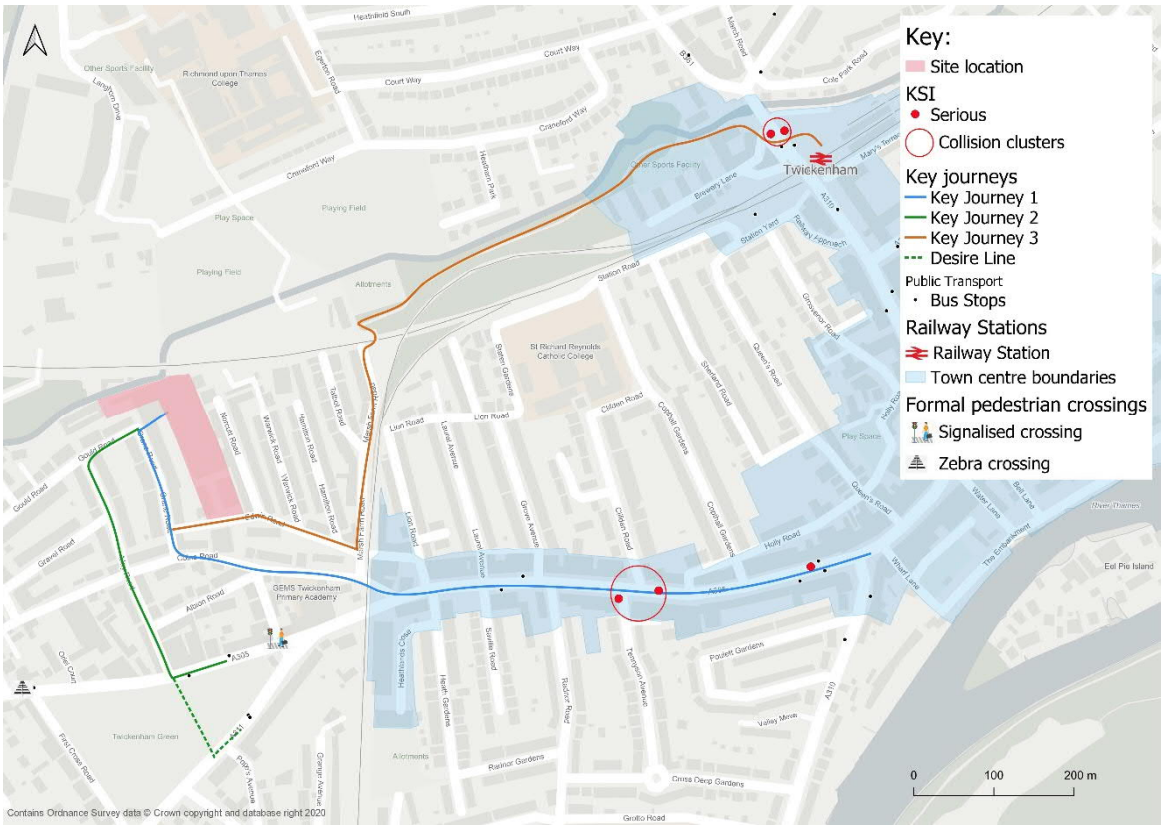
Figure 4-6: Map 2 - Key active travel journeys



VISION ZERO AND MITIGATION

4.3.7 A review of collision data provided by the Department of Transport was undertaken to identify clusters of one fatal or two or more serious collisions occurring along the key journeys between 2017 and 2019, the most recent three-year period available. For each killed or seriously injured (KSI) cluster identified, safety improvements are recommended.

4.3.8 Two clusters of collisions were identified in Figure 4-6. No fatal collisions have occurred on the key journeys within the recent three-year period reviewed.

KEY JOURNEY 1 CLUSTER – HEATH ROAD/TENNYSON AVENUE AND HEATH ROAD/CLIFDEN ROAD

4.3.9 Two collisions resulted in a number of casualties occurring on A503 Heath Road. One occurred at the priority junction with Tennyson Avenue, and the other occurred at the priority junction with Clifden Road.

4.3.10 The following safety improvements are recommended for junctions where KSI clusters have been identified on Key Journey One:

- Installation of average speed cameras to enforce the 20mph speed limit.
- Provision of additional crossing points for pedestrians and cyclists (where possible) on the A503 Heath Road to better accommodate desired lines.
- General highway maintenance issues such as repainting markings and re-surfacing the carriageway are suggested to be rectified by LBRuT.

KEY JOURNEY 3 CLUSTER – A310 LONDON ROAD

4.3.11 Two collisions resulted in a number of casualties occurring on the A310 London Road to the north of the junction with Brewery Lane.

4.3.12 The following safety improvements are recommended for junctions where KSI clusters have been identified on Key Journey Three:

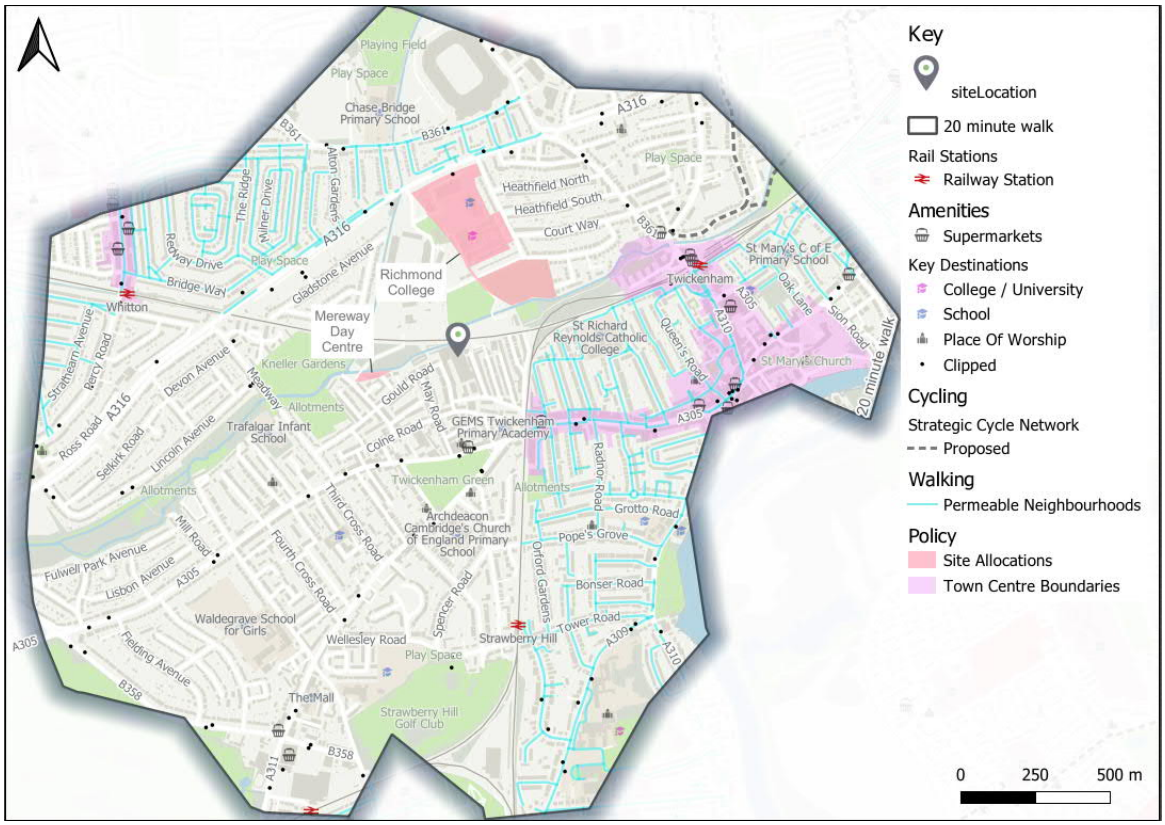
- Installation of average speed cameras to enforce the 20mph speed limit.
- Install signage and road markings on junctions to alert drivers to slow their speeds, alert pedestrians to look out for cyclists, and alert cyclists of locations where pedestrians are likely to share space with cyclists.
- Provision of wayfinding signage to facilitate pedestrian movement through the area better and realign existing desired lines towards controlled crossing points.
- General highway maintenance issues such as repainting markings and re-surfacing the carriageway are suggested to be rectified by LBRuT.

HEALTHY NEIGHBOURHOOD CHARACTERISTICS

4.3.13 Figure 4-7 shows Map Three, and the characteristics of a typical healthy neighbourhood, including:

- Street density
- Public transport
- Green spaces
- Other development and regeneration projects

Figure 4-7: Map 3 - Healthy Neighbourhood Characteristics



KEY JOURNEY ASSESSMENT

4.3.14 The ATZ assessment was undertaken as a desktop audit using online street-level imagery. Consideration was given to how pedestrians may feel about travelling via the key routes during evening hours when daylight is significantly reduced.

4.3.15 This section reviews the 'worst' part of each journey against eight of the ten Healthy Streets criteria (criteria 3 – 10), making recommended suggestions for improvements where possible. 'Worst' is defined as the most unpleasant or potentially unsafe section for people on the street.

4.3.16 The eight Healthy Streets criteria considered in this assessment are:

- Easy to cross.
- People feel safe.
- Things to see and do.
- Places to stop and rest.
- People feel relaxed.
- Not too noisy.
- Clean air.
- Shade and shelter.

KEY JOURNEY 1 - HEATH ROAD/KING STREET TOWN CENTRE

4.3.17 Key journey one connects the site with Heath Road/King Street Town Centre, where there are several local retailers, restaurants, supermarkets, a gym, bank, doctors' surgery and Twickenham Farmers' Market (which is open on Saturdays from 9 am to 1 pm) and Holly Road car park.

4.3.18 The worst section of this journey, shown in Figure 4-8, was identified to be on Colne Road at the junction with Marsh Farm Road, underneath the railway bridge. This section of the journey lacks lighting, visibility, and things to see and do and has narrow footways.

Figure 4-8: Key journey 1 – the worst point on Colne Road

4.3.19 This area of the journey has been assessed against the eight healthy streets indicators below:

- Easy to cross – The crossing at the Colne Road/Marsh Farm Road junction lacks dropped kerbs and tactile paving. Dropped kerbs and tactile paving could be provided at the junction to make crossing accessible and easy to cross for all.
- People feel safe – This section has narrow footways, which may negatively affect peoples' perceptions of safety on this journey. However, the bridge forms a constraint, and the existing carriageway width is already narrow, which prevents footway widening in this location.
- Things to see and do – There are a number of supermarkets, shops, cafes, and restaurants along this journey.

