planning
transport
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Transport Statement for Bugler Homes Ltd
Hayes End Road, Hayes, Middlesex

September 2020 PL/HB/14529

dha

Contents

1 INTRODUCTION 2

2 EXISTING TRANSPORT CONDITIONS 3

2.1 The Existing Site 3
2.2 Local Highway Network 3
2.3 Walking and Cycling Infrastructure 4
2.4 Public Transport Infrastructure 5
2.5 Accessibility 6
2.6 Highway Safety 7

3 PROPOSED DEVELOPMENT 9

3.1 Overview 9
3.2 Access 9
3.3 Parking 9
3.4 Site Servicing 9
3.5 Construction Traffic 10

4 TRANSPORT PLANNING POLICY 11

4.1 National Planning Policy Framework (NPPF) 11
4.2 Planning Practice Guidance (PPG) 12
4.3 The London Plan (2016) 12
4.4 The Draft London Plan 13
4.5 The London Borough of Hillingdon Local Plan (2020) 13

5 TRIP GENERATION 16

5.1 Overview 16
5.2 Existing Use Vehicle Trip Generation 16
5.3 Proposed Development Vehicle Trip Generation 16

6 SUMMARY AND CONCLUSION 19

Appendices

A Bus Timetables
B PTAL Assessment
C PIA Data
D Proposed Site Layout
E Swept Path Analysis
F TRICS Reports

1 Introduction

1.1.1 DHA has been commissioned by Bugler Homes Ltd to provide transport planning advice in relation to the proposed residential-led redevelopment at Land off Hayes End Road, Hayes, Middlesex.

1.1.2 This Transport Statement (TS) has been produced in accordance with the Planning Practice Guidance (March 2014) and with Transport for London (TfL)'s Healthy Streets guidance (2019). Following this introduction, the TS is structured as follows:-

- Section 2 summarises the existing transport conditions local to the site;
- Section 3 sets out the development proposals;
- Section 4 provides assessment of transport planning policy;
- Section 5 looks at the forecast trip generation and transport impacts of the proposals; and
- Section 6 provides a summary and conclusion.

2 Existing Transport Conditions

2.1 The Existing Site

2.1.1 The site is located in a residential and commercial area, to the north-west of Hayes, within the London Borough of Hillingdon. The site is shown in a local context in Figure 2-1 below.

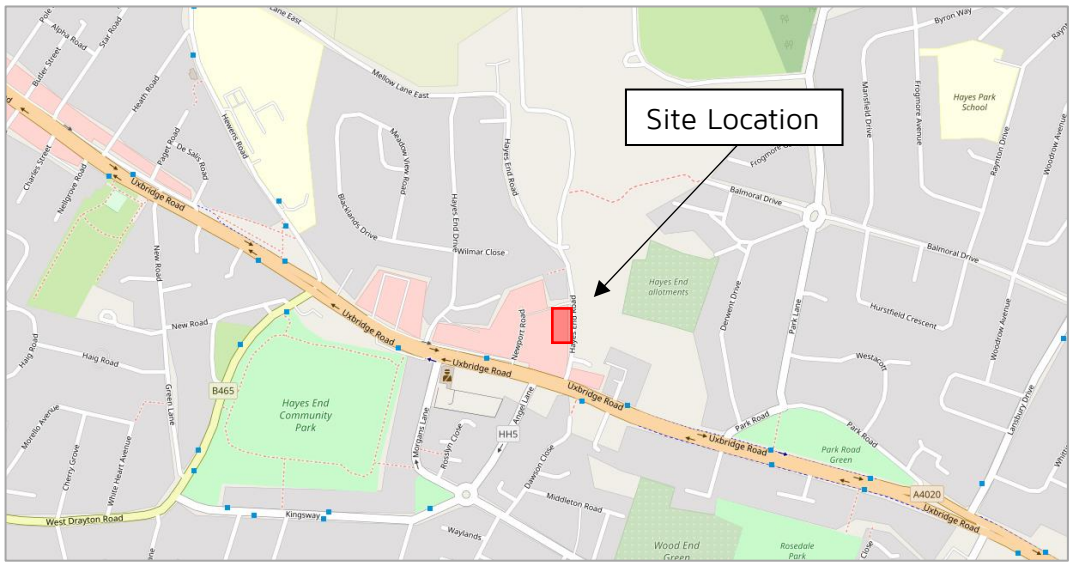


Figure 2-1: Site Location (courtesy of OpenStreetMap)

2.1.2 The site currently comprises two commercial units (958sqm), which are occupied by a tool hire depot and a car servicing business.

2.1.3 The site is bound by further commercial units to the south and west. Residential apartments are located to the north and east.

2.2 Local Highway Network

2.2.1 Hayes End Road is a two-way access road that follows a north-south alignment. The road has an approximate carriageway width of 6.5 metres and is subject to a 30mph speed restriction. On-street parking is restricted along the western side of the carriageway; however designated parking bays are located on the eastern side, along the length of the site frontage.

2.2.2 To the south, Hayes End Road connects to the A4020 Uxbridge Road at a signalised junction. Uxbridge Road is a dual carriageway that takes a general east to west alignment and provides connectivity to the wider highway network. To the east, it provides access to the A312 The Parkway, where connectivity to the A40 can be achieved to the north, linking to Central London to the east and the M40 towards Oxford and Birmingham to the north west. Access to the M4 can also be achieved to the south on the A312, in addition to local road connections to Heathrow Airport.

2.2.3 It is therefore evident that the site enjoys ready access to a range of local and regional destinations via the primary route network.

2.3 Walking and Cycling Infrastructure

2.3.1 Footways are provided along both sides of Hayes End Road, measuring approximately 2.0 metres in width. To the south of the site, at the A4020 Uxbridge Road / Hayes End Road junction, a signalised pedestrian crossing with tactile paving is provided. Footways are also provided on Uxbridge Road, with a cycle lane running parallel to the northern footway.

2.3.2 A number of Public Rights of Way (PRoW) are located within the vicinity of the site, as shown in Figure 2-2 below. Footpath H5 is located approximately 80 metres to the north of the site, providing an alternative pedestrian route to Uxbridge Road.

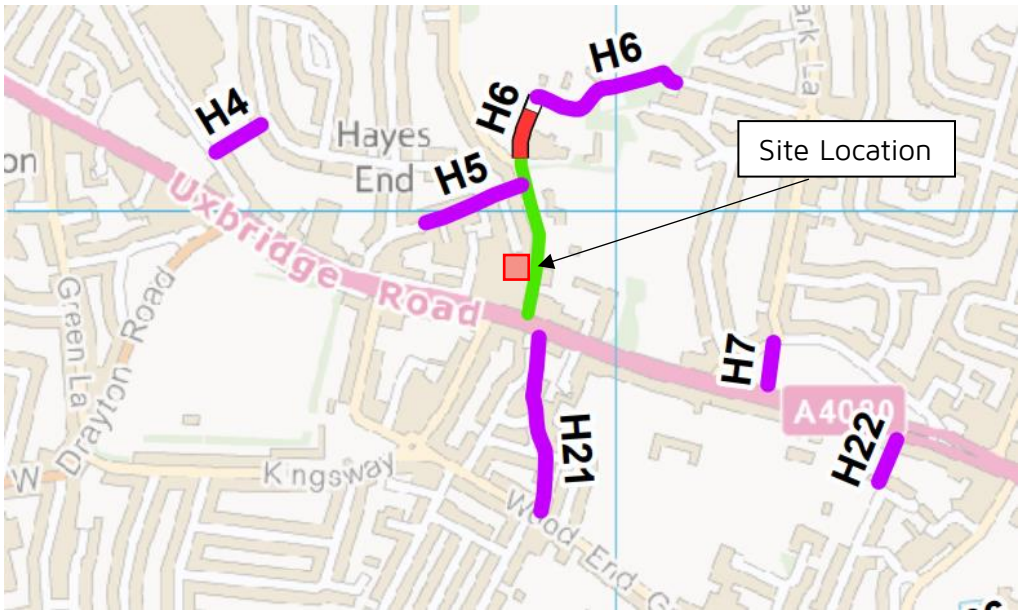


Figure 2-2: Local PRoW Network (courtesy of London Borough of Hillingdon)

2.3.3 The site is also well located in relation to local and national cycle routes. Local Cycle Route 39 is accessible from Uxbridge Road, providing connectivity to Uxbridge to the west and Shepherds Bush to the east. This route allows for access to additional local cycle routes along Uxbridge Road.

2.3.4 Both National Cycle Routes 6 and 61 can be accessed approximately 4.8km to the west of the site, providing wider connectivity to Hatfield to the north and Maidenhead to the west, as shown in Figure 3-3 overleaf.

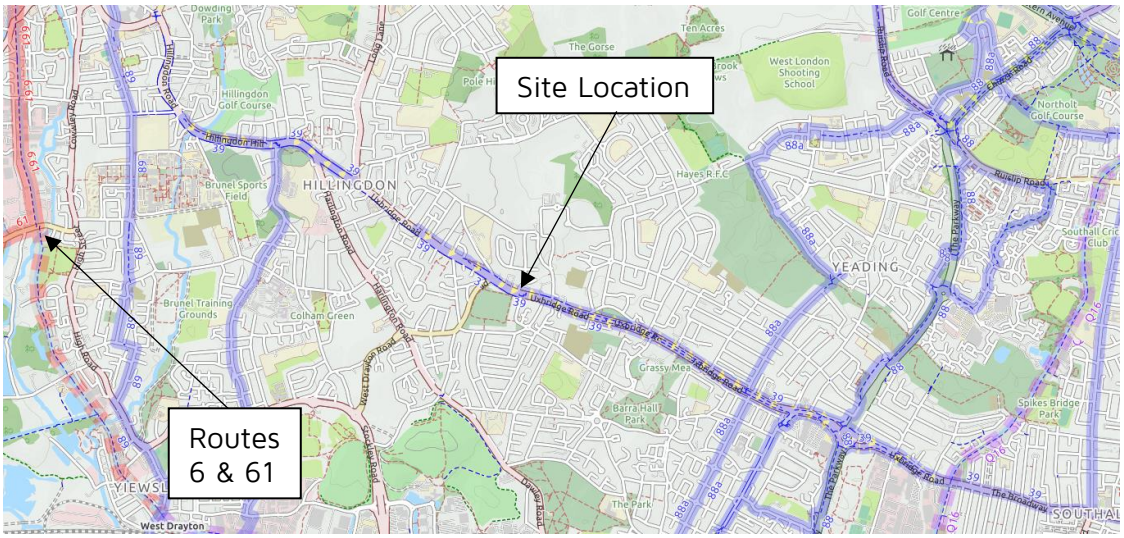


Figure 2-3: Local Cycle Network (courtesy of OpenCycleMap)

2.4 Public Transport Infrastructure

2.4.1 The closest bus stop to the site is located approximately 180 metres to the south east on Uxbridge Road, taking approximately two minutes on foot. This stop is served by a number of routes, which have been summarised in Table 2-1 below. The full timetables are included at **Appendix A**.

