  appears on the top of the bus stop in the street (see map of town centre in centre of diagram).

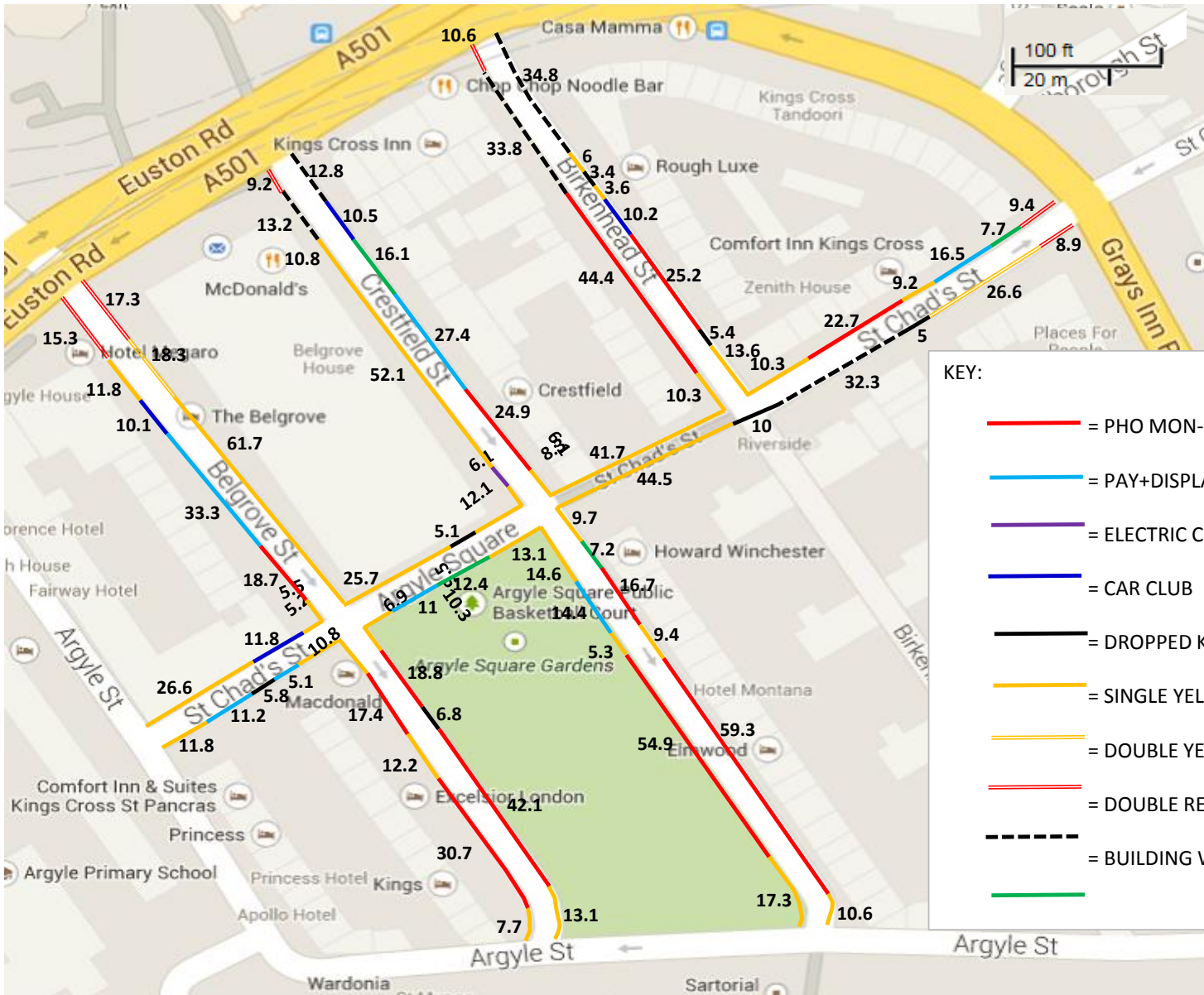
Route finder Night buses including 24-hour services

Bus route	Towards	Bus stops
N10 	Hammersmith	A B H J R
214 	Highgate Village	T X
	Moorgate	E K S
390 	Archway	C G M
	Notting Hill Gate	A B H J R
N63	Crystal Palace	D L S
N73	Victoria	A B R X
	Walthamstow	C E K
N91	Cockfosters	C G J M
	Trafalgar Square	A B H R
N205	Leyton	C E K
	Paddington	A B R X