- Places to stop and rest – There are limited opportunities to sit along this journey, with the exception of bus stop seating. Additional public benches could be installed where the footway width allows on Heath Road.
- People feel relaxed – This section of the journey has poor visibility and lacks lamination. Lighting could be installed under the bridge.
- Not too noisy – The journey is generally quiet, with the exception of the sound of trains travelling over the bridge.
- Clean air – According to the London Air Quality Network,[1] this section of the journey passes the annual mean objective for NO2 pollution.
- Shade and shelter – The railway bridge and street trees offer shade and shelter along this journey.

KEY JOURNEY 2 - BUS STOPS ALONG TWICKENHAM GREEN

4.3.20 Key journey two connects the site with the bus stops on Twickenham Green. The bus stops on the northern side of Twickenham Green are served by bus routes 490 and H22, and the bus stops at the southern side of the green are served by bus routes 267, 281, 290, 681, N22 and R70.

4.3.21 This journey also connects with a number of nearby local amenities, including a local dentist (The Complete Smile Twickenham), a church (Twickenham Green Baptist Church), a pharmacy (Maple Leaf Pharmacy), a primary school (Archdeacon Cambridge's Church of England (CoE) Primary School), a nursery (Jack and Jill Reception Nursery School), Twickenham Cricket Club and a number of local retailers, restaurants and supermarkets, all of which surround Twickenham Green.

4.3.22 The worst section of this journey was identified at the May Road/Colne Road crossroad junction, shown in Figure 4-9, which lacks tactile paving at the dropped kerbs of each arm, lacks footway width, which is narrowed further by the placement/positioning of street furniture, bollards and parking bays.

[1] http://www.londonair.org.uk/london/asp/annualmaps.asp

Figure 4-9: Journey 2 - the worst point at the May Road junction with Colne Road

4.3.23 This area of the journey has been assessed against the eight healthy streets indicators below:

- Easy to cross – This section of the journey lacks tactile paving, making crossing Colne Road difficult to navigate for the visually impaired. Tactile paving could be provided on all arms of the May Road/Colne Road priority junction to improve crossing for all.
- People feel safe – The one-way road is lightly trafficked and is overlooked by residential properties, providing passive surveillance and strengthening perceptions of safety.
- Things to see and do – There are a number of shops, cafes and restaurants a short walk from this section of the route on The Green.
- Places to stop and rest – The journey lacks places to stop and rest. However, there are plenty of seating opportunities at The Green, which is a short walk away.
- People feel relaxed – The lack of vehicular traffic during peak periods associated with the school makes this link a more attractive route for pedestrians and cyclists.
- Not too noisy – This journey is lightly trafficked and considered quiet.

- Clean air – According to the London Air Quality Network,[2] this section of the journey passes the annual mean objective for NO2 pollution.
- Shade and shelter – This journey has no shade or shelter. Street trees could be planted where the width of the footway permits.

KEY JOURNEY 3 - TWICKENHAM STATION

4.3.24 Key journey three connects the site with Twickenham Station and National Rail services. This route is likely to be used regularly by prospective residents and employees of the proposed development.

4.3.25 The worst section of the journey, shown in Figure 4-10, was identified as the end of Marsh Farm Road. The lack of legibility creates a confusing environment for pedestrians and cyclists. There is no footway provided on the eastern side of Marsh Farm Road. The pedestrian bridge over the railway lines lacks step-free access, and this section of this journey lack street lighting.

Figure 4-10: Journey 3 - the worst point at the end of Marsh Farm Road

[2] http://www.londonair.org.uk/london/asp/annualmaps.asp

4.3.26 This area of the journey has been assessed against the eight healthy streets indicators below:

- Easy to cross – This section of the journey is not easy to cross for all; the pedestrian bridge lacks step-free access; therefore, cyclists, those with mobility issues, wheelchair users, and people with pushchairs cannot continue the journey. A wheeling ramp adjacent to the staircase (i.e., a Dutch wheeling staircase) could be provided to facilitate access for cycles over the railway lines.
- People feel safe – Marsh Farm Road is lightly trafficked, creating a safer environment for pedestrians and cyclists. Figure 4-11 shows cyclists travelling along Marsh Farm Road towards Colne Road.

  Whilst Marsh Lane Road is ideal for cyclists. Figure 4-11 shows the footway on the western side is uneven, and the provision of bollards reduces the width. The forecast reduction of HGVs in the vicinity of the site will improve safety for pedestrians and cyclists in the area.
- Things to see and do – Figure 4-10 shows there is a lack of things to see and do on this journey. This route facilitates access to/from the station where there are local retailers (i.e., coffee shops etc.) located, providing things to see and do along a person's commute.
- Places to stop and rest – There are no places to sit provided along this journey. New benches could be provided adjacent to the pedestrian bridge where space permits.
- People feel relaxed – People may not feel relaxed along this journey due to the lack of visibility and legibility. The provision of additional street lighting and wayfinding signage on Marsh Farm Road would improve safety perceptions, particularly during evening hours when daylight is reduced.
- Not too noisy – This journey is lightly trafficked and considered quiet.
- Clean air – According to the London Air Quality Network,[3] this section of the journey passes the annual mean objective for NO2 pollution.
- Shade and shelter – Street trees provide shade and shelter along this journey.

[3] http://www.londonair.org.uk/london/asp/annualmaps.asp

Figure 4-11: Cyclists travelling along Marsh Farm Road towards Colne Road

SUMMARY

4.3.27 There are several small interventions that could be implemented to improve the key routes to local destinations for existing residents of the area and future residents and employees of the proposed development. A reduction of HGVs is forecast as a result of the proposed development, which will improve the environment surrounding the site, improving safety for all road users as well as pedestrians and cycles.

4.3.28 It is not expected that the Applicant will need to contribute to or implement all potential improvements that are identified through the ATZ assessment, especially because the proposed development would not be the only party to benefit from these changes. Improvements identified in this assessment should be investigated further and, if deemed appropriate, secured through a suitable channel such as through future development CIL contributions or LBRuT's local walking/cycling improvement programmes (i.e., Richmond's Active Travel Strategy.

5 LONDON-WIDE NETWORK

5.1.1 This section provides information on the proposed use of the wider transport network, including how people are predicted to travel and their anticipated mode of travel. The London-Wide network is the public transport and highway networks beyond the site and its surroundings. The Transport for London Road Network is some distance from the proposed development, and therefore highway implications have been considered within a specific Richmond analysis.

5.2 PUBLIC TRANSPORT NETWORK

PUBLIC TRANSPORT ACCESS LEVEL

5.2.1 Public Transport Access Level (PTAL) is used to assess the connectivity of a site to the public transport network in consideration of the access time and frequency of services. It considers rail stations within a 12-minute walk (960m) of the site and bus stops within an eight-minute walk (640m) and is undertaken using the AM peak hour operating patterns of public transport services. An Access Index (AI) score is calculated that is used to define a PTAL score.

5.2.2 TfL's online WebCAT tool shows the site AI is 8.97 indicating a PTAL of 2 (poor). The WebCAT PTAL output is summarised in Figure 5-1 and Table 5-1.

Figure 5-1: Site PTAL mapping

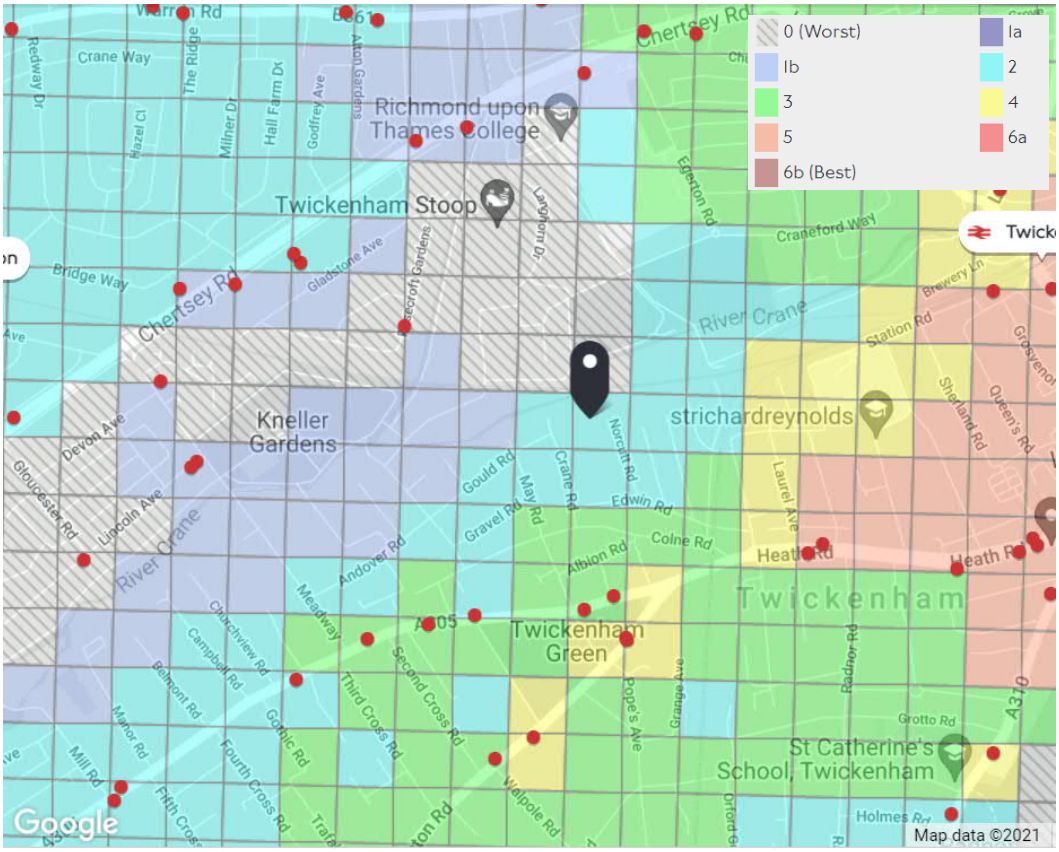


Table 5-1: Summary of PTAL

SERVICE	SERVICES	KEY STOPS / STATIONS (WALK TIME)	PTAL ACCESS INDEX
Bus	290 ,281, R70, 267, 110, 490, H22	Twickenham Green (5 minutes)	8.97
Total			8.97 (PTAL 2)

5.2.3 The site has a PTAL of 2; however, this only accounts for two local bus stops (providing access to seven routes) and not the nearby railway stations, i.e., Strawberry Hill Station and Twickenham Station. The stations are situated just outside the 12-minute PTAL walking catchment but are still within reasonable walking distance.