Service No.	Route	Weekday Frequency
427	Uxbridge – Hayes End – Southall – Hanwell – West Ealing – Ealing - Acton	6 per hour
607	Uxbridge – Hayes End – Southall – Ealing – Acton – White City	7 per hour
697	Hayes End – Yeading – Long Lane – Hillingdon - Ickenham	2 morning services
698	West Drayton – Hayes – Hayes End – Long Lane – Hillingdon - Ickenham	4 morning services
H98	Hounslow – Cranford – Harlington – Hayes – Hayes End	7 per hour
N207	Uxbridge – Hayes – Ealing – Shepherds Bush - Holborn	2 per hour (night service)

Table 2-1: Local Bus Routes and Frequencies

2.4.2 Hayes and Harlington Railway Station is located approximately 3.4km to the south east of the site, accessible within a 12-minute cycle time. The station is served by both Transport for London (TfL) Rail and Great Western Railway, providing regular access to Central London, as well as regional destinations to the west. Weekday services to Reading and Heathrow Terminal 4 run at a frequency of approximately three per hour and those to London Paddington operate eight times per hour. An hourly service to Didcot is also available.

2.4.3 In addition to Hayes & Harlington, four further stations can be accessed in less than 20 minutes by bicycle. West Drayton and Southall Railway Stations are located on the Great Western Railway line, providing access to London Paddington. Both Uxbridge and Hillingdon underground stations are served by the Metropolitan and Piccadilly lines.

2.4.4 A Public Transport Accessiblity Level (PTAL) assessment for the site has been completed via the Transport for London (TfL) website. The PTAL assessment considers the walk distance from the point of interest to each public transport node (within 640 metres for bus stops and 960 metres for railway stations) and the frequency of services available between 08:15 and 09:15. The output index ranges between 0 and 40 plus, which relate to PTAL scores between 1a and 6b.

2.4.5 The results of the PTAL assessment for the site are included at **Appendix B**. Figure 2-4 below summarises the assessment and indicates that the site has a PTAL rating of 2; however it is noted that it borders an area with a PTAL rating of 3.



Figure 2-4: PTAL Assessment

2.4.6 It is noted that the PTAL calculations only take into account public transport nodes that are accessible by foot. They do not account for the fact that train services can be accessed from the site by bus or cycle within a short journey time.

2.5 Accessibility

2.5.1 The urban location of the site ensures that it is situated within a reasonable walking distance of a number of local services and facilities. Table 2-2 overleaf summarises these and the associated walking distances, measured along accessible walking routes. It is noted that the list is not exhaustive, but provides an overview of the level of accessibility in the surrounding area.

Facility	Walk Distance (m)	Walk Time (minutes)
Bus Stop	180m	2 minutes
Public House	180m	2 minutes
Hayes End Methodist Church	180m	2 minutes
Post Office	200m	3 minutes
Boots Store	210m	3 minutes
Takeaway	240m	3 minutes
Hairdressers	270m	3 minutes
Hayes Police Station	270m	4 minutes
Iceland Store	290m	4 minutes
Hayes End Library	350m	5 minutes
Hayes End Community Centre	750m	9 minutes
The Parkview Surgery	800m	10 minutes
Hewens College	850m	11 minutes

Table 2-2: Site Accessibility

2.5.2 The walk times provided are based on a walk speed of 80m per minute, a figure which is widely used to estimate walk times. Table 3.2 of the Chartered Institution of Highways and Transportation guidance 'Providing for Journeys on Foot' suggests the acceptable walking distances to facilities and is outlined in Table 2-3 below.

	Town Centres (m)	Commuting/School/ Site-Seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

Table 2-3: 'Providing for Journeys on Foot' suggested acceptable walking distances

2.5.3 It is noted that a large number of local services are located within acceptable walking distances.

2.6 Highway Safety

2.6.1 Personal Injury Accident (PIA) data has been sourced from TfL for the area surrounding the proposal site for the latest five year period up to 31st August 2019. The accident plot and associated report are included at **Appendix C**.

2.6.2 In total, 11 incidents were recorded, of which 10 were classed as 'slight' in severity and one was classed as 'serious'. A summary of these incidents is set out in Table 2-4 overleaf.

Road Link	Accident Type			Light Conditions		Weather Conditions		Road Surface		
	Slight	Ser.	Fatal	Light	Dark	Fine	Other	Dry	Wet	Ice
Uxbridge Road / Hayes End Road Junction	2	0	0	0	2	2	0	1	1	0
Uxbridge Road / Angel Lane Junction	5	1	0	3	3	4	2	3	3	0
Uxbridge Road	3	0	0	3	0	2	1	2	1	0
Total	**10**	**1**	**0**	**6**	**5**	**8**	**3**	**6**	**5**	**0**

Table 2-4: PIA Data Summary

2.6.3 In total, three incidents occurred on Uxbridge Road. The first incident involved a car and a goods vehicle and resulted from the driver of the car failing to look properly. The second incident occurred when the driver of a goods vehicle failed to judge the speed of an oncoming cyclist and cut across their path, causing a collision. The third incident involved six vehicles and occurred when the driver of one of the vehicles failed to look properly, causing multiple collisions.

2.6.4 Two incidents were recorded at the A4020 Uxbridge Road / Hayes End Road junction. The first occurred when a motorcyclist was travelling at excess speed and collided with the nearside of a taxi. The second incident was classified as 'slight' in severity; however further details were not recorded.

2.6.5 Six incidents took place at the A4020 Uxbridge Road / Angel Lane junction, one of which was classified as 'serious' in severity. The serious incident occurred as a result of dazzling headlights and distractions within a vehicle, which caused a collision between two vehicles. Of the remaining five incidents, collisions occurred as a result of failing to look properly, sudden braking and the incorrect use of a pedestrian crossing facility. The details of one of the incidents were not recorded.

2.6.6 It is apparent that the primary cause of the recorded incidents was human error, rather than any fault with the highway layout or condition. As such, it is not considered that the proposed development would materially exacerbate any pre-existing highway safety concerns locally.

3 Proposed Development

3.1 Overview

3.1.1 The proposed development comprises the demolition of the existing buildings and the construction of a five-storey building with flexible commercial floorspace (Use Class E) at ground floor and residential accommodation (Use Class C3) above, together with associated residential amenity space, landscaping, car and cycle parking, refuse storage and access.

3.1.2 The proposed accommodation schedule is outlined in Table 3-1 below.

No. of bedrooms	Total Apartments
1	15
2	8
3	6
Total	**29**

Table 3-1: Proposed Accommodation Schedule (29 units)

3.1.3 The proposed site layout plan is included at **Appendix D**.

3.2 Access

3.2.1 The site will be accessed from Hayes End Road, utilising the existing vehicle crossover in the north-eastern corner.

3.2.2 Pedestrian access is proposed to the south-eastern corner, using the second existing crossover.

3.3 Parking

3.3.1 A total of 30 vehicle parking spaces will be provided to the rear of the development, including three disabled bays and two 'active' Electric Vehicle (EV) charging bays.

3.3.2 A cycle store is proposed within the rear of the building, comprising 51 spaces. Two Sheffield stands are proposed externally to provide a further four cycle spaces for visitors and users of the commercial unit. Three secure cycle sheds will also be provided on the site.

3.4 Site Servicing

3.4.1 Swept path analysis has been undertaken for an estate car to demonstrate that the proposed site access and parking can be accessed safely and efficiently. The associated drawing is included at **Appendix E**.

3.4.2 Commercial vehicles will serve the site from Hayes End Road as is presently the case.

3.5 Construction Traffic

3.5.1 It is expected that site offices and facilities will be located on the construction site. Wheel washing equipment will be provided as necessary for construction phases. Access to the construction site will be secured and operated in accordance with current health and safety legislation. Delivery and construction HGV traffic will be accommodated on the construction site, with no requirement for waiting on the public highway. Daily movement of goods vehicles in particular will be timed to avoid peak traffic times.

3.5.2 As is common practice, a condition will be offered requiring the applicant to agree to a Construction Environment Management Plan (CEMP), to satisfy the Local Planning and Highway Authorities that adequate measures are in place to ameliorate any temporary effects from construction activities and processes.

3.5.3 Third party suppliers and contractors visiting the site will be made aware of the construction access and routeing arrangements at the start of the project. Site management will ensure compliance with the construction access arrangements.

4 Transport Planning Policy

4.1 National Planning Policy Framework (NPPF)

4.1.1 The NPPF sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other developments can be produced. The NPPF is a material consideration in planning decisions.

4.1.2 At the heart of the NPPF is a presumption in favour of sustainable development. This is reflected in Section 9 of the document where it is noted that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering genuine choice of transport modes. The NPPF advises that in assessing sites, it should be ensured that:-

a) *"Appropriate opportunities to promote sustainable transport can be – or have been – taken up, given the type of development and its location;*

b) *Safe and suitable access to the site can be achieved for all users; and*

c) *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."*

4.1.3 Paragraph 109 states that: "*development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or if the residual cumulative impacts on the road network would be severe.*"

4.1.4 Paragraph 110 then goes on to note that applications for development should:-

a) *"Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*

b) *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*

c) *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*

d) *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*

e) *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations".*

4.1.5 All developments that will generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or Transport Assessment so that the likely impacts of the proposal can be assessed.

4.2 Planning Practice Guidance (PPG)

4.2.1 The PPG was established in March 2012 as a supporting resource in conjunction with the NPPF, which is also a material consideration in determining planning applications. With respect to transport, the NPPG includes a section titled 'Travel Plans, Transport Assessments and Statements in Decision-Taking'. This provides general guidance on the process of producing these documents, from which the following key points are expressed.

4.2.2 With regard to the purpose of a Transport Assessment or Statement it is noted that:-

> *"The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or "severe" impacts. Travel Plans can play an effective role in taking forward those mitigation measures which relate to on-going occupation and operation of the development."*

4.2.3 In terms of parking provision, the requirements are set out by the Local Authority (as described below); however, further to the NPPF, the following should be taken into consideration:-

> *"Maximum parking standards can lead to poor quality development and congested streets, local planning authorities should seek to ensure parking provision is appropriate to the needs of the development and not reduced below a level that could be considered reasonable."*

4.3 The London Plan (2016)

4.3.1 The London Plan, produced in 2016, is the strategic document that sets out an integrated, economic, environmental, transport and social framework for the future development of London over the next 20 to 25 years. Chapter 6 of the London Plan focuses on transport, with Policy 6.3 referring to the effects of development on transport capacity:-

> *"Development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, are fully assessed. Development should not adversely affect safety on the transport network."*

4.3.2 Policy 6.9 considers cycling, advising that developments should provide high quality cycle parking facilities in accordance with minimum standards, whilst also facilitating both the Cycle Super Highways scheme and central London Cycle Hire scheme, if applicable. For pedestrians, Policy 6.10 requests that development proposals should ensure a high quality pedestrian environment.

4.3.3 With respect to Policy 6.13: Parking, the London Plan states that the Mayor wishes to see a balance struck between promoting new development and preventing excessive car parking that can undermine cycling, walking and public transport use. The policy goes on to state that developments must:-

- *"Ensure that 1 in 5 spaces (both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles;*
- *Provide parking for disabled people in line with Table 6.2;*
- *Meet the minimum cycle parking standards set out in Table 6.3; and*
- *Provide for the needs of businesses for delivery and servicing."*

4.3.4 Table 6.2 of the London Plan lists car parking standards for a number of development types. With regard to residential proposals, the London Plan notes that all developments with good accessibility to public transport should aim for less than one space per unit and that forthcoming Supplementary Planning Guidance on housing will include details on residential parking with respect to PTAL levels. Cycle parking should be provided at a rate of 1 space per studio or 1 bed unit and 2 spaces per all other dwellings. The London Plan Revised Early Minor Alterations (October 2013) does not provide any material change to these cycle parking requirements.