APPENDIX F



KEY:

- = PHO MON-FRI 0830-1830 SAT 0830-1330
- = PAY+DISPLAY MON-FRI 0830-1830 SAT 0830-1330 MAX 2 HOURS
- = ELECTRIC CHARGING POINT ONLY MAX 3 HOURS
- = CAR CLUB
- - - = DROPPED KERB
- = SINGLE YELLOW LINE
- = DOUBLE YELLOW LINE
- = DOUBLE RED LINE
- - - = BUILDING WORKS
-



APPENDIX G

K&M TRAFFIC SURVEYS

DATE : 25th & 26th NOVEMBER 2014

DAY : TUESDAY & WEDNESDAY

LOCATION : KINGS CROSS, NORTH LONDON

TUESDAY 25th NOVEMBER 2014

TIME : 0255

WEDNESDAY 26th NOVEMBER 2014

TIME : 0310

ROAD NAME	ZONE	RESTRICTION	METRES	CAPACITY (based on 5m per space)	PARKED	OBSERVED SPACE	THEORETICAL SPACE - 5m	THEORETICAL SPACE - 5.5m	
BIRKENHEAD ST	1	BUILDING WORKS	34.8						
		SINGLE YELLOW LINES	23.2		2	0	0	0	
		DROPPED KERBS	8.4						
	2	CAR CLUB	10.2	2	1	1			
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	25.2	5	3	1	2	1	
		BUILDING WORKS	33.8						
ST CHAD'S ST	3	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	44.4	8	6	2	2	2	
		DOUBLE RED LINES	10.6						
		SINGLE YELLOW LINES	10.3						
	4	SINGLE YELLOW LINES	19.5		1	0	0	0	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	22.7	4	3	1	1	1	
CRESTFIELD ST	5	PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	16.5	3	0	3	3	3	
		MOTORCYCLE PARKING	7.7						
		DOUBLE RED LINES	9.4						
	6	DROPPED KERBS	15						
		BUILDING WORKS	32.3						
		YELLOW LINES DOUBLE	26.6						
	7	DOUBLE RED LINES	8.9						
		BUILDING WORKS	12.8						
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	27.4	5	3	2	2	1	
		CAR CLUB	10.5	2	2	0			
BELGROVE ST	8	MOTORCYCLE PARKING	16.1						
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	24.9	4	4	0	0	0	
		SINGLE YELLOW LINES	8.3						
	9	DOUBLE RED LINES	9.2						
		BUILDING WORKS	13.2						
	10	SINGLE YELLOW LINES	69		7	5	5	3	
		ELECTRIC CHARGING POINT MAX 3 HRS	6.1	1	0	1			
		SINGLE YELLOW LINES	29.7		2	0	-1	-1	
ARGYLE SQUARE	11	MOTORCYCLE PARKING	7.2						
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	76	14	9	4	5	4	
	12	SINGLE YELLOW LINES	37.2		0	3	3	2	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	54.9	10	9	1	1	0	
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	14.4	2	2	0	0	0	
	ST CHAD'S ST	13	DOUBLE RED LINES	17.3					
			YELLOW LINES DOUBLE	18.3					
14		SINGLE YELLOW LINES	61.7		8	2	2	1	
		DOUBLE RED LINES	15.3						
		SINGLE YELLOW LINES	17.3		2	0	0	0	
ST CHAD'S ST	15	CAR CLUB	10.1	2	1	1	1		
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	33.3	6	5	0	1	1	
	16	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	18.7	3	2	1	1	1	
		SINGLE YELLOW LINES	22.6						
ST CHAD'S ST	16	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	60.9	11	1	9	10	9	
		DROPPED KERBS	6.8						
	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	48.1	9	6	3	3	2		
ST CHAD'S ST	16	SINGLE YELLOW LINES	30.2		2	0	0	0	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	48.1	9	6	3	3	2	
	17	SINGLE YELLOW LINES	37.8		2	1	1	1	
		DROPPED KERBS	5.3						
ST CHAD'S ST	17	SINGLE YELLOW LINES	20		1	0	0	0	
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	11	2	2	0	0	0	
	MOTORCYCLE PARKING	12.4							
ST CHAD'S ST	17	SINGLE YELLOW LINES	31.8		2	1	1	1	
		CAR CLUB	11.8	2	1	1			
	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	16.3	3	2	1	1	0		
DROPPED KERBS	5.8								