5.2.4 Walking and cycling are generally accepted as important alternatives to the private car and should also be encouraged to form part of a longer journey via public transport. The Chartered Institute of Highways and Transportation (CIHT) has prepared several guidance documents that provide advice with respect to the provision of sustainable travel in conjunction with new developments. Within these documents, it is suggested that:

- Most people will walk to a destination that is less than one mile (circa 1.6km) – Planning for Walking, 2015;
- The National Travel Survey notes that walking is the most frequent travel mode used for short-distance trips (within 1 mile / 1.6km) - National Travel Survey, 2017;
- Walking can replace short car trips, particularly those under 2km – Manual for Streets, 2007; and
- Walking distances to bus stops should not exceed 400m, whilst people are prepared to walk twice as far to rail stations, Planning for Walking, 2015.

5.2.5 In this respect, PTAL is not considered the most representative measure of the site's accessibility. Moving just 200m to the east closer to the centre of Twickenham, and the PTAL levels increase to 4 and 5, which would indicate good to very good access to public transport services.

BUS NETWORK

5.2.6 The site benefits from a number of bus routes in the area, with the closest bus routes situated along Twickenham Green (stops GC, GL, GT and GM), all of which are situated within a six-minute walk to the south of the site. There are additional stops on Heath Road Grove Avenue (Stop GS, an eight-minute walk) to the southeast of the site providing services towards Hounslow, Fulwell, Tolworth and Heathrow Airport.

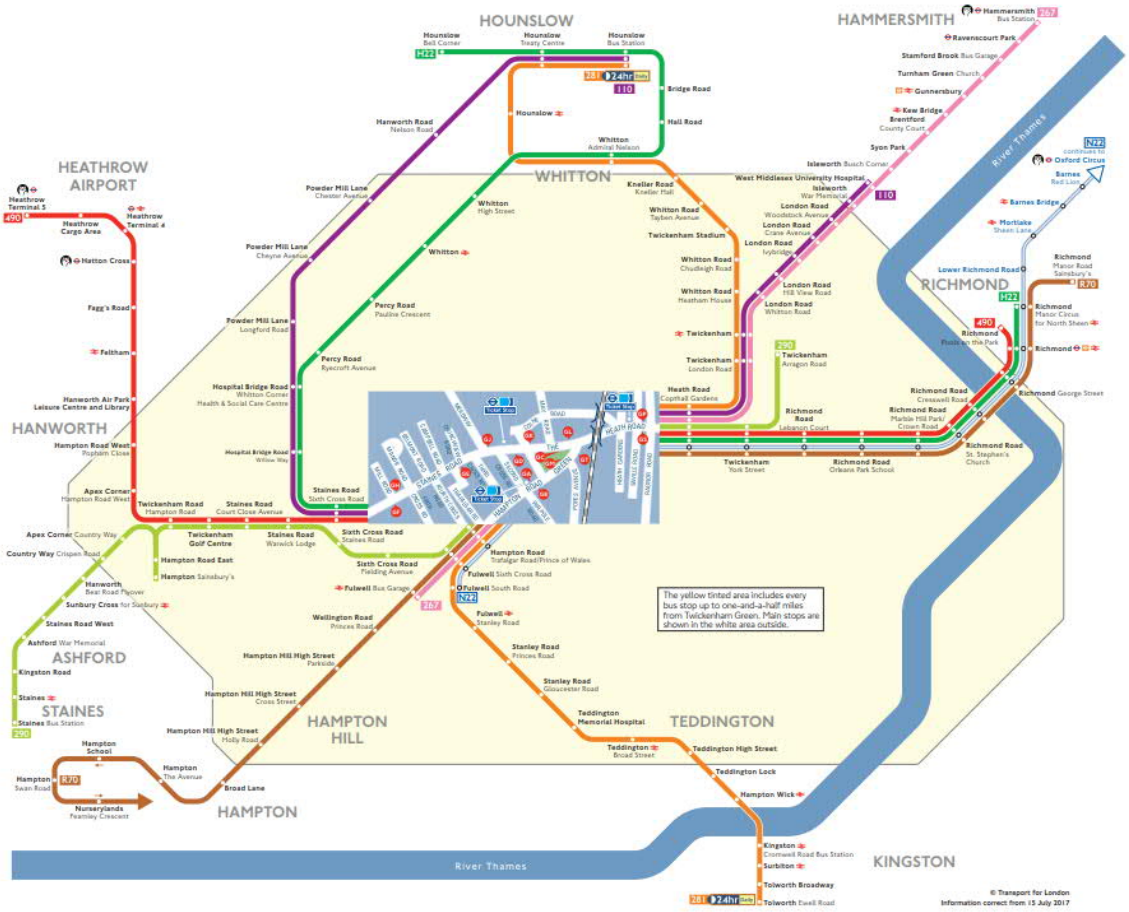
5.2.7 Table 5-2 provides details of these routes, including peak hour frequencies, and Figure 5-2 shows their routing.

Table 5-2: Bus service frequencies

SERVICE NO.	ROUTE	PEAK HOUR FREQUENCY (SERVICES PER HOUR)		OPERATOR
		AM	PM	
110	West Middlesex Hospital - Isleworth - Twickenham - Powder Mill Lane - Hounslow	9	6	London United
490	Heathrow Airport - Hatton Cross - Feltham - Staines Road - Twickenham - Richmond	15	15	Abellio London

SERVICE NO.	ROUTE	PEAK HOUR FREQUENCY (SERVICES PER HOUR)		OPERATOR
		AM	PM	
267	Fulwell - Twickenham - Isleworth - Brentford - Turnham Green - Hammersmith	18	17	London United
281	Tolworth - Surbiton - Kingston - Teddington - Fulwell - Twickenham - Whitton - Hounslow	18	19	London United
290	Staines - Ashford - Sunbury Cross - Fulwell - Twickenham	3	3	Abellio London
H22	Hounslow - Hall Road - Whitton - Staines Road - Twickenham - Richmond - Richmond Manor Circus	15	15	London United
R70	Hanworth/Nursery lands (circular) - Hampton Hill - Fulwell - Twickenham - Richmond	16	19	Abellio London

Figure 5-2: Local bus routes



RAIL NETWORK

5.2.8 The closest railway station to the site is Strawberry Hill, situated a 13-minute walk (1.1km) to the south of the site. Twickenham Railway Station, located approximately 1.6 km to the east of the site along Station Road, provides more train services.

5.2.9 The station is operated by Southwest Railway, providing access to destinations including London Waterloo, Reading, Clapham Junction, Chiswick and Wimbledon.

5.2.10 A network map illustrating the rail connectivity from Twickenham Station is shown in Figure 5-3 and Figure 5-4

Figure 5-3: Rail network map

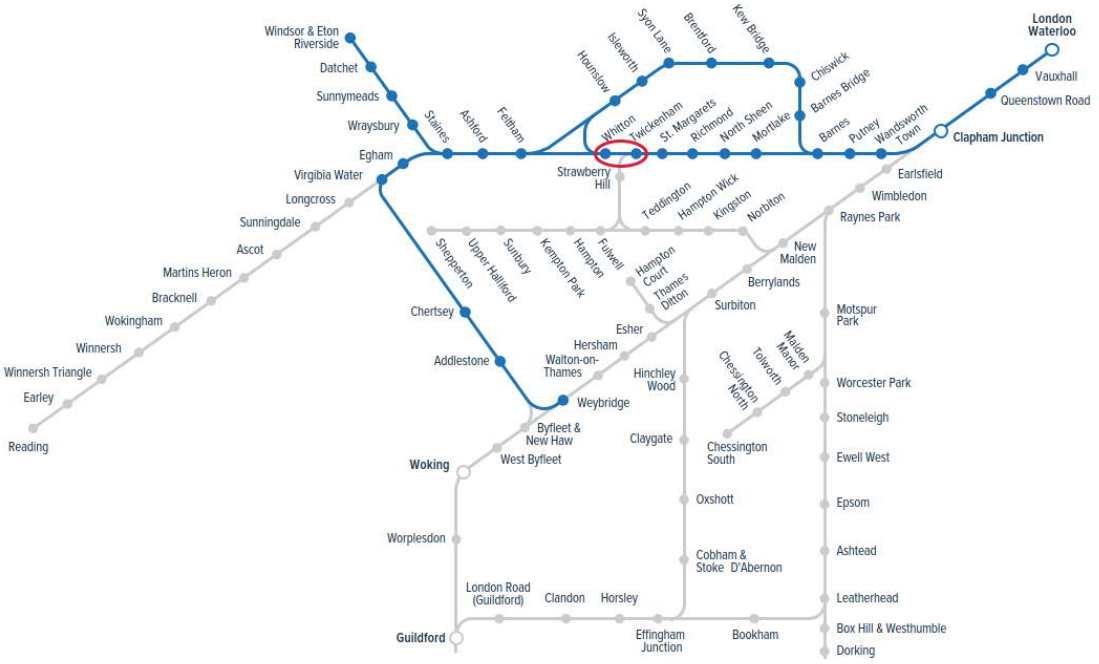
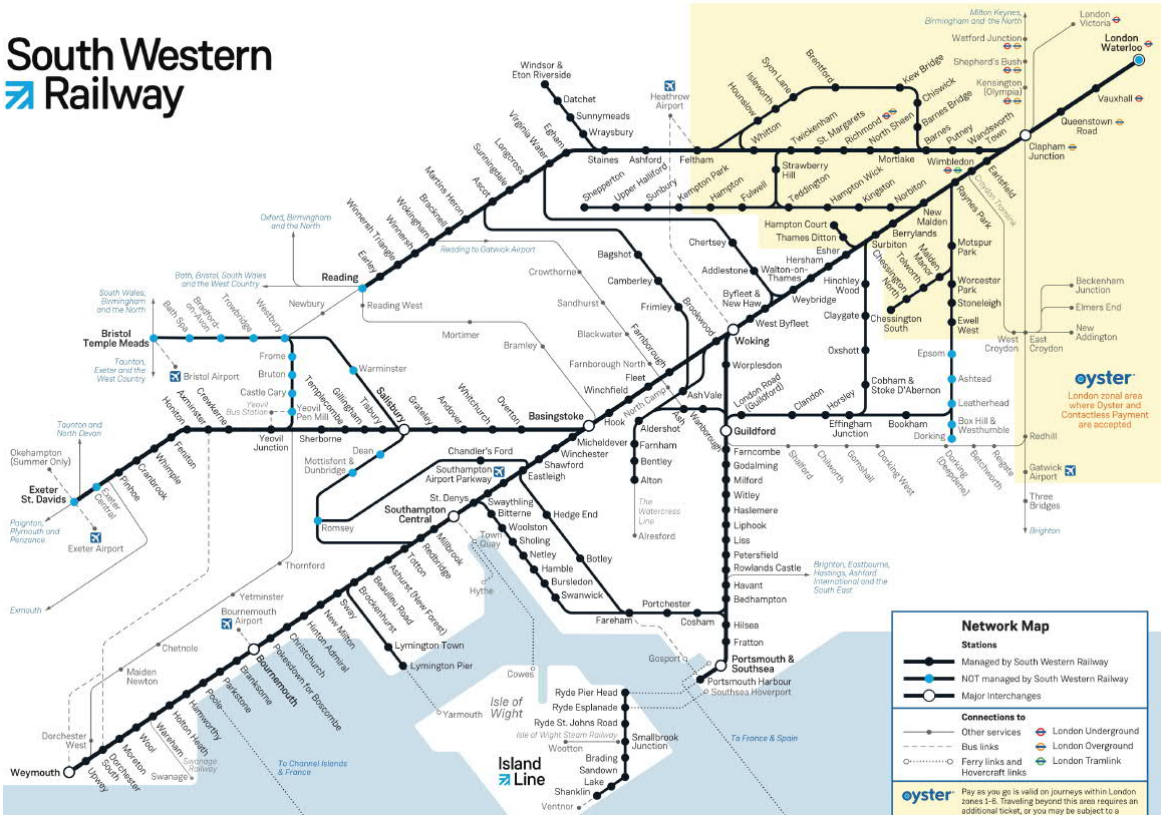