4.4 The Draft London Plan

4.4.1 The draft London Plan was published for consultation in December 2017 and was subsequently submitted to the Secretary of State (SoS) in December 2019. The SoS response was published in March 2020 and is currently being considered by the Mayor of London.

4.4.2 Chapter 10 of the draft Plan focuses on transport policy. Policy T1 sets out the strategic approach to transport:-

A. "Development Plans and development proposals should support and facilitate:

1) The delivery of the Mayor's strategic target of 80 per cent of all trips in London to be made by foot, cycle or public transport by 2041;

B. All development should make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London's transport networks and supporting infrastructure are mitigated."

4.4.3 Policy T6.1 of the Plan lists the draft residential parking standards. For Outer London locations with a PTAL rating of 2, a maximum of one space per dwelling is required.

4.5 The London Borough of Hillingdon Local Plan (2020)

4.5.1 Policy DMT1 of the London Borough of Hillingdon Local Plan requires development proposals to meet their transport needs address their transport impacts in a

sustainable manner. In order for development to be acceptable, they are required to:-

- *"Be accessible by public transport, walking and cycling either from the catchment area that it is likely to draw its employees, customers or visitors from and/or the services and facilities necessary to support the development;*
- *Maximise safe, convenient and inclusive accessibility to, and from within developments for pedestrians, cyclists and public transport users;*
- *Provide equal access for all people, including inclusive access for disabled people;*
- *Adequately address delivery, servicing and drop-off requirements; and*
- *Have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network."*

4.5.2 Policy DMT2 states that development proposals must ensure that safe and efficient vehicular access to the highway network is provided to the Council's standards.

4.5.3 Pedestrian and cycle access is discussed in Policy DMT5. Proposals will be required to ensure that safe, direct and inclusive access for pedestrians and cyclists is provided on the site, connecting it to the wider network, including:-

i) *"The retention and, where appropriate, enhancement of any existing pedestrian and cycle routes;*

ii) *The provision of a high quality and safe public realm or interface with the public realm, which facilitates convenient and direct access to the site for pedestrian and cyclists;*

iii) *The provision of well signposted, attractive pedestrian and cycle routes separated from vehicular traffic where possible; and*

iv) *The provision of cycle parking and changing facilities in accordance with Appendix C, Table 1 or, in agreement with Council."*

4.5.4 Parking requirements are considered in Policy DMT6, which notes that off-street provision should be in accordance with the maximum standards set out in Appendix C of the Local Plan.

4.5.5 For residential developments, the parking standards permit the following **maximum** parking for private units:-

- 1 or 2 bedroom flats – **1.5 - 1 spaces per unit**; and
- 3 or 4 bedroom flats – **2 spaces per unit**.

4.5.6 For office uses, parking should be provided at a maximum of 1 space per 50–100 sqm of gross floorspace.

4.5.7 In addition, cycle parking is required at a maximum standard of 1 space per 1 or 2 bed flatted units and 2 spaces per 3 or 4 bedroom units.

4.5.8 Electric Vehicle parking should be provided at a minimum of 5% of car parking spaces, with an additional 5% passive provision.

Policy Compliance

4.5.9 With regard to national and local policy, the proposals are seen to comply. The site is located within a PTAL 2 area; however high-frequency bus services are accessible within a short walking distance of the site and there are multiple railway stations available within a 20 minute cycle time. It is also located within an acceptable walking distance of many local services and facilities.

4.5.10 With regard to car parking, a total of 30 spaces is proposed; 29 residential spaces and one commercial space, providing a 1:1 ratio of spaces per apartment. This adheres to the maximum standards set out within the London Borough of Hillingdon Local Plan. Given the good accessibility to public transport infrastructure and the emerging London Plan parking standards, the provision of one space per unit is considered acceptable.

4.5.11 All parking spaces are provided at 2.5m in width and 5.0m in length. Three parking spaces will be designated for mobility impaired users, with a 1.2m margin around them.

4.5.12 A 10% EV charging provision will also be provided on-site, in line the Local Plan requirements; with two 'active' EV spaces and one passive space.

4.5.13 A minimum of 33 cycle parking spaces are required to accord with the adopted London Plan standards. A total of 58 spaces, including visitor provision, is proposed.

4.5.14 Given the above, the proposed development is not considered to produce 'severe' residual transport impacts, in line with the NPPF.

5 Trip Generation

5.1 Overview

5.1.1 This section outlines the methodology employed to calculate the likely vehicle trip generation of the proposed development. As noted within Section 2, the site is currently utilised as two separate commercial units; a tool hire depot and a car servicing unit. Therefore, consideration has also been given to this use and its trip attraction potential to ascertain the net impact of the proposals.

5.2 Existing Use Vehicle Trip Generation

5.2.1 The two existing commercial uses on the site are classified as Sui Generis in planning terms. The car servicing business specialises in taxi servicing and the tool hire depot operates as a trade counter with an associated warehouse.

5.2.2 As a business that specialises in taxi servicing, it can be expected that this use experiences a high turnover of vehicles. The tool hire depot is also expected to generate significant vehicle movements. The nature of the use requires customers to return the hired plant at the end of the hire period; therefore doubling vehicle trips when compared to a standard retail DIY store.

5.2.3 Given the above, it is clearly evident that the existing uses on the site generate a greater level of vehicle trips than the proposed uses, and as such the proposed development will result in a net reduction in on vehicular traffic on the local highway network

5.3 Proposed Development Vehicle Trip Generation

5.3.1 To assess the vehicular trip impacts of the proposed development, the TRICS trip rate database has been utilised.

Residential Apartments

5.3.2 The TRICS selection '03-RESIDENTIAL, C-FLATS PRIVATELY OWNED' has been made. Survey sites in England, Scotland and Wales have been considered in Suburban locations to provide a robust consideration of peak traffic conditions. A summary of the resulting TRICS trip rates is provided in Table 5-1 below. The full TRICS data reports are included at **Appendix F**.

Period	Arrivals	Departures	Total
0800-0900	0.047	0.154	0.201
1700-1800	0.131	0.079	0.210
0700-1900	0.894	1.015	1.909

Table 5-1: TRICS Trip Rates – Flats Privately Owned (trips/dwelling)

5.3.3 These trip rates have subsequently been factored by the total number of flats proposed (29no.). A summary of the overall vehicle trip generation for the residential element of the proposal is outlined in Table 6-2 overleaf. Please note that any inaccuracies are the result of rounding in MS Excel.

Period	Arrivals	Departures	Total
0800-0900	1	4	6
1700-1800	4	2	6
0700-1900	26	29	55

Table 5-2: Trip Generation – Flats Privately Owned (29 units)

Commercial Unit

5.3.4 To provide the most robust assessment of the E-class commercial unit, the TRICS selection '02-EMPLOYMENT, A-OFFICE' has been made. Survey sites in England, Scotland and Wales have been considered in Suburban locations and weekday periods were assessed to provide a robust consideration of peak traffic conditions. The resulting trip rates are summarised in Table 5-3 below.

Period	Arrivals	Departures	Total
0800-0900	1.345	0.147	1.492
1700-1800	0.129	1.026	1.155
0700-1900	4.869	4.826	9.695

Table 5-3: TRICS Trip Rates – Office (trips/100sqm)

5.3.5 The above trip rates have subsequently been factored by the total floorspace of the proposed unit (145sqm) to provide the vehicle trip generation forecast in Table 5-4 below. Please note that any inaccuracies are the result of rounding in MS Excel.

Period	Arrivals	Departures	Total
0800-0900	2	0	2
1700-1800	0	1	2
0700-1900	7	7	14

Table 5-4: Trip Generation – Office (145sqm)

Total Development Trip Generation

5.3.6 Based on the above assessment, it is forecast that the proposed development has the capacity to generate the total vehicle trips outlined in Table 5-5 below.

Period	Arrivals	Departures	Total
0800-0900	3	4	8
1700-1800	4	3	8
0700-1900	33	36	69

Table 5-5: Total Development Trip Generation

5.3.7 It is noted that the proposed development has the capacity to generate approximately 69 vehicle trips across the 12-hour weekday period (0700-1900), of which eight would occur in each of the AM and PM peak hours. This equates to just under six vehicle movements per hour on average during the 12-hour period, which is not considered to represent a significant or 'severe' transport

impact with reference to NPPF Paragraph 109, particularly in view of the extant trip generation potential of the site.

6 Summary and Conclusion

6.1.1 This Transport Statement (TS) has been prepared on behalf of Bugler Homes Ltd in relation to the proposed residential-led redevelopment at Land off Hayes End Road, Hayes, Middlesex.

6.1.2 The proposed development comprises the demolition of the existing commercial units, which are occupied by a car servicing company and a tool hire depot, and the construction of a five-storey building with flexible commercial floorspace (Use Class E) at ground floor and residential accommodation (Use Class C3) at upper floor levels, with associated residential amenity space, landscaping, car and cycle parking, refuse storage and access.

6.1.3 A review of Personal Injury Accident data for the local highway network has concluded that there no apparent accident patterns that could be exacerbated by the proposed development.

6.1.4 Swept path analysis confirms that the internal site layout is sufficient to meet the needs of the vehicles requiring access to the site.

6.1.5 Following a review of national and local transport planning policy, the site is considered sustainable with regard to its proposed use and the proposed development is seen to comply with relevant policy and guidance.

6.1.6 With regard to parking provision, a total of 30 car parking spaces are proposed in line with the adopted London Plan standards. Cycle parking is also proposed in excess of local policy requirements.

6.1.7 It has been demonstrated that the proposal has the potential to attract approximately 69 vehicle movements across the 12-hour weekday period (07:00-19:00), including eight in both the AM and PM peak hours. This represents approximately one movement every 10 minutes on average, which is considered to represent a net decrease relative to the extant site use.

6.1.8 It is therefore concluded that the proposed development should not result in significant detrimental impacts in transport terms and therefore there should be no sound transport-based objection to this proposal.