ROAD NAME	ZONE	RESTRICTION	METRES	CAPACITY (based on 5m per space)	PARKED	OBSERVED SPACE	THEORETICAL SPACE - 5m	THEORETICAL SPACE - 5.5m	
BIRKENHEAD ST	1	BUILDING WORKS	34.8						
		SINGLE YELLOW LINES	23.2		1	1	1	1	
		DROPPED KERBS	8.4						
	2	CAR CLUB	10.2	2	2	0			
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	25.2	5	2	3	3	2	
		BUILDING WORKS	33.8						
ST CHAD'S ST	3	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	44.4	8	7	1	1	1	
		DOUBLE RED LINES	10.6						
		SINGLE YELLOW LINES	10.3		1	0	-1	-1	
	4	SINGLE YELLOW LINES	19.5		0	1	1	1	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	22.7	4	2	2	2	2	
CRESTFIELD ST	5	PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	16.5	3	0	3	3	3	
		MOTORCYCLE PARKING	7.7						
		DOUBLE RED LINES	9.4						
	6	DROPPED KERBS	15						
		BUILDING WORKS	32.3						
		YELLOW LINES DOUBLE	26.6						
	7	DOUBLE RED LINES	8.9						
		BUILDING WORKS	12.8						
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	27.4	5	3	2	2	1	
		CAR CLUB	10.5	2	2	0			
BELGROVE ST	8	MOTORCYCLE PARKING	16.1						
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	24.9	4	3	1	1	1	
		SINGLE YELLOW LINES	8.3						
	9	DOUBLE RED LINES	9.2						
		BUILDING WORKS	13.2						
	10	SINGLE YELLOW LINES	69		7	5	5	3	
		ELECTRIC CHARGING POINT MAX 3 HRS	6.1	1	0	1			
		SINGLE YELLOW LINES	29.7		1	0	0	0	
ARGYLE SQUARE	11	MOTORCYCLE PARKING	7.2						
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	76	14	10	4	4	3	
	12	SINGLE YELLOW LINES	37.2		1	2	2	1	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	54.9	10	5	4	5	4	
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	14.4	2	2	0	0	0	
	ST CHAD'S ST	13	DOUBLE RED LINES	17.3					
			YELLOW LINES DOUBLE	18.3					
14		SINGLE YELLOW LINES	61.7		7	3	3	2	
		DOUBLE RED LINES	15.3						
		SINGLE YELLOW LINES	17.3		1	1	1	1	
ST CHAD'S ST	15	CAR CLUB	10.1	2	1	1	1		
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	33.3	6	6	0	0	0	
	16	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	18.7	3	3	0	0	0	
		SINGLE YELLOW LINES	22.6						
ST CHAD'S ST	16	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	60.9	11	3	7	8	7	
		DROPPED KERBS	6.8						
	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	48.1	9	6	2	2	2		
ST CHAD'S ST	17	SINGLE YELLOW LINES	30.2		0	2	2	2	
		PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330	48.1	9	6	2	3	2	
	17	SINGLE YELLOW LINES	37.8		5	0	-2	-2	
DROPPED KERBS		5.3							
ST CHAD'S ST	17	SINGLE YELLOW LINES	20		0	1	1	1	
		PAY&DISPLAY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	11	2	2	0	0	0	
	MOTORCYCLE PARKING	12.4							
ST CHAD'S ST	17	SINGLE YELLOW LINES	31.8		1	2	2	2	
		CAR CLUB	11.8	2	2	0			
	PERMIT HOLDER ONLY MON TO FRI 0830-1830, SAT 0830-1330 MAX 2 HOURS	16.3	3	2	1	1	0		
DROPPED KERBS	5.8								

	PARKED	SPARE		
PERMIT SPACES ONLY:	43	22 66%	25 63%	20 68.3%
SYL & P&D SPACES:	45	18 71%	16 74%	10 82%
PERMIT, SYL & P&D:	88	40 69%	41 68%	30 74.6%