Figure 5-4: Southwestern Railway network map



5.2.11 The rail service and their frequencies are outlined in Table 5-3.

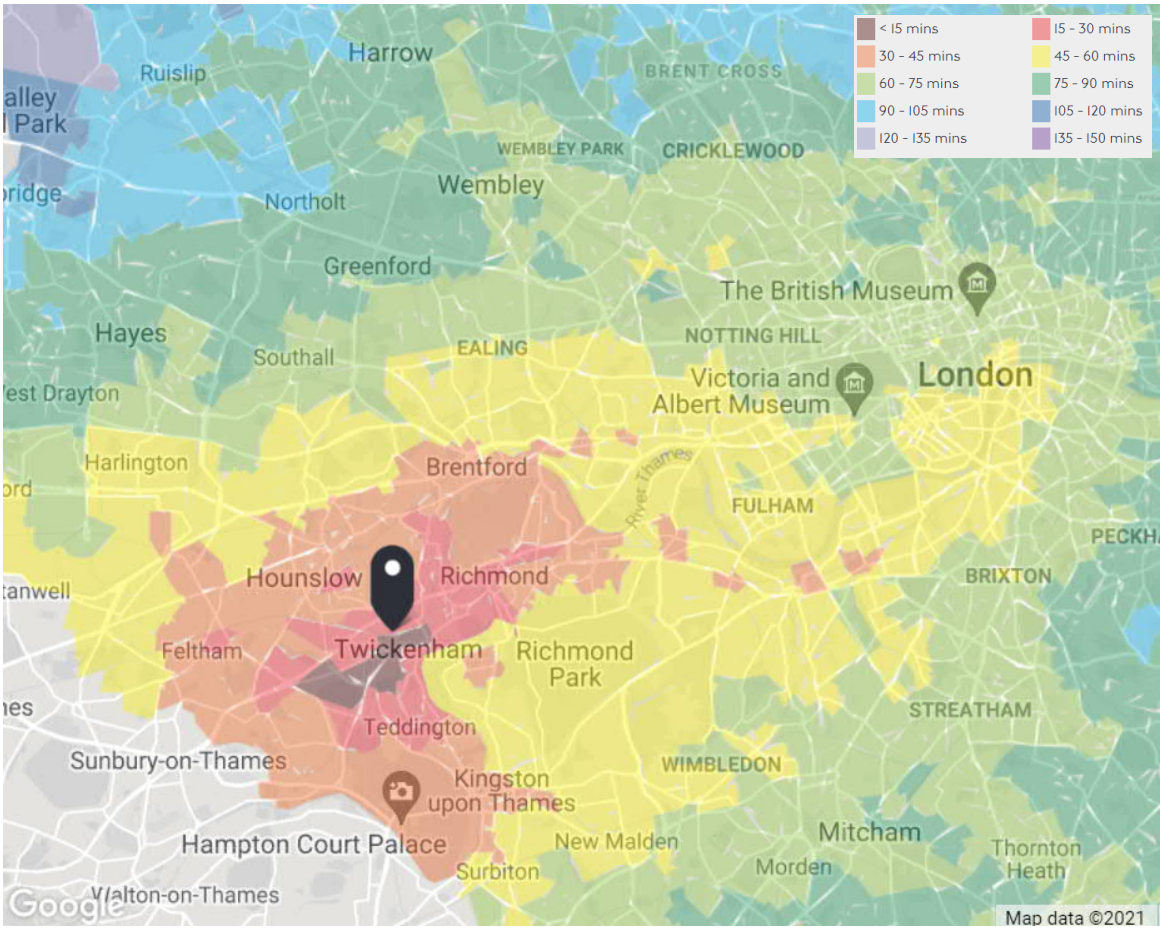
Table 5-3: Summary of Rail Services from Twickenham Station

DIRECTION	FIRST/LAST TRAIN	PEAK SERVICES PER HOUR
London Waterloo	00:11/23:43	10-17
Reading	05:36/23:10	2-4
Chiswick	05:53/23:43	3-5
Windsor and Eton Riverside	05:53/23:52	2
Wimbledon	05:53/23:41	7-10

PUBLIC TRANSPORT TIME MAPPING

5.2.12 Time Mapping (TIM) is a tool developed by TfL within their WebCAT suite of tools to assess connectivity in terms of travel times, taking account of public transport service ranges and interchange opportunities. Time Mapping for the site, travelling by public transport during the AM peak, is presented in Figure 5-5.

Figure 5-5: TIM Mapping



5.2.13 Significant employment opportunities locally and in Central London can be accessed within 45 minutes.

5.3 EXISTING TRIP GENERATION

5.3.1 Given the site is not operational and has been vacant since 2018, it is not possible to undertake surveys to understand the previous levels of traffic generated by the site. However, it is important to assess the proposals not just in the context of the extant baseline conditions but with consideration to the previous industrial use at the site and comparative trends in trip-generation were the site to be operational under the extant permitted use or alternative industrial use.

SITE CONTEXT

5.3.2 When previously operational as Greggs Bakery, the site generated a moderate number of regular daily HGV movements, with instances of conflict where vehicles were passing each other. On the A305 The Green, this is not an issue, but on the residential roads surrounding the site, this has led to:

- Damaged footways and kerbs;
- Concerns about safety for other road users and pedestrians;
- Local complaints of noise and poor air quality (particularly important as the site is not subject to any restrictions and can operate 24 hours a day); and
- Damage to parked cars.

5.3.3 Due to the site's residential setting, the adjoining network of roads does not lend itself to a moderate volume of HGV movements generated by industrial use. Carriageways are narrow at certain points and often flanked by parked cars. There have been regular instances of vehicles mounting the kerb, which is evident by the condition of the pavement and kerb along Marsh Farm Road (which is the route HGVs used to take between the site and the A305 and is indeed reinforced by signage identifying other routes as being unsuitable for HGVs).

COLNE ROAD – SCHOOL STREET

5.3.4 In September 2021, The School Street scheme was approved and made permanent for Twickenham Primary Academy for part of Colne Road between the junction of March Farm Road and Albion Road.

5.3.5 School Streets do not operate during school holidays or at weekends, and the signs will be closed when not operational for holidays and half-term breaks.

5.3.6 Th operating hours for Colne Road are Monday to Friday 08:20 to 09:00, and 15:30 to 16:15.

5.3.7 People walking, scooting, using wheelchairs, mobility scooters, and cycles (including adapted cycles) are not restricted. All other motor vehicles are restricted during the operating times displayed on the signs, subject to exemptions.

5.3.8 The following motorised vehicles are automatically exempt:

- Emergency vehicles
- Council waste trucks serving properties within the School Street zone
- Postal service vehicles serving post boxes within the School Street zone
- Statutory undertakers (such as water and gas companies) attending emergency works within the School Street zone
- School buses serving the school or properties within the School Street zone

- Public transport and taxis (Hackney Carriage) serving properties within the School Street zone

5.3.9 The following vehicles are also exempt, but they must apply for exemption using the LBRuTs online exemption form or contact LBRuT:

- Residents and businesses within the School Street zone
- Blue badge holders (when their destination is within the School Street zone)
- Carers and healthcare workers serving properties within the School Street zone
- Private hire taxis serving properties within the School Street zone
- Tradespeople/service providers serving properties within the School Street
- Delivery vehicles serving properties within the School Street

5.3.10 The introduction of School Street at Colne Road has led to more vehicles accessing Edwin Road during the closure times.

TRIP GENERATION METHODOLOGY

5.3.11 The existing site, when previously operational, would have generated demand for travel by:

- Employees and visitors – office or site-based; and
- Delivery and servicing-related trips.

5.3.12 The industrial site's travel demand has been forecasted using data extracted from the TRICS database. TRICS is a database that holds transport-related surveys from sites across the UK. It is the industry-standard tool used to estimate the effect of the proposed change in land use on transport travel patterns.

5.3.13 The following selection criteria were used to ensure the suitability of comparable survey data sets:

- Comparable location (outer London boroughs);
- Comparable Public Transport Accessibility Level, i.e. PTAL 1 – 4 (within reason and where possible);
- Comparable on-site parking provision; and
- Comparable development type in terms of use class.