APPENDIX
A



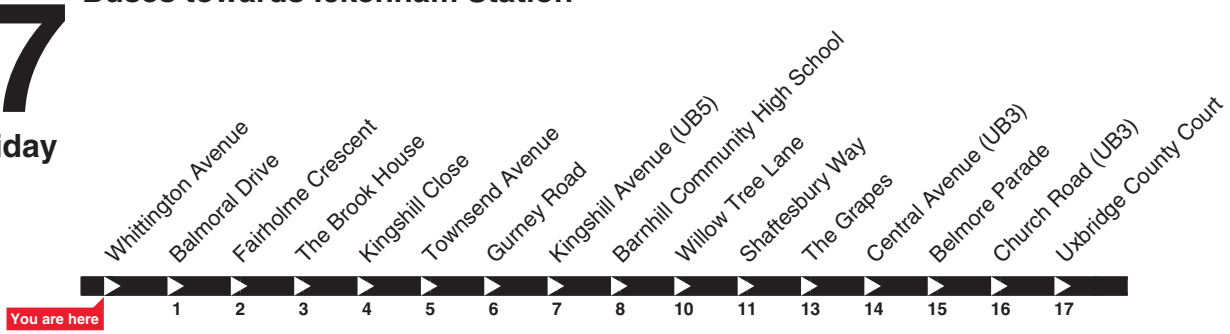
Bus Timetables

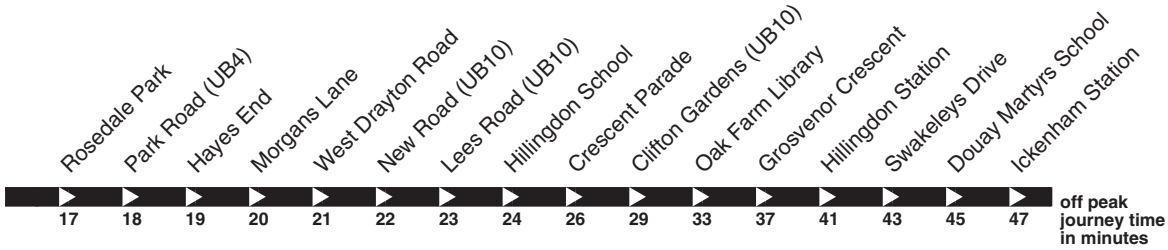
London Buses

697

Monday - Friday

Buses towards Ickenham Station





School Friday

First buses

07 33
07 38

School Monday

First buses

07 33
07 38

School Thursday

First buses

07 33
07 38

School Tuesday

First buses

07 33
07 38

School Wednesday

First buses

07 33
07 38

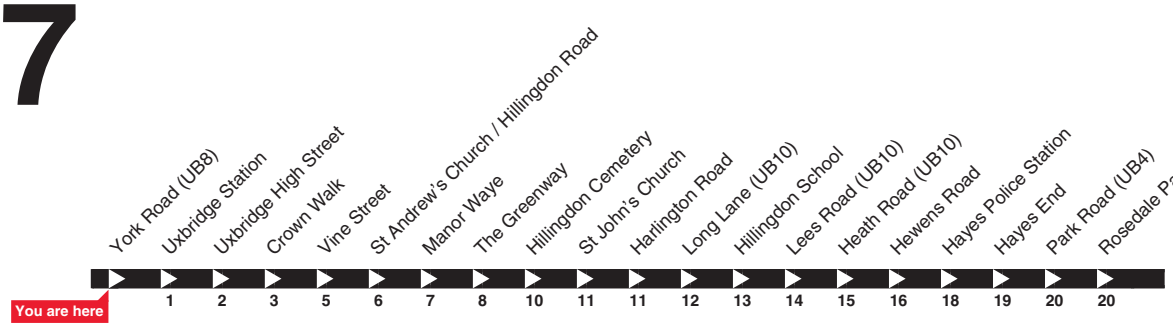
Operated by London United for London Buses

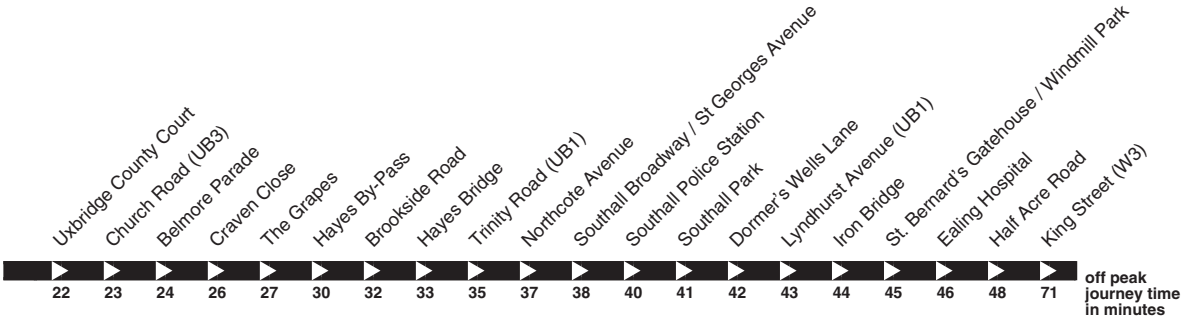
London Buses

427

Daily

Buses towards King Street (W3)





School Friday

First buses	5 to 6am	6am to 8pm	8 to 11pm	Last buses
04 35	05 05	*about every*	*about every*	23 02
04 50	05 20	***6-10***	***11-12***	23 14
	05 35	*minutes*	*minutes*	23 26
	05 45			23 38
	05 55			23 50

Mon-Th Schooldays

First buses	5 to 6am	6am to 8pm	8 to 11pm	Last buses
04 35	05 05	*about every*	*about every*	23 02
04 50	05 20	***6-10***	***11-12***	23 14
	05 35	*minutes*	*minutes*	23 26
	05 45			23 38
	05 55			23 50

Saturday

First buses	5 to 6am	6 to 7am	7 to 8am	8am to 6pm	6 to 11pm	Last buses
04 35	05 05	06 05	07 05	*about every*	*about every*	23 02
04 50	05 20	06 20	07 20	***7-10***	***8-12***	23 14
	05 35	06 35	07 35	*minutes*	*minutes*	23 26
	05 50	06 50	07 50			23 38
						23 50

Sunday

First buses	5 to 6am	6 to 7am	7 to 8am	8am to 11pm	Last buses
04 35	05 05	06 05	07 05	*about every*	23 02
04 50	05 20	06 20	07 20	***8-12***	23 14
	05 35	06 35	07 35	*minutes*	23 26
	05 50	06 50	07 50		23 38
					23 50

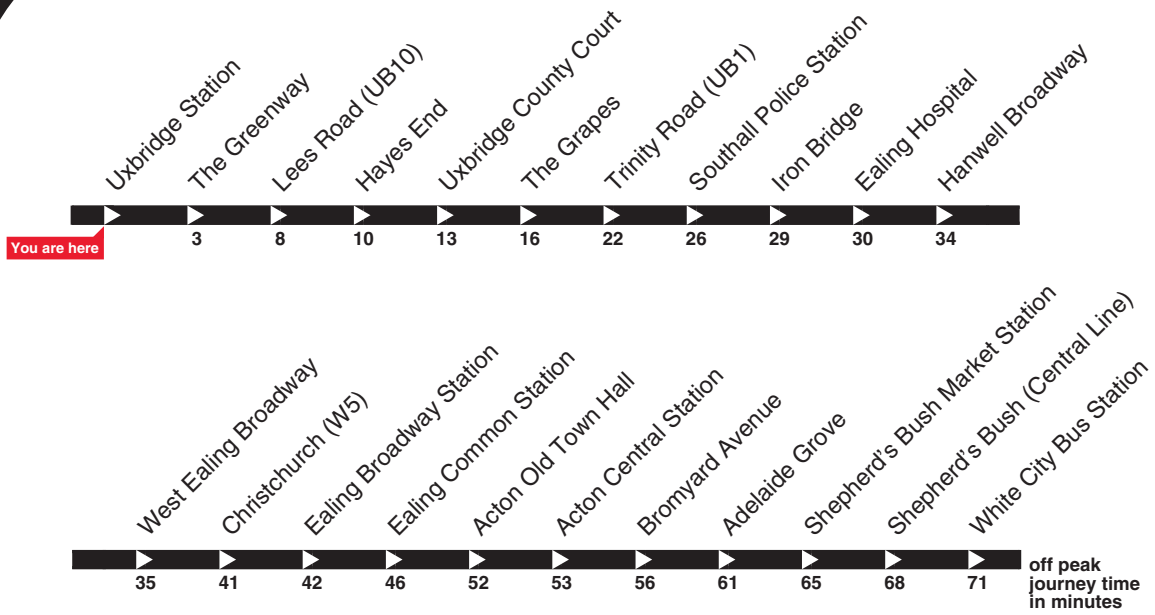
Operated by Abellio London for London Buses

London Buses

607

Daily

Buses towards White City Bus Station



Saturday

First buses	6 to 7am	7am to 7pm	7 to 8pm	8 to 9pm	Last bus
0530	0600	*about every*	1910	2013	2100
0545	0615	***9-11***	1925	2029	
	0630	*minutes*	1941	2045	
	0640		1958		
	0650				

Sunday

First bus	9 to 10am	10am to 6pm	6 to 7pm	7 to 8pm	8 to 9pm	Last bus
0855	0910	*about every*	1800	1912	2014	2100
	0925	***10-13***	1812	1927	2029	
	0935	*minutes*	1825	1943	2044	
	0947		1840	1959		
	0959		1856			

Monday - Friday

First buses	6 to 7am	7am to 7pm	7 to 8pm	8 to 9pm	Last bus
0530	0600	*about every*	1910	2013	2100
0545	0615	***9-11***	1925	2029	
	0630	*minutes*	1941	2045	
	0640		1958		
	0650				