	PARKED	SPARE		
41	24 63%	27 60%	22 65.1%	
41	24 63%	20 67%	14 75%	
82	48 63%	47 64%	36 69.5%	



APPENDIX H

Technical Note

Project Title: TRAVL
MVA Project Number: C34712
Subject: Research Note on Residential Trip Rates
Note Number: 01 version 2
Author(s): Tshepo Kgare
Reviewer(s): Mike Slinn/ Jane Hills
Date: 11 October 2007

1 Introduction

- 1.1 This note is a follow up of MVA's Technical Note 01 of 13 September 2005, titled Validation of the 21st Century London Living Trip Rates. The 21st CLL report provided trip generation for mixed-use apartment developments in London by tenure (i.e. Affordable and Private).
- 1.2 Both Technical Note and 21st CLL report acknowledged that there is a need for more and better survey data in order to obtain much more comprehensive analysis of trip generation. At the time, only two sites in the TRAVL database contained the necessary information needed to carry out the validation.
- 1.3 It was on this basis that MVA reported their intention to subdivide residential land use categories into private, affordable and 1, 2 and 3+ bedrooms. Although the existing data is limited, this note aims to provide trip information for residential land use by tenure and number of bedrooms based on the sites currently available in the TRAVL database.

Assessment

- 1.4 In addition to continuous multi-modal count from 7am - 10pm, the trip rates have been derived using additional data obtained from the household and visitor diaries completed by the occupants. The diaries and household information forms are usually distributed by post in advance and collected and checked by surveyors on the day of the survey in some instances pre paid envelopes were provided in cases where occupants were not available.
- 1.5 Information recorded relates to tenure type (private, rented), no of bedrooms, occupants and visitor trips, ethnicity, disabilities etc.
- 1.6 Based on this additional information, it has been possible to derive trip rates by tenure type (i.e. Private and Affordable) with units being subdivided by size (i.e. no of bedrooms).
- 1.7 For the purpose of this assessment tenure has been categorised and described as follows:
 - Affordable - This includes social housing and key worker schemes developments, both of which are likely to be owned by either Local Authorities or Housing Associations or jointly.
 - Private - These are classified as wholly private developments and does not include key worker housing.

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1.8 Developments used in this assessment varied in size from 0 bedrooms (i.e. Studio Flat) up to 5 bedrooms on some of the larger sites. These have therefore been grouped and classified as follows:

- ❑ 1 Bedroom unit (including studio flats)
- ❑ 2 Bedrooms unit
- ❑ 3 bedrooms and more - +3 Bedrooms unit

2 Assessment Sites

2.1 At the time of the research there were 31 residential sites listed on TRAVL. However, all sites surveyed before 2005 do not contain the information relating to the size of units and the breakdown between private and affordable.

2.2 Of the 31 sites in TRAVL, 10 sites specified the breakdown of units by size and tenure. Sites that have been used have been group according to tenure type as follows:

- ❑ *Affordable*
 - Albion Wharf
 - St Georges Wharf
 - Kew Riverside
- ❑ *Private*
 - Putney Wharf
 - St Georges Wharf
 - Coopers Court
 - Parliament View
 - Bed Zed
 - Clarence Close
 - Grand Union
 - Kew Riverside
- ❑ *Mixed (Private and Affordable)*
 - Tysoe Avenue

2.3 The sites are located within central, inner and outer London area. Area boundaries are as described by the Greater London Authority (GLA).

2.4 Sites also have varying Public Transport Accessibility Levels (PTAL) ranging from 1 - 6, 1 classified as least accessible by public transport and 6 as the highest level of accessibility.

3 Analysis

3.1 As with most self-completion surveys, some developments received very low response rates and clearly not representative. **Table 1.1** below shows the response rates for all the sites used in the analysis. It should be noted that the figures shown relate to the no of households that have completed the diaries or interview form.

Table 1.1: Household Survey responses

Developments	Total households	Affordable	Private	Mixed
Albion Wharf	45	10		
St Georges Wharf	291	21	12	
Kew Riverside	450	12	43	
Putney Wharf	209		26	
Coopers Court	77		15	
Parliament View	190		30	
Bed- Zed	101		31	
Clarence Close	104		30	
Grand Union	253		44	
Tysoe Avenue	102			23

3.2 The breakdown of trip rates by unit size has been derived mainly using the interview data with count data mainly used to expand the interviews. In instances where the response rates are significantly lower than normal, the results will clearly show some discrepancies due to the high expansion factors obtained.