5.3.14 The same approach has been applied to both an assessment of the extant permitted Class B2 industrial use and the proposed residential/industrial development, comprising both C3 residential and Class E (formerly B1c) light industrial development.

5.3.15 The following sections apply data from comparable TRICS sites to assess the extant and proposed sites and establish:

- Trip rates are based on "total person" trip rates.
- Trip-generation mode share based on "travel to work census data" for the specific ward in Richmond".
- Multi-modal trip generation based on "total person" trip data.

5.3.16 In order to provide a robust assessment comparison between the residential morning peak hour 08:00-09:00, peak hour trips from the industrial site will be compared during the same time period. However, it is important to note, as shown by the total person trip rates across the day, that a comparable industrial use

to the previous is characterised by shift working and will generate a significant number of trips earlier in the morning and across a longer PM peak. This must be considered when analysing the comparative trip generation for the proposed residential element of the site.

5.3.17 Looking more specifically at modes of travel, it is important to consider the larger vehicle trips that a fully operational industrial site would generate. These HGV trips have been a clear source of neighbourhood conflict for the extant site use.

5.3.18 With regard to employee parking provision at the site when operational as an industrial site, the limited amount of parking resulted in employees parking within the surrounding roads, which prior to 2018 were not part of a Controlled Parking Zone, thus causing issues of high parking stress and conflict with residential car owners in neighbouring streets. Any industrial redevelopment at the site would need to take into account the new CPZ implementation, prohibiting additional parking within the surrounding area, potentially compromising the size of industrial floorspace on-site as a result of a need to provide adequate on-site parking.

5.3.19 As outlined in Section 5.3.2, HGV trips have been a clear source of neighbourhood conflict for the extant site use. As such, it is pertinent to review the projected HGV trips for similar industrial use at the site to consider the impact of an alternative, fully operational industrial site.

EXTANT INDUSTRIAL USE TRIP GENERATION

5.3.20 As the trip generation and modal split methodology for the extant were accepted for the previous application. The same methodology has been used within this analysis.

5.3.21 The TRICS database of B1/B2/B8 surveyed sites contains one outer-London borough site, shown in Table 5-4, which is deemed to be reasonably comparable to the permitted use.

Table 5-4: TRICS Site Selection – Industrial estate use (existing site)

REFERENCE	LOCATION	SURVEY YEAR	GFA (SQM)	PARKING SPACES
BT-02-C-02	Brent	2014	6100	156

5.3.22 The above site, situated in West London, is also a food production facility, similar to the permitted use of the Greggs Bakery site.

EMPLOYEE TRAVEL DEMAND

5.3.23 The corresponding TRICS output showing the weighted average total person trip rates (per 100sqm) has been applied to the extant site's GFA of 7,371sqm (the floor area of the existing buildings on-site) and the forecast total person trips during the AM peak (08:00-09:00), and PM peak (17:00-18:00) are summarised in Table 5-5.

Table 5-5: Existing site – Industrial total person trip rates and trip generation

TIME PERIOD	TOTAL PERSON TRIP RATE (PER 100 SQM)			TOTAL PERSON TRIP GENERATION (7,371 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
06:00	2.672	0.098	2.77	193	7	200
07:00	0.344	0.262	0.606	25	19	44
08:00	0.131	0.066	0.197	9	5	14
09:00	0.164	0.098	0.262	12	7	19
10:00	0.279	0.279	0.558	20	20	40
11:00	0.311	0.23	0.541	22	17	39

TIME PERIOD	TOTAL PERSON TRIP RATE (PER 100 SQM)			TOTAL PERSON TRIP GENERATION (7,371 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
12:00	0.115	0.148	0.263	8	11	19
13:00	0.18	0.197	0.377	13	14	27
14:00	0.148	0.164	0.312	11	12	23
15:00	0.295	0.18	0.475	21	13	34
16:00	1.885	0.18	2.065	136	13	149
17:00	0.066	3.311	3.377	5	239	244
TOTAL	6.59	5.213	11.803	476	377	853

5.3.24 Whilst the TRICS site is comparable in terms of land use, and likely OGV/HGV trip generation, the selected site is located in northwest London (Brent) with a different level of public transport accessibility.

5.3.25 The public transport mode share is dependent on the local transport network, which is more accurately obtained from local Census data. The use of 2011 Census data' WD703EW - Method of travel to work (2001 specification) for the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the total person (i.e. employee or visitor) trips (shown in Table 5-5) by mode.

5.3.26 The modal share has been adjusted to remove those "not in employment" or "working from home", with the percentage share adjusted across the travel modes accordingly. The mode share is shown in Table 5-6.

Table 5-6: 2011 Census data - mode share

RICHMOND WARD 014	PERCENTAGE*
Pedestrians	11%
Cyclists	7%
Bus	17%
Underground	5%
Rail	18%
Taxi	0%
Motorcycle	1%
Vehicle drivers (no servicing)	39%
Vehicle occupants (including taxi passengers)	2%
Total	100%*

(source: WP703EW) *Rounding has occurred

5.3.27 The estimated multi-modal industrial peak hour travel demand based on industrial use of 7,371sqm is outlined in Table 5-7.

Table 5-7: Industrial Site Peak Hour Travel Demand

RICHMOND WARD 014	AM PEAK			PM PEAK		
	Arrive	Depart	Total	Arrive	Depart	Total
Pedestrians	1	1	2	1	26	27
Cyclists	1	0	1	0	17	17
Bus	2	1	2	1	40	41
Underground	0	0	1	0	11	11
Rail	2	1	3	1	44	45
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	0	2	3
Vehicle drivers (no servicing)	4	2	5	2	94	96
Vehicle occupants (including taxi passengers)	0		0	0	5	5
Total	9	5	14	5	239	244

DELIVERIES AND SERVICING TRAVEL DEMAND

5.3.28 A key generator of traffic for industrial sites is OGV/HGV trips. Taking the weighted average OGV/HGV trip rates from these sites and applying these to a notional developable area on the site of 7,371sqm (equivalent to the existing buildings) for an alternative Industrial Use produces the OGV/HGV trips in Table 5-8.

Table 5-8: Existing site – Industrial HGV trip rates and trip generation

TIME PERIOD	HGV TRIP RATE (PER 100 SQM)			HGV TRIP GENERATION (7,371 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
06:00	0.016	0	0.016	1	0	1
07:00	0.049	0.033	0.082	4	2	6
08:00	0.016	0.049	0.065	1	4	5
09:00	0.066	0.033	0.099	5	2	7
10:00	0.066	0.115	0.181	5	8	13
11:00	0.066	0.066	0.132	5	5	10
12:00	0.016	0.033	0.049	1	2	4
13:00	0.066	0.033	0.099	5	2	7
14:00	0.066	0.098	0.164	5	7	12
15:00	0	0.016	0.016	0	1	1
16:00	0.016	0	0.016	1	0	1
17:00	0.016	0	0.016	1	0	1
TOTAL	0.459	0.476	0.935	34	35	69

5.3.29 As the table suggests, the permitted use could be expected to generate around 69 HGV trips during a typical day, notwithstanding further HGV trips prior to 06:00 and beyond 18:00 and smaller LGV trips not indicated in the TRICS assessment. This is considered to be similar to the former Greggs use where HGV's were used for the distribution of goods throughout the day. The forecast also shows the concentration of HGV movements tends to be in the morning and over lunchtime. As with the previous uses on-site, this has the potential to result in vehicle conflicts on the local highway network, which are well-documented.

5.3.30 It is, therefore, reasonable to assume that bringing the site back into industrial use with an alternative tenant or activities does not necessarily overcome any of the historical highway safety issues associated with HGVs on the local road network.

5.4 FUTURE TRIP GENERATION – HOW WILL PEOPLE TRAVEL?

5.4.1 As the trip generation and modal split methodology for the proposed use were accepted for the previous application. The same methodology has been used within this analysis.

5.4.1.1 The proposed development is expected to generate demand for travel by:

- Residents;
- Employees; and
- Visitors.

5.4.2 Delivery and servicing travel demand has been forecast and set out in Section 5.7.

RESIDENTS

5.4.3 The forecast trip generation for the residential units has been established from surveys of comparable sites within the TRICS database, using the following criteria:

- Location: Greater London;
- Survey date range: <6 years old (2016-2019);
- Parking ratio: 0.5 – 1.15 spaces per unit; and
- PTAL: 1b - 3.

5.4.4 Table 5-9 summarises the selected sites, the year the site was surveyed, their respective PTALs and parking ratios.

Table 5-9: TRICS site selection – residential use

REFERENCE	LOCATION	SURVEY YEAR	NUMBER OF DWELLINGS	PTAL	PARKING SPACES	PARKING RATIO
BE-03-M-01	BEXLEY	2019	343	1b	317	0.92
EG-03-M-06	EALING	2017	143	3	91	0.64
EN-03-M-01	ENFIELD	2017	220	1B	234	1.06
GR-03-M-02	GREENWICH	2016	455	1B	287	0.63
HD-03-M-04	HILLINGDON	2016	45	3	40	0.89
HD-03-M-05	HILLINGDON	2017	261	1B	299	1.15
H0-03-M-01	HOUNSLOW	2019	336	2	388	1.15

5.4.5 The associated network peak hour trip generation rates are summarised in Table 5-10.

Table 5-10: Proposed development - residential total person trip rates and trip generation

TIME	TOTAL PERSON TRIP RATES (PER DWELLING)			TOTAL PERSON TRIPS FORECAST (116 DWELLINGS)		
	In	Out	Total	In	Out	Total
AM Peak hour (0800-0900)	0.123	0.575	0.698	14	67	81
PM Peak hour (1700-1800)	0.286	0.156	0.442	33	18	51

5.4.6 The site is expected to generate a total of 81 trips in the AM peak hour and 51 in the PM peak hour.

5.4.7 2011 Census data 'location of usual residence and place of work by method of travel to work' for the middle super output area (MSOA) Richmond Ward 14, shown in Table 5-6, has been used to disaggregate the trips by mode.