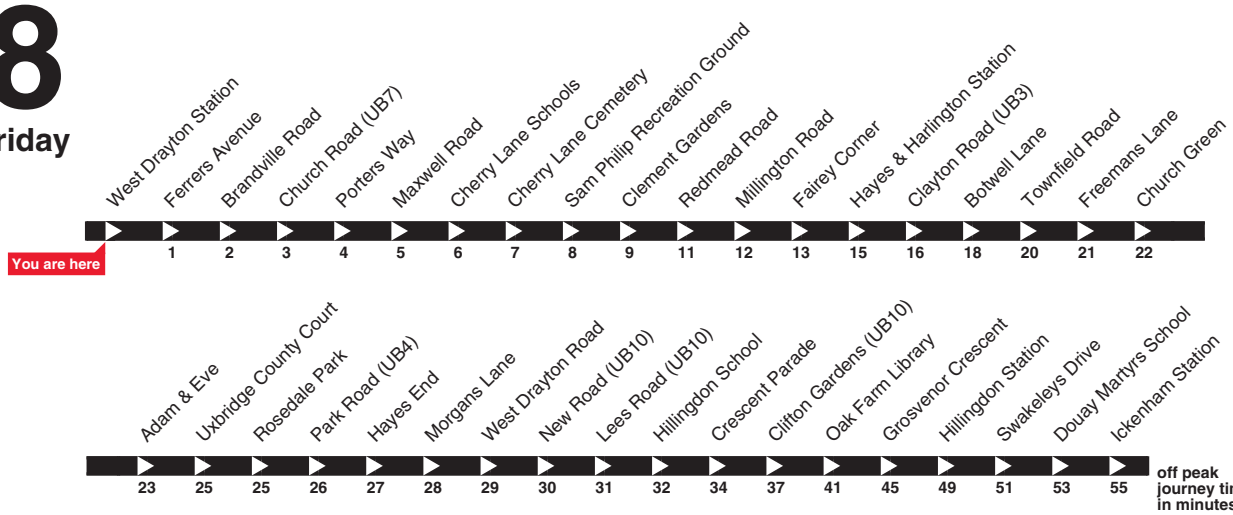
Operated by Metroline for London Buses

London Buses

698

Monday - Friday

Buses towards Ickenham Station



School Friday

First buses

07 22
07 27
07 32
07 37

School Monday

First buses

07 22
07 27
07 32
07 37

School Thursday

First buses

07 22
07 27
07 32
07 37

School Tuesday

First buses

07 22
07 27
07 32
07 37

School Wednesday

First buses

07 22
07 27
07 32
07 37

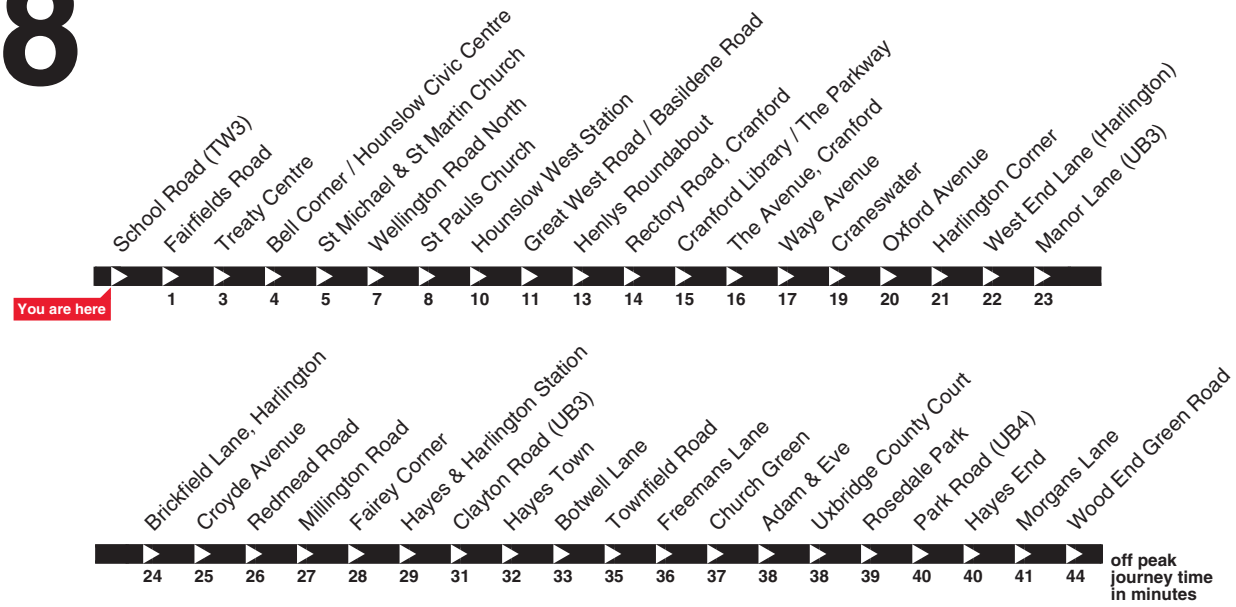
Operated by London United for London Buses

London Buses

H98

Daily

Buses towards Wood End Green Road



Saturday

First buses	6 to 7am	7 to 8am	8 to 9am	9am to 7pm	7 to 8pm	8 to 9pm	9 to 10pm	10 to 11pm	Last buses
05 05	06 05	07 00	08 00	*about every*	19 07	20 08	21 09	22 09	23 10
05 25	06 25	07 15	08 15	*9-11*	19 22	20 23	21 24	22 24	23 26
05 45	06 45	07 30	08 29	*minutes*	19 38	20 38	21 39	22 39	23 41
		07 45	08 39		19 53	20 53	21 54	22 55	23 57
			08 49						
			08 59						

Sunday

First buses	7 to 8am	8 to 9am	9 to 10am	10 to 11am	11am to Midday	Midday to 1pm	1 to 5pm	5 to 6pm	6 to 7pm	7 to 8pm	8 to 9pm	9 to 10pm	10 to 11pm	Last buses
06 05	07 05	08 04	*about every*	10 10	11 07	12 04	At these 02	17 02	18 04	19 06	20 08	21 09	22 10	23 11
06 25	07 25	08 24	*14*	10 25	11 21	12 18	minutes 17	17 18	18 19	19 21	20 23	21 25	22 25	23 26
06 45	07 44	08 44	*minutes*	10 39	11 36	12 32	past the 32	17 33	18 34	19 37	20 38	21 40	22 41	23 42
		08 59		10 53	11 50	12 47	hour 47	17 49	18 50	19 52	20 54	21 55	22 56	23 57

Monday - Friday

First buses	6 to 7am	7 to 8am	8 to 9am	9am to 7pm	7 to 8pm	8 to 9pm	9 to 10pm	10 to 11pm	Last buses
05 05	06 05	07 00	08 00	*about every*	19 07	20 08	21 09	22 09	23 10
05 25	06 25	07 15	08 15	*9-11*	19 22	20 23	21 24	22 24	23 26
05 45	06 45	07 30	08 29	*minutes*	19 38	20 38	21 39	22 39	23 41
		07 45	08 39		19 53	20 53	21 54	22 55	23 57
			08 49						
			08 59						

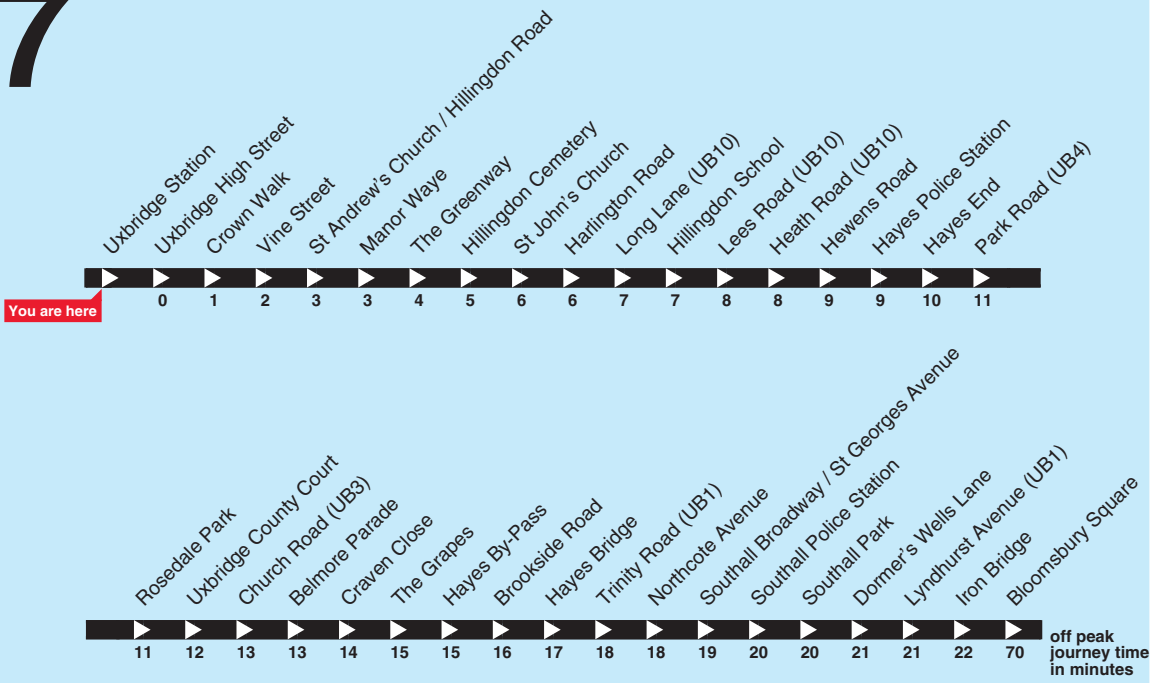
Operated by London United for London Buses

London Buses

N207

Every night

Buses towards Bloomsbury Square



Friday Night/Saturday Morning

First buses	1 to 2am	2 to 3am	3 to 4am	Last bus
0000	0105	0209	0309	0409
0030	0140	0239	0339	

Mo-Th Nights/Tu-Fr Morning

First buses	1 to 2am	2 to 3am	3 to 4am	Last bus
0000	0105	0209	0309	0409
0030	0140	0239	0339	

Saturday Night/Sunday Morning

First buses	1 to 2am	2 to 3am	3 to 4am	Last bus
0000	0105	0209	0309	0409
0030	0140	0239	0339	

Sunday Night/Monday Morning

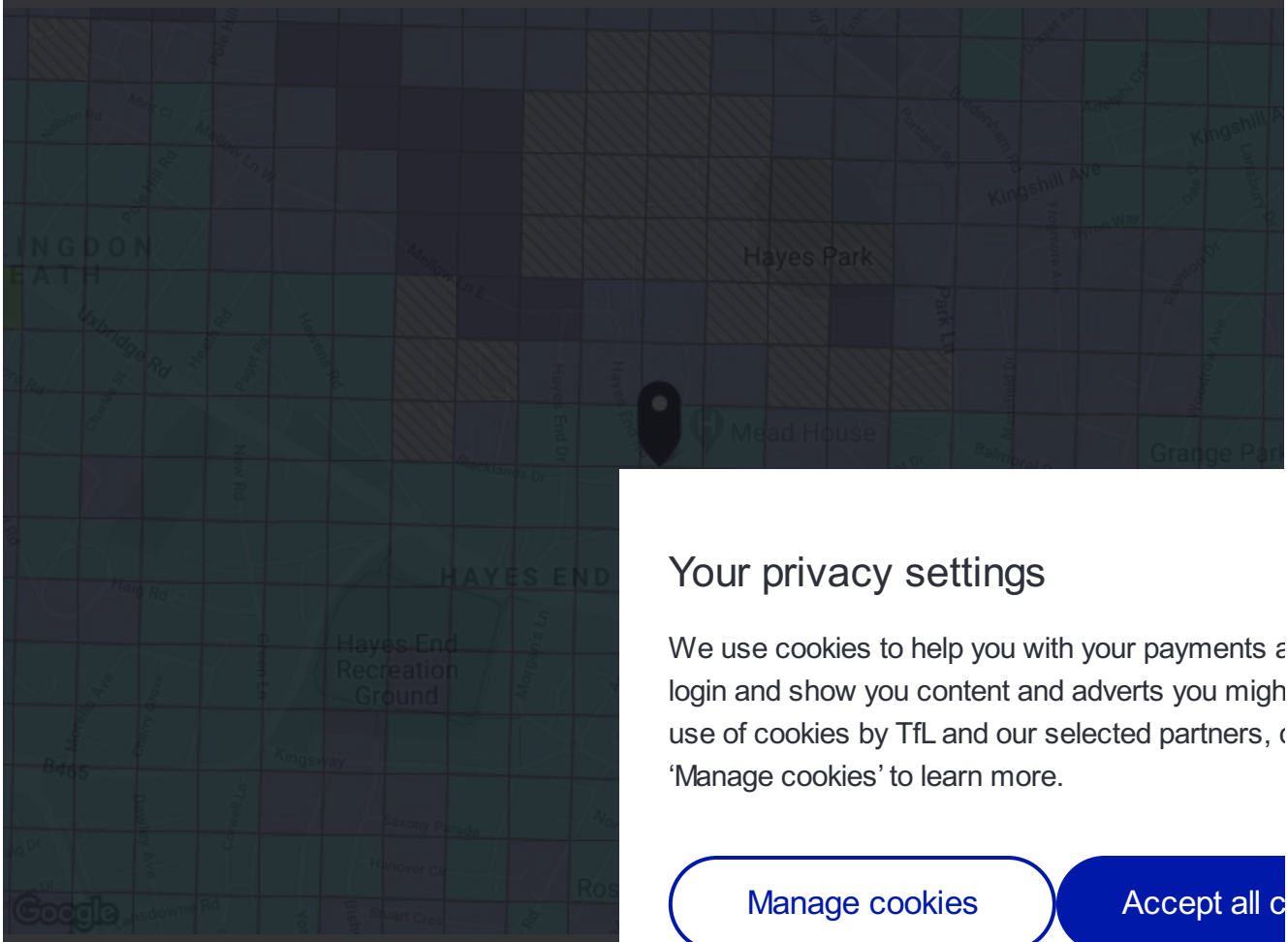
First buses	1 to 2am	2 to 3am	3 to 4am	Last bus
0000	0105	0209	0309	0409
0030	0140	0239	0339	