3.3 Trip rates were adjusted using the following calculation.

i). Total Number of 1 bed households/No of 1 bed household responses = Factor₁

ii). Factor₁ * Sum of 1 bed trips from interviews = Total Adjusted 1 bed trips.

(Same procedure repeated for 2 and 3 bedrooms)

iii). Factor₂ = Total Vehicle counts/ Sum of adjusted 1, 2 and 3 bed trips from interviews

iv). Trip rate = Total Adjusted 1 bed trips* Factor 2/number of 1 bed units.

(Same procedure repeated for 2 and 3 bedrooms).

4 Analysis results

4.1 **Tables 1.2 and 1.3** show the "All-mode" and "Car driver" trip rates respectively. The tables show Daily, AM (0800 – 0900) and PM (1700 – 1800) peak hour person trips per dwelling by number of bedrooms. Also shown in the table is London area locations, PTAL and car ownership information.

4.2 To take account of the low response rate on some of the developments, we have weighted and consolidated the analysis as shown in **Table 1.4** (For All modes) and **Table 1.5** (For Car Driver) by number of responses but ignored developments with low responses (less than 9).

Table 1.4: All Mode Analysis

Tenure	No of Beds	PTAL	Daily	AM Peak	PM Peak	No in Sample
Affordable	1	6	1.68	0.53	0.21	22
		2	-	-	-	
	2	6	2.64	0.27	0.50	9
		2	-	-	-	
	3+	6	-	-	-	
		2	-	-	-	
Affordable All	6	6	1.96	0.45	0.29	31
	2	2	4.90	0.78	0.52	12
Private	1	4 - 6	2.20	0.58	0.30	22
		2 - 3	2.80	0.37	0.25	43
	2	4 - 6	2.93	0.53	0.39	47
		2 - 3	2.78	0.44	0.31	58
	3+	4 - 6	2.91	0.57	0.29	14
		2 - 3	4.18	0.82	0.38	47
Private All	4 - 6	4 - 6	2.73	0.55	0.35	83
	2 - 3	2 - 3	3.13	0.54	0.31	148

Table 1.5: Car Driver Analysis

Tenure	No of Beds	PTAL	Daily	AM Peak	PM Peak	No in Sample
Affordable	1	6	0.01	0.00	0.00	22
		2	-	-	-	
	2	6	0.00	0.00	0.00	9
		2	-	-	-	
	3+	6	-	-	-	
		2	-	-	-	
Affordable All	6	6	0.01	0.00	0.00	31
	2	2	2.33	0.39	0.08	12
Private	1	4 - 6	0.31	0.11	0.00	22
		2 - 3	0.92	0.12	0.08	43
	2	4 - 6	0.93	0.29	0.15	47
		2 - 3	1.14	0.24	0.10	58
	3+	4 - 6	0.89	0.12	0.08	14
		2 - 3	1.56	0.35	0.15	47
Private All		4 - 6	0.76	0.21	0.10	83
		2 - 3	1.21	0.25	0.11	148

5 Conclusion

5.1 There is a considerable variation between sites and in particular, the Kew Riverside affordable housing development has a particularly high all-mode and car driver trip rate. Nevertheless some clear patterns are emerging from these relatively small samples. These are:

- The number of daily trip per dwelling both all-mode and car-driver increases marginally as the number of bedrooms increases.
- The number of peak hour trips per dwelling both all-mode and car-driver is relatively constant regardless of the number of bedrooms and whether the dwelling is affordable or private.
- There is little difference between affordable and private dwellings for daily and peak hour all-mode trips.
- The daily trip rates for private dwellings are marginally higher than for affordable dwellings but peak hour all-mode trip rates are similar.
- The numbers of car driver trips for high PTAL dwellings is significantly greater for private compared with affordable dwellings.

5.2 The analysis provides guideline trip rates, more surveys are needed to improve the accuracy. The guideline trip rates are shown in bold.

- 5.3 Further surveys of Affordable housing are needed to inform the accuracy of trip rate predictions.
- 5.4 Historically, social housing as it is called is known to generate high trip movements during the day outside peak periods, possibly due to low employment rates. However, a key worker housing development is less likely to generate trip movements during the day. Outside peak hours, It may be that key worker development sites have similar travel patterns to those of private residential developments. Considerations should be given to splitting of Affordable category into Social Housing and Key Worker Housing.