5.4.8 The resulting proposed residential travel demand by all modes is shown in Table 5-11.

Table 5-11: Forecast Residential Travel Demand

MODE	AM PEAK HOUR			PM PEAK HOUR		
	In	Out	Total	In	Out	Total
Pedestrians	2	7	9	4	2	6
Cyclists	1	5	6	2	1	4
Bus	2	11	14	6	3	9
Underground	1	3	4	2	1	2
Rail	3	12	15	6	3	9
Taxi	0	0	0	0	0	0
Motorcycle	0	1	1	0	0	1
Vehicle drivers (no servicing)	6	26	32	13	7	20
Vehicle occupants (including taxi passengers)	0	1	2	1	0	1
Total	14	67	81	34	18	51

*Rounding has occurred

5.4.9 It is expected that journeys for non-work purposes, outside of the peak hours, such as education or retail, would be more likely to be made on foot or by bicycle, given the proximity of the site to both Richmond and Twickenham High Streets. As such, the forecast daily car, railway and bus mode shares would realistically be lower than that projected and walking, and cycling trips would be expected to be higher throughout the day and outside of the peak hours (i.e., 08:00 – 09:00 and 17:00 – 18:00).

EMPLOYEES

5.4.10 Whilst the Class E element of the proposed development to the south of the site forms only a very small element of the site's overall area; it is pertinent to consider any vehicle trips generated by proposed commercial use to ensure trip-generation for the proposed development in its entirety is considered.

5.4.11 Following the application of the selection criteria as identified in the trip-generation methodology, details of the TRICS sites selected as comparator sites for the proposed residential land use at the site are summarised in Table 5-12. It is important to note that whilst these comparable commercial sites are clearly much larger than the proposed commercial development, the trip rates are averaged in relation to floor area.

Table 5-12: TRICS site selection – commercial use

REFERENCE	LOCATION	SURVEY YEAR	GFA(SQM)	PTAL
HD-02-A-09	Hillingdon	2018	12,100	4
HO-02-A-01	Hounslow	2017	120,000	1b

5.4.12 As Table 5-13 illustrates, the number of total person trips expected to be generated by commercial use of this size would be minimal and would be of no material impact to the highway and public transport network.

Table 5-13: Proposed development – commercial total person trip rates and trip generation

TIME	TOTAL PERSON TRIP RATES (PER 100SQM)			TOTAL PERSON TRIPS FORECAST 175 SQM COMMERCIAL UNIT		
	In	Out	Total	In	Out	Total
AM Peak hour (0800-0900)	1.645	0.062	1.707	3	0	3
PM Peak hour (1700-1800)	0.085	1.747	1.832	0	3	3

Daily	5.754	5.832	11.586	10	10	20

5.4.13 However, in the interests of providing a robust assessment, the 2011 Census data 'WD703EW - Method of travel to work (2001 specification) for the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the trips to the site by mode. The mode share shown in Table 5-6 has been adjusted to account for the car-free nature of the proposed commercial unit:

- The proposed commercial unit will be car-free with the exception of one Blue Badge Bay.
- The proposed commercial unit will not provide motorcycle parking.
- Bus, underground and rail trips have been uplifted proportionally to reflect the reduction in car and motorcycle trips.
- Cycle and walking trips have not been adjusted.

5.4.14 The resultant mode share, shown in Table 5-14, has been applied to the proposed 175sqm of commercial use.

Table 5-14: Mode share (adjusted) - commercial use

RICHMOND WARD 014	PERCENTAGE*
Pedestrians	11%
Cyclists	7%
Bus	35%
Underground	9%
Rail	38%
Taxi	0%
Motorcycle	Car-free
Vehicle drivers (no servicing)	
Total	100*

*Rounding has occurred

5.4.15 The resultant non-residential (commercial use) travel demand by mode is shown in Table 5-15.

Table 5-15: Proposed development - commercial unit travel demand

MODE	AM PEAK HOUR			PM PEAK HOUR		
	In	Out	Total	In	Out	Total
Pedestrians	0	0	0	0	0	0
Cyclists	0	0	0	0	0	0
Bus	1	0	1	0	1	1
Underground	0	0	0	0	0	0
Rail	1	0	1	0	1	1
Taxi	0	0	0	0	0	0
Total	3	0	3	0	3	3

5.5 PROPOSED DEVELOPMENT - TOTAL TRAVEL DEMAND

5.5.1 The total trip generation for the proposed development is shown in Table 5-16.

Table 5-16: Proposed development - Total trip generation

MODE	AM PEAK HOUR			PM PEAK HOUR		
	In	Out	Total	In	Out	Total
Pedestrians	2	7	9	4	2	6
Cyclists	1	5	6	2	1	4
Bus	3	11	15	6	4	10
Underground	1	3	4	2	1	3
Rail	4	12	16	6	4	11
Taxi	0	0	0	0	0	0
Motorcycle	0	1	1	0	0	1
Vehicle drivers (no servicing)	6	26	32	13	7	20
Vehicle occupants (including taxi passengers)	0	1	2	1	0	1
Total	17	67	84	34	21	54

5.6 NET CHANGE

5.6.1 An assessment has been undertaken based on the respective mode shares for the existing industrial scheme and the proposed residential and commercial schemes combined.

5.6.2 Table 5-17 and Table 5-18 set out the difference between the existing and proposed AM and PM peak hour trips, respectively.

Table 5-17: AM peak hour – Net change

MODE	EXISTING		PROPOSED		NET CHANGE	
	In	Out	In	Out	In	Out
Pedestrians	1	1	2	7	+1	+7
Cyclists	1	0	1	5	+1	+4
Bus	2	1	3	11	+2	+10
Underground	0	0	1	3	+1	+3
Rail	2	1	4	12	+2	+11
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	1	0	+1
Vehicle drivers (no servicing)	4	2	6	26	+2	+24
Vehicle occupants (including taxi passengers)	0	0	0	1	0	+1
Total	9	5	17	67	+8	+62

5.6.3 Table 5-17 shows the proposed residential and commercial development will result in an increase in trips during the AM peak hour. The majority of the additional trips will be outbound journeys travelling for work (commute) or school, which is reflective of the LTDS data set out in Section 2. Two additional inbound and 24 additional outbound car trips are forecast to be generated by the proposed development during the AM peak hour (08:00 -09:00).

Table 5-18: PM peak hour – Net change

MODE	EXISTING		PROPOSED		NET CHANGE	
	In	Out	In	Out	In	Out
Pedestrians	1	26	4	2	+3	-24
Cyclists	0	17	2	1	+2	-15
Bus	1	40	6	4	+5	-36
Underground	0	11	2	1	+1	-10
Rail	1	44	6	4	+5	-39
Taxi	0	0	0	0	0	0
Motorcycle	0	2	0	0	0	-2
Vehicle drivers (no servicing)	2	94	13	7	+11	-87
Vehicle occupants (including taxi passengers)	0	5	1	0	+1	-4
Total	5	239	34	21	+29	-218

5.6.4 Table 5-18 shows the proposed residential and commercial development will result in an overall reduction of 189 trips during the PM peak hour, which will be made up of an increase in 29 inbound trips and a reduction of 218 outbound trips.

5.6.5 The proposed development will result in a reduction of 78 car trips (i.e., an additional 11 inbound and a reduction of 87 outbound car trips) during the PM peak hour.

5.7 SERVICING TRIP GENERATION

EXTANT SITE USE

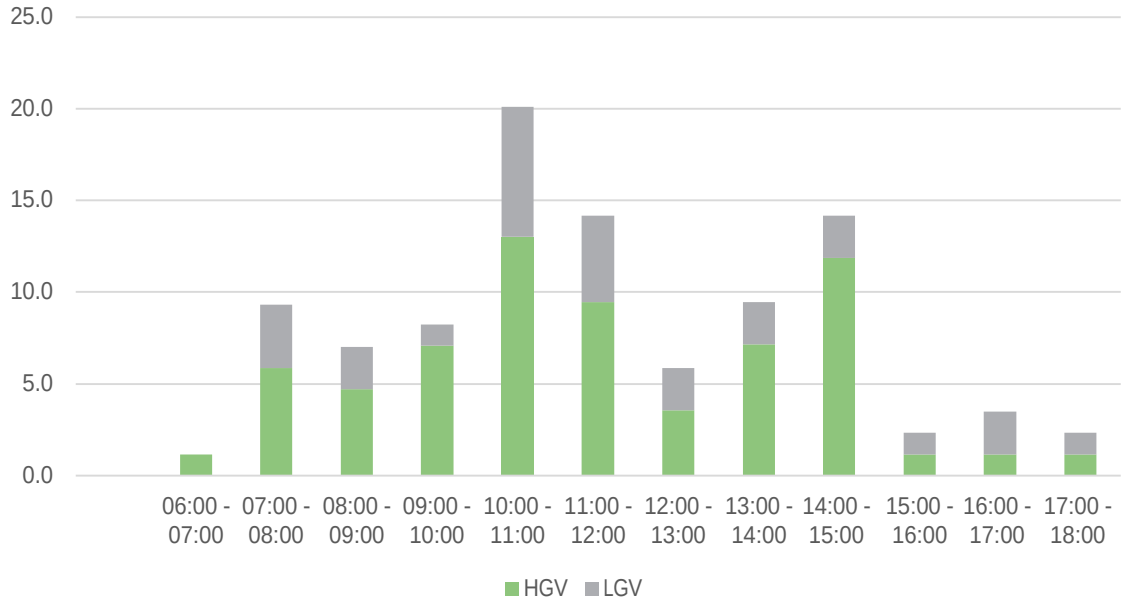
5.7.1 Given the site has been vacant and not operational since 2018, it is not possible to undertake surveys to understand the previous levels of traffic generated by the site.

5.7.2 Table 5-19 shows the likely number of delivery and servicing (OGV/HGV) trips forecast to have been generated by the Greggs Bakery site when previously operational.

Table 5-19: Delivery and servicing trip rates for the existing site

Time Period	OGV			LGV		
	Arrive	Depart	Total	Arrive	Depart	Total
06:00 - 07:00	0.016	0.000	0.016	0.000	0.000	0.000
07:00 - 08:00	0.049	0.032	0.081	0.032	0.016	0.048
08:00 - 09:00	0.016	0.049	0.065	0.016	0.016	0.032
09:00 - 10:00	0.066	0.032	0.098	0.016	0.000	0.016
10:00 - 11:00	0.065	0.115	0.180	0.049	0.049	0.098
11:00 - 12:00	0.066	0.065	0.131	0.033	0.032	0.065
12:00 - 13:00	0.016	0.033	0.049	0.016	0.016	0.032
13:00 - 14:00	0.066	0.033	0.099	0.016	0.016	0.032
14:00 - 15:00	0.066	0.098	0.164	0.016	0.016	0.032
15:00 - 16:00	0.000	0.016	0.016	0.016	0.000	0.016
16:00 - 17:00	0.016	0.000	0.016	0.000	0.032	0.032
17:00 - 18:00	0.016	0.000	0.016	0.000	0.016	0.016
TOTAL	0.458	0.473	0.931	0.210	0.209	0.419

Figure 5-6: Existing site - servicing demand



5.7.3 Whilst the site was operational as Greggs Bakery, the site generated a number of regular daily HGV movements, with instances of conflict where large vehicles were passing each other. On the A305 The Green, this is not an issue, but on the residential roads surrounding the site, this can and has led to:

- Damaged footways and kerbs;
- Concerns about safety for other road users and pedestrians;
- Local complaints of noise and poor air quality (particularly important as the site is not subject to any restrictions and can operate 24 hours a day); and
- Damage to parked cars.