Operated by Abellio London for London Buses

APPENDIX
B

PTAL Assessment

TRANSPORT FOR LONDON



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Manage cookies

Accept all c

PTAL output for Base Year
2

Hayes End Road
Hayes End Rd, Hayes, UK
Easting: 508829, Northing: 182088

Grid Cell: 88171

Report generated: 17/06/2020

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

Map layers

PTAL (cell size: 100m)

Calculation Parameters

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

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Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	HAYES END THE ANGEL	H98	260.67	7.5	3.26	6	9.26	3.24	0.5	1.62
Bus	HAYES END THE ANGEL	427	260.67	7.5	3.26	6	9.26	3.24	1	3.24
Bus	HAYES END THE ANGEL	607	260.67	6	3.26	7	10.26	2.92	0.5	1.46
									Total Grid Cell AI:	**6.32**

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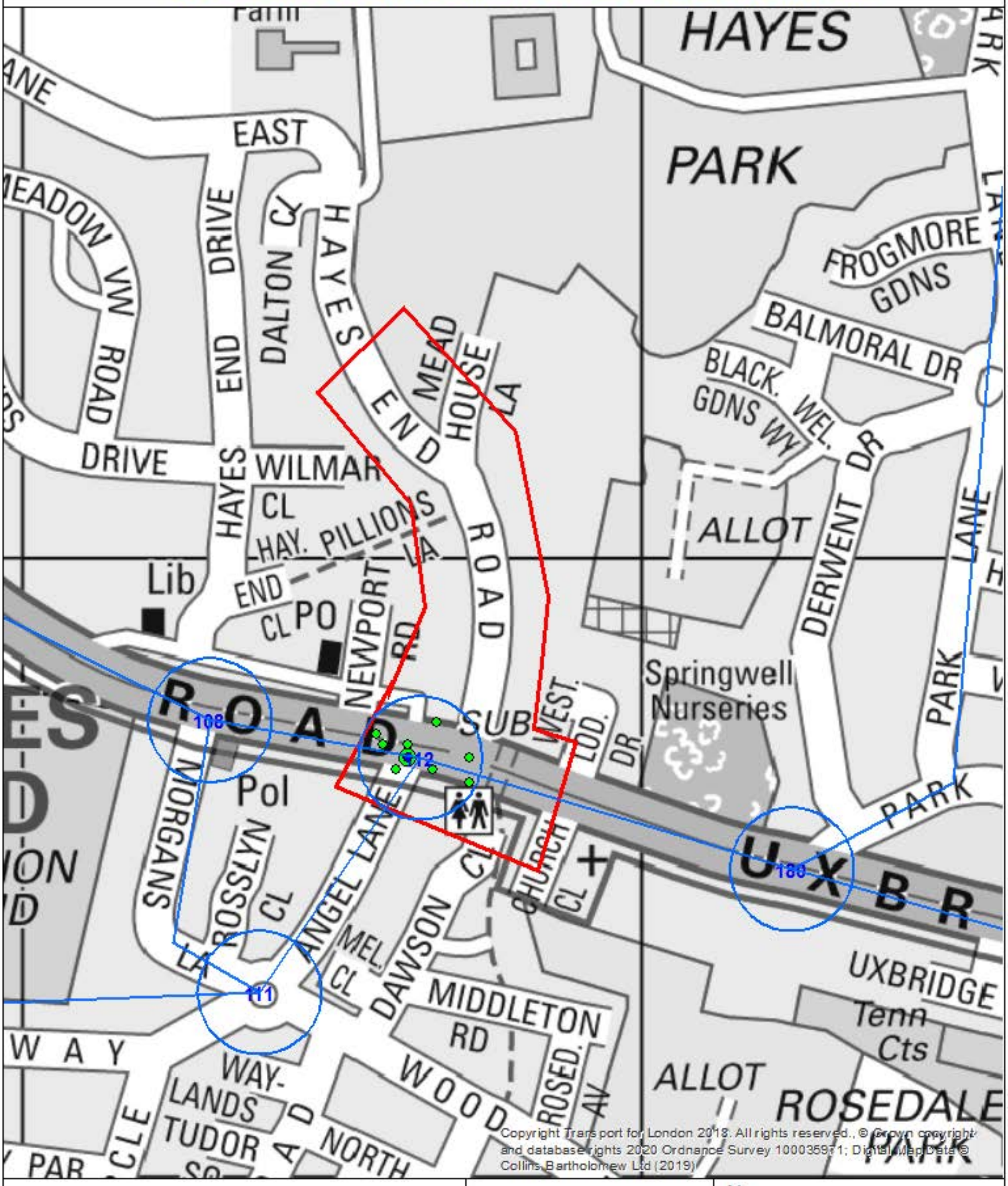
APPENDIX C

PIA Data

Hayes End Road GIS Area Collisions 5Y to 31 Aug 2019 (provisional)



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Severity of collision

	1	2	3	4	5
Slight	1 (8)	2 (2)	3 (0)	4 (0)	5 (0)
Serious	1 (1)	2 (0)	3 (0)	4 (0)	5 (0)
Fatal	1 (0)	2 (0)	3 (0)	4 (0)	5 (0)



N

0 0.05 0.1 Km

PRINTED BY:

COLLSTATS 3 - TfL City Planning

DATE:

07/04/2020

Hayes End Road GIS Area Collisions 5Y to 31 Aug 2019 (provisional)

SUMMARY OF COLLISIONS SELECTED

SITE REFERENCE AND DESCRIPTION	DATE PERIOD	ACCIDENT COUNT
MD01 GIS AREA HAYES END ROAD1(P)	60MTS TO AUG/2019	11

THE DESCRIPTION OF HOW THE COLLISION OCCURRED AND THE CONTRIBUTORY FACTORS ARE THE REPORTING OFFICER'S OPINION AT THE TIME OF REPORTING AND MAY NOT BE THE RESULT OF EXTENSIVE INVESTIGATION

1

01160007048	THU 08/12/2016 17:55		DARK	UXBRIDGE RD J/W HAYES END RD			LINK 112-180	508860/181820
SELF-REPORTED		ROAD-DRY	WEATHER-FINE	DUAL CWY	T/STAG JUN	AUTO SIG	NO XING FACIL IN 50M	NONE IN 50M

NOT KNOWN HOW COLLISION OCCURRED

CASUALTY	001 (001)	(51 YRS - F - REDA)	SLIGHT	VEH/PILLION PAX	FRONT SEAT PASSENGER		
CASUALTY	002 (001)	(18 YRS - M - REDA)	SLIGHT	VEH/PILLION PAX	REAR SEAT PASSENGER		
VEHICLE	001 (000)	CAR BT - NOT REQ	(29 YRS - M - REDACT)		G/AHEAD - OTHER	(SE TO NW) O/S HIT FIRST	J/P - UNKN JCT APP

2

0116XH30003	SAT 09/01/2016 21:30		DARK	ANGEL LANE, J/W UXBRIDGE RD			NODE 112	508800/181830
POLICE - OVER COU		ROAD-WET	WEATHER-OTHER	ONE-WAY ST	T/STAG JUN	GIVEWAY /UNCONT	PELICAN OR SIML	NONE IN 50M

C1 WAS CROSSING JCN WHEN V1 HAS TURNED INTO JCN & HIT C1, V1 THEN F.T.S

CASUALTY	001 (001)	(28 YRS - M - REDA)	SLIGHT	PEDESTRIAN	NW BOUND	FROM DRIVERS N/SIDE		
VEHICLE	001 (000)	CAR BT - DRV NOT CONTACTED	(40 YRS - F - REDACT)	TURNING - LEFT		(SE TO SW) FRONT HIT FIRST	J/P - UNKN JCT CLEARED	

V001	B	405 (FAILED TO LOOK PROPERLY)	V001	B	403 (POOR TURN OR MANOEUVRE)
C001	B	802 (FAILED TO LOOK PROPERLY)	C001	B	803 (FAILED TO JUDGE VEHICLE'S PATH OR SPEED)
C001	B	808 (CARELESS, RECKLESS OR IN A HURRY)	V001	B	602 (CARELESS, RECKLESS OR IN A HURRY)

3

0116XH30057	THU 07/01/2016 13:42	LIGHT	UXBRIDGE RD, J/W ANGEL LANE			NODE 112		508810/181850
POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	DUAL CWY	T/STAG JUN	GIVEWAY /UNCONT	PELICAN OR SIML		NONE IN 50M

V2 SLOWED & STOPPED FOR TRAFFIC TURNING IN FRONT & WAS HIT IN REAR BY V1

CASUALTY	001 (001)	(9 YRS - F - REDA)	SLIGHT	VEH/PILLION PAX	REAR SEAT PASSENGER		
VEHICLE	001 (002)	CAR BT - NOT REQ	(50 YRS - F - REDACT)		G/AHEAD - OTHER	(NW TO SE) FRONT HIT FIRST	J/P - UNKN JCT APP
VEHICLE	002 (001)	CAR BT - NOT REQ	(49 YRS - M - REDACT)		SLOWING/STOPPING	(NW TO SE) BACK HIT FIRST	J/P - UNKN JCT APP

V001	B	706 (DAZZLING SUN)	V001	A	405 (FAILED TO LOOK PROPERLY)
V001	B	308 (FOLLOWING TOO CLOSE)	V001	B	602 (CARELESS, RECKLESS OR IN A HURRY)
V002	B	408 (SUDDEN BRAKING)			

4

0116XH30377	MON 23/05/2016 13:25	LIGHT	UXBRIDGE RD 27M W J/W ANGEL LANE			LINK 108-112		508790/181850
POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	SINGLE CWY	NO JUN IN 20M	N/A	NO XING FACIL IN 50M		NONE IN 50M

V2 CUT ACROSS THE PATH OF V1

CASUALTY	001 (001)	(39 YRS - M - REDA)	SLIGHT	DRIVER/RIDER			
VEHICLE	001 (002)	PED CYCLE BT - N/A	(39 YRS - M - REDACT)		G/AHEAD - OTHER	(E TO W) FRONT HIT FIRST	J/P - UNKN
VEHICLE	002 (000)	VAN/GOODS => 3.5T BT - DRV NOT CONTACTED	(? YRS - UNKNOWN - REDACT)		TURNING - LEFT	(S TO W) O/S HIT FIRST	J/P - UNKN

V002	B	405 (FAILED TO LOOK PROPERLY)	V002	B	406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)

5

0116XH30569	THU 25/08/2016 22:30		DARK	UXBRIDGE RD J/W HAYES END RD			LINK 112-180	508860/181840
POLICE - AT SCENE		ROAD-WET	WEATHER-FINE	DUAL CWY	T/STAG JUN	AUTO SIG	NO XING FACIL IN 50M	NONE IN 50M
V2 HIT NEARSIDE OF V2								
CASUALTY	001 (002)	(40 YRS - M - REDA)		SLIGHT	DRIVER/RIDER			
VEHICLE	001 (002)	TAXI/PHV BT - NOT REQ		(52 YRS - M - REDACT)		SLOWING/STOPPING	(W TO E) N/S HIT FIRST	JOURNEY P/O WORK JCT APP
VEHICLE	002 (001)	M/C 51-125CC BT - NOT REQ		(40 YRS - M - REDACT)		G/AHEAD - OTHER	(W TO E) O/S HIT FIRST	J/P - UNKN JCT APP
V002	A	307 (TRAVELLING TOO FAST FOR CONDITIONS)				V002 A	409 (SWERVED)	