5.7.4 Due to the site's residential setting, the adjoining network of roads does not lend themselves to medium-volume HGV movements. Carriageways are in parts, narrow and often flanked by parked cars. There have been regular instances of vehicles mounting the kerb, as illustrated by the condition of the pavement and kerb along Marsh Farm Road (which is the route HGVs used to take between the site and the A305 and is indeed reinforced by signage identifying other routes as being unsuitable for HGVs).

5.7.5 The regular presence of HGVs on a narrow residential road network poses a heightened risk of conflict with pedestrians and other road users. The proposed floor area considers the types/size of vehicles that the proposed light industrial use will generate without detriment to the local area and highway safety.

5.7.6 One of the key benefits in transport terms of delivering a residential-led scheme compared to its previous use as an industrial factory is a substantive reduction in the number of HGV movements and the associated highway safety benefits of this on the surrounding residential streets.

PROPOSED DEVELOPMENT

5.7.7 The TRICS database has been used to forecast servicing demands. Daily servicing trip generation rates are set out within Table 5-20, and a daily profile of the exacted servicing demands at the proposed development is provided in Figure 5-7. On average, a total of 14 LGV and 3 HGV deliveries per day are expected to be generated by the residential units and commercial units, with up to four in a given hour.

Table 5-20: Delivery and servicing trip rates for the residential and commercial uses

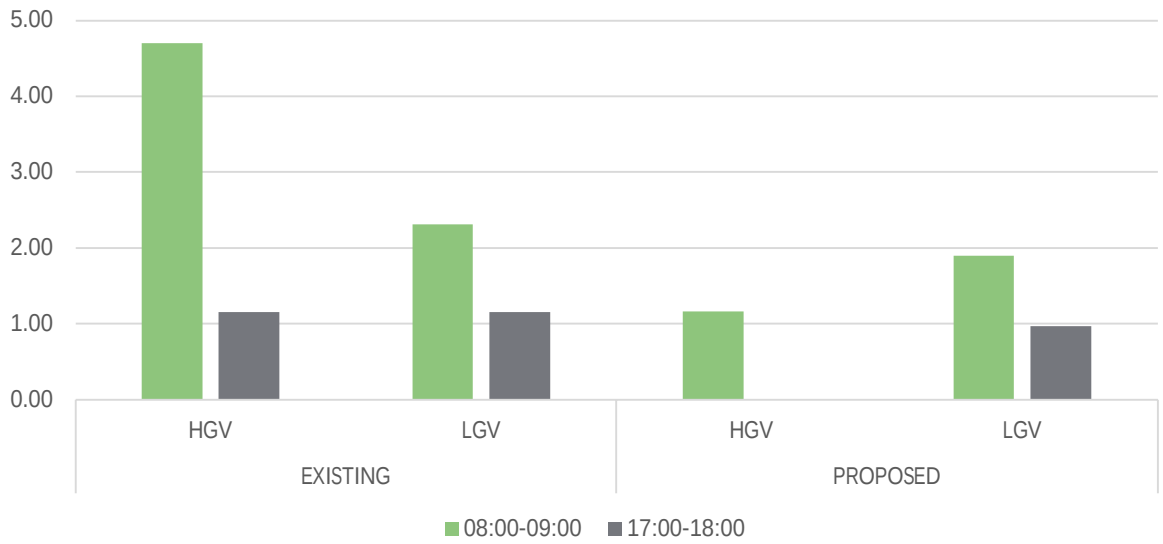
HOUR	RESIDENTIAL - TRIP RATES PER DWELLING		COMMERCIAL TRIP RATES PER 100 SQM	
	LGV	HGV	LGV	HGV
07:00-08:00	0.016	0.004	0.016	0.001
08:00-09:00	0.016	0.004	0.022	0.004
09:00-10:00	0.019	0.002	0.019	0.004
10:00-11:00	0.019	0.002	0.013	0.005
11:00-12:00	0.019	0.003	0.042	0.004
12:00-13:00	0.024	0.002	0.025	0.001
13:00-14:00	0.031	0.003	0.028	0.000
14:00-15:00	0.019	0.002	0.016	0.000
15:00-16:00	0.016	0.002	0.018	0.000
16:00-17:00	0.019	0.000	0.014	0.000
17:00-18:00	0.008	0.000	0.025	0.000
18:00-19:00	0.012	0.002	0.008	0.000
19:00-20:00	0.012	0.000	0.004	0.000
20:00-21:00	0.007	0.002	0.002	0.000

Figure 5-7: Proposed development - forecast servicing demand

NET DIFFERENCE – SERVICING TRIPS

5.7.8 Figure 5-8 shows the servicing demand generated in the peak hours by the existing and proposed development sites.

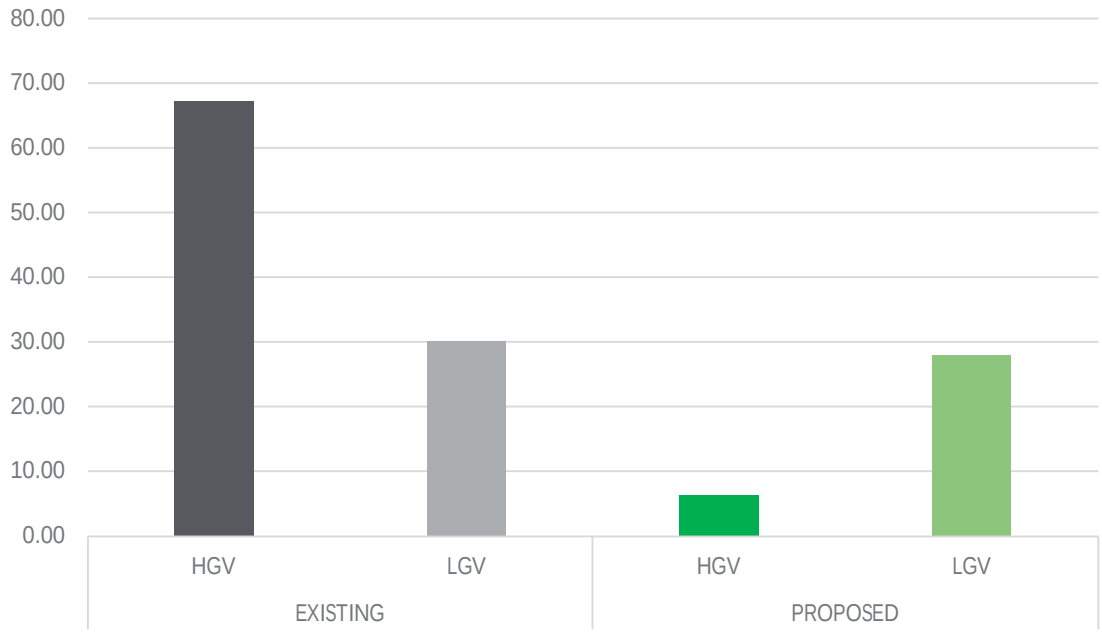
Figure 5-8: Extant vs proposed development servicing demand – peak hours



5.7.9 Figure 5-8 shows the proposed development will result in a reduction of four HGVs in the AM peak hour and one HGV in the PM peak hour.

5.7.10 Figure 5-9 shows the daily servicing demand generated by the existing and proposed development sites.

Figure 5-9: Existing site vs proposed development servicing demand – daily



5.7.11 One of the key benefits in transport terms of delivering a residential scheme on this site compared to its previous use as a Greggs bakery/factory is a substantial reduction in the number of HGV movements. This is evident in Figure 5-9, which shows the proposed development will result in a reduction of 61 HGVs and 2 LGVs across the day.

5.7.12 In comparison to industrial/food production use, a residential-led scheme on the site will almost entirely eliminate daily HGV trips, which have been identified as a source of great conflict in the site's largely residential area.

5.7.13 Occasional deliveries of white goods and furniture, for example, or indeed removals lorries may add an additional HGV onto the local network.

5.8 SENSITIVITY TEST – FULL INDUSTRIAL

5.8.1 A sensitivity test is contained within APPENDIX F, which reviews a fully commercial or industrial scheme on the site and considers if the impacts could be adequately mitigated and whether such schemes might be acceptable from a highway safety perspective.

5.8.2 Employment use on the site would generate two impacts:

- Local traffic and parking pressures; and
- Safety issues associated my multiple HGVs using the local road network at the same time.

5.8.3 An E(g)(i) commercial scheme would result in a reasonably high trip generation and parking demand generated by the number of employees that could possibly be accommodated on the site and the modest PTAL. The high trip generation and parking demand have the potential to result in localised congestion during the morning and evening peak hours, as well as generating overspill parking demand on surrounding streets if sufficient supply is not provided on-site. The immediate area is within a CPZ, but there are roads slightly further away which do not have any form of parking control. People are willing to park further away from their workplace than they do their home, so the potential impact on these uncontrolled streets is likely to be worse than a residential scheme.

5.8.4 A full B2 industrial scheme impacts are less to do with trip generation and local parking issues as employment density would be lower. The impacts associated with a B2 use on the site have more to do with highway safety on the local residential streets. When the site was operating as a Greggs factory, there were frequent instances of HGVs not being able to pass each other on the local roads and having to either backup or mount the footways. Both activities compromise highway safety, especially mounting the kerb.

5.8.5 Anecdotal evidence from residents also identifies some of the damage to property that occurred as a result of too many HGVs using the roads. One neighbour explained that her car had to be written off after an HGV entering the site scraped past it where there was insufficient width.

5.8.6 Any use of the site will certainly result in the occasional HGV movement from the refuse collection or larger rigid vehicles, but the concentration of both HGV and LGVs associated with industrial use has historically caused safety issues. It is likely that if the site were brought into industrial use again, this issue would likely continue.