6

01170015466	MON 30/01/2017 20:47		DARK	UXBRIDGE RD J/W ANGEL LANE			NODE 112	508810/181840
POLICE - AT SCENE		ROAD-WET	RAINING	DUAL CWY	T/STAG JUN	GIVEWAY /UNCONT	PELICAN OR SIML	NONE IN 50M
CASUALTY	001 (001)	(50 YRS - F - REDA)		SLIGHT	PEDESTRIAN	S BOUND	FROM DRIVERS O/SIDE	
VEHICLE	001 (000)	CAR BT - NOT REQ		(21 YRS - F - REDACT)		TURNING RIGHT	(S TO E) FRONT HIT FIRST	J/P - UNKN L/MAIN RD
C001	A	804 (WRONG USE OF PEDESTRIAN CROSSING FACILITY)						

7

01170032353	MON 17/04/2017 13:00		LIGHT	UXBRIDGE RD J/W ANGEL LANE			NODE 112		508830/181830
POLICE - AT SCENE		ROAD-DRY	WEATHER-OTHER	SINGLE CWY	T/STAG JUN	AUTO SIG	ZEBRA XING		NONE IN 50M
CASUALTY	001 (002)	(52 YRS - F - REDA)		SLIGHT	DRIVER/RIDER				
VEHICLE	001 (000)	CAR BT - NOT REQ		(28 YRS - M - REDACT)		SLOWING/STOPPING	(NW TO W) FRONT HIT FIRST	J/P - UNKN JCT MID	
VEHICLE	002 (000)	CAR BT - NOT REQ		(52 YRS - F - REDACT)		SLOWING/STOPPING	(NW TO W) BACK HIT FIRST	J/P - UNKN JCT MID	
V002	B	408 (SUDDEN BRAKING)							

8

01170069785	MON 13/11/2017 21:40		DARK	UXBRIDGE RD J/W ANGEL LANE			NODE 112		508810/181840
POLICE - AT SCENE		ROAD-DRY	WEATHER-FINE	DUAL CWY	T/STAG JUN	GIVEWAY /UNCONT	PELICAN OR SIML		NONE IN 50M
CASUALTY	001 (001)	(22 YRS - M - REDA)		SLIGHT	DRIVER/RIDER				
CASUALTY	002 (002)	(58 YRS - F - REDA)		SLIGHT	DRIVER/RIDER				
CASUALTY	003 (002)	(31 YRS - M - REDA)		SERIOUS	VEH/PILLION PAX	REAR SEAT PASSENGER			
VEHICLE	001 (000)	CAR BT - NOT REQ		(22 YRS - M - REDACT)		G/AHEAD - OTHER	(E TO W) FRONT HIT FIRST	J/P - UNKN JCT APP	
VEHICLE	002 (000)	CAR BT - NEG		(58 YRS - F - REDACT)		TURNING RIGHT	(N TO W) N/S HIT FIRST	J/P - UNKN JCT APP	
V002	A	405 (FAILED TO LOOK PROPERLY)				V002 B	705 (DAZZLING HEADLIGHTS)		
V002	B	509 (DISTRACTION IN VEHICLE)							

9

01180088077	SUN 04/02/2018 12:25		LIGHT	UXBRIDGE RD J/W ANGEL LANE			NODE 112	508810/181840
SELF-REPORTED		ROAD-WET	WEATHER-FINE	UNKNOWN	T/STAG JUN	GIVEWAY /UNCONT	UNKNOWN S/R	UNKNOWN S/R

NOT KNOWN HOW COLLISION OCCURRED

CASUALTY	001 (001)	(26 YRS - M - REDA)	SLIGHT	DRIVER/RIDER			
VEHICLE	001 (000)	PED CYCLE BT - N/A	(26 YRS - M - REDACT)	UNKNOWN S/R	UNKNOWN S/R	(MOVE UNKN) FRONT HIT FIRST	J/P - UNKN UNKNOWN S/R
VEHICLE	002 (000)	CAR BT - DRV NOT CONTACTED	(30 YRS - F - REDACT)		UNKNOWN S/R	(MOVE UNKN) N/S HIT FIRST	J/P - UNKN UNKNOWN S/R

10

01190170414	THU 21/03/2019 12:25		LIGHT	UXBRIDGE RD, NR JUNCT WTH ANGEL LANE .			NODE 112	508833/181868
POLICE - AT SCENE		ROAD-DRY	WEATHER-FINE	SINGLE CWY	T/STAG JUN	GIVEWAY /UNCONT	NO XING FACIL IN 50M	NONE IN 50M

ON THURSDAY 21 MARCH 2019 AT 12:25 A COLLISION OCCURED ON UXBRIDGE ROAD, NEAR THE JUNCTION WITH ANGEL LANE IN HILLINGDON INVOLVING SIX CARS

CASUALTY	001 (003)	(27 YRS - M - REDA)	SLIGHT	DRIVER/RIDER			
VEHICLE	001 (000)	CAR BT - NOT REQ	(49 YRS - M - REDACT)		WAITING - HELD UP	(N TO S) N/S HIT FIRST	JCT APP
VEHICLE	002 (000)	CAR BT - NOT REQ	(? YRS - M - REDACT)		G/AHEAD - OTHER	(W TO E) O/S HIT FIRST	J/P - UNKN JCT APP
VEHICLE	003 (000)	CAR BT - NOT REQ	(27 YRS - M - REDACT)		WAITING - HELD UP	(W TO E) BACK HIT FIRST	JCT APP
VEHICLE	004 (000)	CAR BT - NOT REQ	(52 YRS - M - REDACT)		WAITING - HELD UP	(W TO E) BACK HIT FIRST	JCT APP
VEHICLE	005 (000)	CAR BT - NOT REQ	(42 YRS - M - REDACT)		WAITING - HELD UP	(W TO E) DID NOT IMPACT	JCT APP
VEHICLE	006 (000)	CAR	(34 YRS - M -		WAITING - HELD UP	(W TO E)	JCT APP

		BT - NOT REQ	REDACT)			BACK HIT FIRST
V002	A	405 (FAILED TO LOOK PROPERLY)		V002	A	409 (SWERVED)

11

01190196292	SAT 27/07/2019 18:55	LIGHT	UXBRIDGE RD, 42 METRES WEST OF JUNCT WTH ANGEL LANE.			NODE 112		508785/181859
POLICE - AT SCENE	ROAD-WET	RAINING	DUAL CWY	T/STAG JUN	AUTO SIG	PEDN PHASE ATS		CTRL - AUTH PERSON

ON SATURDAY 27 JULY 2019 AT 18:55 A COLLISION OCCURED ON UXBRIDGE ROAD, 42 METRES WEST OF THE JUNCTION WITH ANGEL LANE. IN HILLINGDON INVOLVING ONE CAR AND ONE VAN / GOODS VEHICLE 3.5 TONN MAXIMUM GROSS WEIGHT (MGW) AND UNDER

CASUALTY	001 (001)	(40 YRS - M - REDA)	SLIGHT	VEH/PILLION PAX			
VEHICLE	001 (000)	VAN/GOODS => 3.5T BT - NOT REQ	(26 YRS - M - REDACT)		SLOWING/STOPPING	(W TO E) BACK HIT FIRST	JOURNEY P/O WORK JCT APP
VEHICLE	002 (000)	CAR BT - NOT REQ	(44 YRS - M - REDACT)		G/AHEAD - OTHER	(W TO E) FRONT HIT FIRST	JCT APP
V002	B	405 (FAILED TO LOOK PROPERLY)					

APPENDIX
D

Proposed Site Layout Plan



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Scale:
0 2 6 10 20m

LEGEND

FFL 40.85 Proposed Finished floor level

Existing Building Footprint

Existing trees to be retained

New Planting to be added

N

NB: OS map data and Topographical survey information overlayed

NB: For detailed existing ground levels please refer to topographical survey drawing produced by Laser Survey Services

Revision Note & Date

Rev	Date	Note	Initial

ON ARCHITECTURE

Canterbury Studio
Logan House, St Andrews Close
Canterbury,
CT1 2RP

London Studio
Ink Rooms, 28, Easton Street
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info@onarchitecture.co.uk
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Project Title
LAND OFF HAYES END ROAD

Clients Details
BUGLER HOMES

Drawing Title
SITE PLAN

BIM Number
N/A

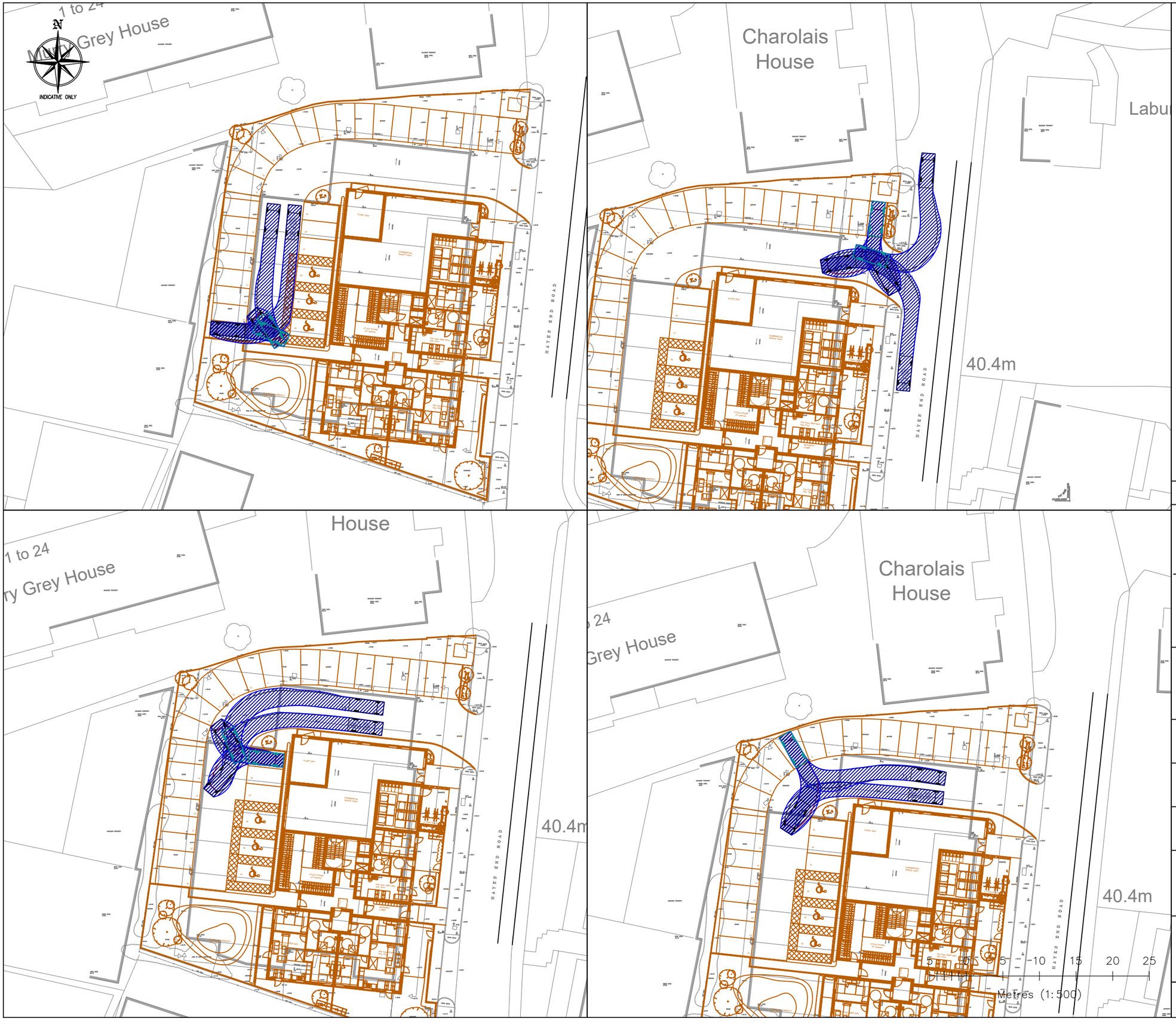
Scale	Date	Drawn	Checked
1:200 @ A1	09/06/2020	IR	NL

Drawing Status
PLANNING

Project Number	Drawing Number	Drawing Revision
19.156	0100	P03

APPENDIX
E

Swept Path Analysis



DO NOT SCALE

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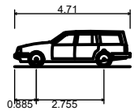

Estate Car (2006)	
Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

Notes:

- Drawing is based on OS Data, topographical survey and an architects plan provided by On Architecture on 11th June 2020.

REV	DATE	BY	DESCRIPTION	CHK	APD
P1	11.06.20	JM	First Issue	CS	CS

client

BUGLER DEVELOPMENTS

project

HAYES END ROAD

title

VEHICLE SWEPT PATH ANALYSIS
ESTATE CAR

project	drwg	rev
14529	T-01	P1

Drawn	Checked	Approved	scale @ A3	date
JM	CS	CS	1:500	11.06.20

status: FOR INFORMATION — P

Eclipse House, Eclipse Park. Sittingbourne Road
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t: 01622 776226 f: 01622 776227
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CAD Reference: A3

APPENDIX
F

TRICS Reports

Calculation Reference: AUDIT-704001-200422-0423

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BT	BRENT	1 days
	EN	ENFIELD	2 days
	HG	HARINGEY	1 days
	RD	RICHMOND	1 days
02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	NT	NOTTINGHAMSHIRE	2 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
09	NORTH		
	CB	CUMBRIA	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 9 to 184 (units:)
Range Selected by User: 6 to 200 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 25/09/19

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

Selected survey days:

Monday	3 days
Tuesday	5 days
Wednesday	7 days
Friday	1 days

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

Selected survey types:

Manual count	16 days
Directional ATC Count	0 days

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

Selected Locations:
Suburban Area (PPS6 Out of Centre) 16

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

Selected Location Sub Categories:

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

Secondary Filtering selection:

Use Class:

C3	16 days

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

Population within 1 mile:

1,001 to 5,000	2 days
10,001 to 15,000	2 days
20,001 to 25,000	4 days
25,001 to 50,000	5 days
50,001 to 100,000	3 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	5 days
500,001 or More	7 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	8 days
1.1 to 1.5	7 days

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

Travel Plan:

Yes	2 days
No	14 days

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

PTAL Rating:

No PTAL Present	12 days
1a (Low) Very poor	1 days
2 Poor	1 days
3 Moderate	1 days
4 Good	1 days

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

LIST OF SITES relevant to selection parameters

1 BT-03-C-01 BLOCKS OF FLATS BRENT
LAKESIDE DRIVE
PARK ROYAL

Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 170
Survey date: WEDNESDAY *28/09/16* *Survey Type: MANUAL*

2 CA-03-C-03 BLOCKS OF FLATS CAMBRIDGESHIRE
CROMWELL ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 82
Survey date: MONDAY *18/09/17* *Survey Type: MANUAL*

3 CB-03-C-03 FLATS & BUNGALOWS CUMBRIA
LOUND STREET
KENDAL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 33
Survey date: MONDAY *09/06/14* *Survey Type: MANUAL*

4 DC-03-C-02 FLATS IN BLOCKS DORSET
PALM COURT
WEYMOUTH
SPA ROAD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 14
Survey date: FRIDAY *28/03/14* *Survey Type: MANUAL*

5 DS-03-C-03 BLOCKS OF FLATS DERBYSHIRE
CAESAR STREET
DERBY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

6 EB-03-C-01 BLOCKS OF FLATS CITY OF EDINBURGH
MYRESIDE ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 32
Survey date: TUESDAY *26/05/15* *Survey Type: MANUAL*

7 EN-03-C-01 BLOCK OF FLATS ENFIELD
SOUTH STREET
ENFIELD

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total No of Dwellings: 16
Survey date: MONDAY *16/11/15* *Survey Type: MANUAL*

8 EN-03-C-03 BLOCKS OF FLATS ENFIELD
NORTH CIRCULAR ROAD
PALMERS GREEN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 18
Survey date: WEDNESDAY *08/11/17* *Survey Type: MANUAL*

9 ES-03-C-01 BLOCK OF FLATS EAST SUSSEX
OLD SHOREHAM RD
BRIGHTON
HOVE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 71
Survey date: TUESDAY *26/09/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 HG-03-C-02 BLOCK OF FLATS HARINGEY
HIGH ROAD
WOOD GREEN
WOODSIDE PARK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *01/10/14* *Survey Type: MANUAL*

11 MS-03-C-02 BLOCKS OF FLATS MERSEYSIDE
SOUTH FERRY QUAY
LIVERPOOL
BRUNSWICK DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 184
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

12 MS-03-C-03 BLOCK OF FLATS MERSEYSIDE
MARINERS WHARF
LIVERPOOL
QUEENS DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 9
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

13 NT-03-C-01 HOUSES (SPLIT INTO FLATS) NOTTINGHAMSHIRE
LAWRENCE WAY
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 56
Survey date: TUESDAY *08/11/16* *Survey Type: MANUAL*

14 NT-03-C-02 HOUSES (SPLIT INTO FLATS) NOTTINGHAMSHIRE
CASTLE MARINA ROAD
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 135
Survey date: WEDNESDAY *09/11/16* *Survey Type: MANUAL*

15 RD-03-C-04 BLOCKS OF FLATS RICHMOND
BESSANT DRIVE
KEW

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 170
Survey date: WEDNESDAY *15/05/19* *Survey Type: MANUAL*

16 SF-03-C-03 BLOCKS OF FLATS SUFFOLK
TOLLGATE LANE
BURY ST EDMUNDS

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *03/12/14* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HK-03-C-03	inner london
IS-03-C-03	inner london

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	68	0.057	16	68	0.129	16	68	0.186
08:00 - 09:00	16	68	0.047	16	68	0.154	16	68	0.201
09:00 - 10:00	16	68	0.066	16	68	0.094	16	68	0.160
10:00 - 11:00	16	68	0.065	16	68	0.081	16	68	0.146
11:00 - 12:00	16	68	0.055	16	68	0.069	16	68	0.124
12:00 - 13:00	16	68	0.057	16	68	0.069	16	68	0.126
13:00 - 14:00	16	68	0.062	16	68	0.078	16	68	0.140
14:00 - 15:00	16	68	0.066	16	68	0.064	16	68	0.130
15:00 - 16:00	16	68	0.081	16	68	0.057	16	68	0.138
16:00 - 17:00	16	68	0.091	16	68	0.065	16	68	0.156
17:00 - 18:00	16	68	0.131	16	68	0.079	16	68	0.210
18:00 - 19:00	16	68	0.116	16	68	0.076	16	68	0.192
19:00 - 20:00	3	119	0.154	3	119	0.101	3	119	0.255
20:00 - 21:00	3	119	0.103	3	119	0.050	3	119	0.153
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.151			1.166			2.317

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

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

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Parameter summary

Trip rate parameter range selected:	9 - 184 (units:)
Survey date date range:	01/01/12 - 25/09/19
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	2

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

Calculation Reference: AUDIT-704001-200617-0642

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

01	GREATER LONDON		
	BT	BRENT	1 days
	WH	WANDSWORTH	1 days
02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
08	NORTH WEST		
	LC	LANCASHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 186 to 4800 (units: sqm)
Range Selected by User: 178 to 5000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 25/09/19

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

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Friday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6

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

Selected Location Sub Categories:

Development Zone	1
Residential Zone	3
Built-Up Zone	2

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

Secondary Filtering selection:

Use Class:

B1	6 days

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

Population within 1 mile:

5,001 to 10,000	1 days
25,001 to 50,000	3 days
50,001 to 100,000	2 days

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

Population within 5 miles:

75,001 to 100,000	1 days
125,001 to 250,000	1 days
500,001 or More	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	1 days

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

Travel Plan:

Yes	2 days
No	4 days

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

PTAL Rating:

No PTAL Present	4 days
4 Good	1 days
6a Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1 BT-02-A-03 OFFICES BRENT
EMPIRE WAY
WEMBLEY

Suburban Area (PPS6 Out of Centre)
Development Zone
Total Gross floor area: 920 sqm
Survey date: WEDNESDAY *03/06/15* *Survey Type: MANUAL*

2 ES-02-A-11 HOUSING COMPANY EAST SUSSEX
THE SIDINGS
HASTINGS
ORE VALLEY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 186 sqm
Survey date: TUESDAY *17/11/15* *Survey Type: MANUAL*

3 LC-02-A-09 OFFICES LANCASHIRE
FURTHERGATE
BLACKBURN

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 2600 sqm
Survey date: TUESDAY *04/06/13* *Survey Type: MANUAL*

4 TW-02-A-08 HOUSING ASSOCIATION OFFICE TYNE & WEAR
BENTON PARK ROAD
NEWCASTLE UPON TYNE
LONGBENTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 4800 sqm
Survey date: FRIDAY *19/10/18* *Survey Type: MANUAL*

5 WH-02-A-03 OFFICE WANDSWORTH
BROUGHTON STREET
NINE ELMS

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 1400 sqm
Survey date: MONDAY *16/11/15* *Survey Type: MANUAL*

6 WM-02-A-04 OFFICE WEST MIDLANDS
BOURNVILLE LANE
BIRMINGHAM

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1800 sqm
Survey date: TUESDAY *10/11/15* *Survey Type: MANUAL*

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

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	1934	0.284	6	1934	0.034	6	1934	0.318
08:00 - 09:00	6	1934	1.345	6	1934	0.147	6	1934	1.492
09:00 - 10:00	6	1934	0.707	6	1934	0.353	6	1934	1.060
10:00 - 11:00	6	1934	0.319	6	1934	0.302	6	1934	0.621
11:00 - 12:00	6	1934	0.259	6	1934	0.284	6	1934	0.543
12:00 - 13:00	6	1934	0.465	6	1934	0.534	6	1934	0.999
13:00 - 14:00	6	1934	0.517	6	1934	0.422	6	1934	0.939
14:00 - 15:00	6	1934	0.284	6	1934	0.310	6	1934	0.594
15:00 - 16:00	6	1934	0.207	6	1934	0.397	6	1934	0.604
16:00 - 17:00	6	1934	0.319	6	1934	0.767	6	1934	1.086
17:00 - 18:00	6	1934	0.129	6	1934	1.026	6	1934	1.155
18:00 - 19:00	6	1934	0.034	6	1934	0.250	6	1934	0.284
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.869			4.826			9.695

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

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

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Parameter summary

Trip rate parameter range selected:	186 - 4800 (units: sqm)
Survey date date range:	01/01/12 - 25/09/19
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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