5.8.7 With any concentration of B1 or B2 on the development site, there are no obvious measures to mitigate the highway risks. The recent introduction of the CPZ highlights those local residents suffered from parking pressures, and increasing the parking capacity on local residential streets is extremely difficult and often impossible. The impacts of multiple HGVs using the local roads are also very difficult to mitigate where there is no scope to widen roads and dedicated HGV routes are already signed.

5.8.8 In summary, the re-introduction of significant employment uses on the site from a highway's perspective would be unacceptable, unsafe and extremely difficult to mitigate.

5.9 WHAT IMPACT WILL THERE BE?

PEDESTRIANS

5.9.1 The site is readily accessible on foot, as detailed through the Active Travel review in Section 4 of this report. In terms of the development proposals, connectivity throughout the site will be enhanced by the delivery of the internal site road, which will act as a shared surface, facilitating a safe, viable and cohesive arrangement between vehicles, cycles and pedestrians.

5.9.2 The development is forecast to generate around nine and six two-way main-mode pedestrian trips in the AM and PM peak hours, respectively. It will generate a number of other walk trips associated with people walking (as a secondary mode trip), to and from other public transport stations and stops (i.e., their main mode), with around 35 and 23 two-way associated walking trips in the AM and PM peak hours respectively. This is considered to be a negligible number of trips from the existing baseline.

5.9.3 The local pedestrian infrastructure is considered to be of good quality. The shared surface within the site will encourage walking trips and enhance connectivity to the surrounding residential streets.

CYCLE IMPACT

5.9.4 The development is forecast to generate around six and four two-way main-mode cycling trips in the AM and PM peak hours, respectively. This is considered to be a negligible number of trips and does not represent a significant increase from the existing baseline, irrespective of comparison to previous industrial use.

HIGHWAYS IMPACT

5.9.5 The proposals will provide a number of associated on-site parking spaces for residents. Table 5-21 outlines the projected number of car trips compared against the existing baseline, notwithstanding the number of car trips associated with the previous site when fully operational or indeed a similar industrial use.

Table 5-21: Forecast peak hour car trips (residential) - proposed development

MODE	AM PEAK HOUR			PM PEAK HOUR		
	In	Out	Total	In	Out	Total
Existing site – Car trips	4	2	5	2	94	96
The proposed development – Car trips*	6	26	32	13	7	20
Net difference	+2	+24	+27	+11	-87	-76

*excluding servicing trips

5.9.6 Based on the 2011 Census data for travel to work, the proposed development could expect to add around 27 car trips in the morning and reduce car trips by 76 cars in the evening peak.

5.9.7 This level of car or van trips generated by the proposed residential-led mixed-use development is not deemed to represent a significant or detrimental level of increase which would compromise the local road network.

PUBLIC TRANSPORT IMPACT

The impact of passengers per service on the total public transport trips associated with the proposed development has been considered. The public transport trips per mode are shown in Table 5-22.

Table 5-22: Forecast additional public transport trips during the peak hours

MODE	AM PEAK HOUR			PM PEAK HOUR		
	In	Out	Total	In	Out	Total
Bus	+3	+11	+15	+6	+4	+10
Underground	+1	+3	+4	+2	+1	+3
Rail	+4	+12	+16	+6	+4	+11

5.9.8 It is expected that underground trips are the main mode, and these trips are likely to be undertaken via rail or bus services as a first mode prior to interchanging for underground services. The projected number of trips during the AM and PM peak hours is considered to be minimal and does not merit a comprehensive distribution assessment.

5.9.9 In order to assess distribution, an assessment has been made for each travel mode to project the number and direction of trips onto the network during the AM and PM peak periods as a result of the proposals. Based on the travel to work census projections for the ward, the train is expected to be the most commonly used mode of public transport, with residents able to access both Strawberry Hill and Twickenham Station, which are connected to bus routes in the proximity of the site and also within a reasonable walking distance.

5.9.10 For robustness, the distribution of buses (the nearest travel mode to the site) and trains (the projected majority mode of travel) have been forecast to assess the prospective impact on future capacity as a result of the development.

5.9.11 Trips generated by the proposed development have been distributed across the nearby public transport network. As is the case with any trip distribution exercise, a number of assumptions and limitations apply, which vary depending on the method employed and source data. In this case, given the scale of the development and trip distribution, it is deemed appropriate not to use strategic transport models to help inform the trip distribution.

BUS DISTRIBUTION

5.9.12 The proposed residential development is expected to generate bus trips. In order to assess future projected distribution, data from the 2011 Census has been used to inform the distribution of residents.

5.9.13 Table 5-23 provides a summary of bus trips onto the network. The expectation is that the majority of bus trips in the morning peak will be eastbound (EB) towards Richmond, Twickenham and Richmond Station, with the 110, 490 and H22 bus services operating from stops to the north of Twickenham Green, the nearest to the site. As such, the bus trip distribution, based on census calculations, has been split accordingly across these three bus routes, taking into account the number of peak hour services for each route.

Table 5-23: Bus peak hour service and direction – Trip distribution

SERVICE	DIRECTION	OUTBOUND			INBOUND		
		Direction Split (%)	AM	PM	Direction Split (%)	AM	PM
Eastbound (EB)		80%	9	3	20%	1	1
Westbound (WB)		20%	2	1	80%	3	5
110	EB	10%	1	0	5%	0	0
	WB	5%	1	0	10%	0	1
490	EB	40%	4	2	10%	0	1
	WB	10%	1	0	40%	1	2
H22	EB	30%	3	1	5%	0	0
	WB	5%	1	0	30%	1	2

5.9.14 As the calculations show, the number of additional bus passenger trips generated is clearly negligible.

RAIL DISTRIBUTION

5.9.15 Twickenham Railway Station serves several major stations, including both London Waterloo and Reading. As outlined in the site accessibility, the majority of peak hour trains travel to London Waterloo with up to 17 services between 0800-0900 on a weekday.

5.9.16 Based on the proposed public transport trip-generation, there are expected to be 12 outbound train trips and three outbound London Underground trips, which are likely to travel by train as their first mode of transport in the AM peak hour. This equates to 15 trips by train (first mode) in the AM peak and six trips (first mode) in the PM peak.

5.9.17 Assessing a "worst-case" scenario, whereby all 12 additional AM peak hour person train trips and 3 London Underground trips will be travelling eastbound towards Waterloo, would equate to an average of 0.908 person trips (i.e., less than one person) per service during the AM peak, with less than one person per service (0.329 person trips per service) during the PM peak. This is clearly a negligible impact, and in reality, several people could be travelling Westbound from Twickenham towards Reading, Windsor and Wimbledon.

SUMMARY

5.9.18 The impacts of the development on the London-wide network are expected to be negligible. The proposed development is located in an area with public transport routes and high-frequency services, which can accommodate the relatively low number of development trips without perceptible impact. No changes to the public transport network are proposed or necessary as part of the proposed development.

5.9.19 The Covid-19 crisis had profound effects on travel patterns. The precise impacts of this are not known at this time, but the following changes are expected over the medium and long term:

- A sustained increase in the proportion of the population who will work from home; and
- More flexible working hours allow more people who need to travel to work to do so outside of the peak hours.

5.9.20 These elements are likely to reduce, perhaps significantly, the trips made during the network peak hours.

5.10 MANAGEMENT MEASURES AND PLANS

5.10.1 Several management plans are proposed to enable the proposed development's safe, sustainable, and efficient operation.

ACCESS MANAGEMENT

5.10.2 The management of the site's accesses will be essential to minimise the unnecessary presence of vehicles on-site and prevent idling vehicles on Crane Road/Gould Road and Edwin Road.

5.10.3 The following measures are proposed to aid the management of and reduce the number of delivery and servicing trips generated by the development:

- Addressing (i.e., for the different blocks);
- Wayfinding signage to encourage the use of safe pedestrian and cycle routes through the sites;
- The layout of the development site could facilitate deliveries by cargo bike, which would help to reduce the number and presence of delivery and servicing vehicles accessing the site;
- Resident welcome packages (including information on deliveries for new tenants and employees;
- A Parking and Design Management Plan (PDMP) has been prepared and is submitted alongside this TA; and
- A Delivery and Servicing Plan (DSP) has been prepared and submitted alongside this TA.

DELIVERY AND SERVICING PLAN

5.10.4 An outline DSP has been produced to support the planning application as a standalone document to manage refuse, delivery, and service vehicle arrangements. The DSP sets out a range of strategies and measures to ensure the site can be serviced efficiently and safely without inconveniencing others.

5.10.5 A section of the outline DSP includes information on the proposed waste management strategy for the site, which describes the waste arisings and provisions for storage per land use. The strategy details collection arrangements.

PARKING DESIGN AND MANAGEMENT PLAN

5.10.6 A Parking Design and Management Plan (PDMP) has been prepared to describe the proposed car parking, Blue Badge parking provision, long-stay cycle parking, and short-stay cycle parking that the proposed development will deliver. The PDMP will set out the access arrangements and enforcement measures to prevent vehicle and cycle parking misuse across the site.

FRAMEWORK TRAVEL PLAN

5.10.7 A Framework Travel Plan (FTP) has been prepared, which sets out a range of preliminary management strategies and measures to support and encourage sustainable travel.

5.10.8 The overall objective is to minimise the impact of travel and promote sustainable travel choices.

5.10.9 A vital measure of the Framework Travel Plan is implementing an on-site car club, allowing residents occasional access to a car when required but avoiding the encouragement of private car trips. It is expected that residents will be offered free membership of the car club for five years.

CONSTRUCTION LOGISTICS PLAN

5.10.10 Further information about construction is provided in the Outline Construction Logistics Plan (CLP), which accompanies this application. A summary of the document is contained in Section 6.11.1. Ahead of demolition and construction, a contractor will be appointed to prepare a Full/Detailed CLP prepared to discharge relevant planning conditions.

6 RICHMOND UPON THAMES – LOCAL BOROUGH ANALYSIS

6.1 INTRODUCTION

6.1.1 This section sets out how the development delivers local planning policy and addresses specific local issues such as on-street parking and the operation of the local road network.

6.2 LOCAL POLICY DELIVERY

6.2.1 The statutory development plan for the London Borough of Richmond upon Thames consists of:

- The London Plan (March 2021);
- The London Borough of Richmond upon Thames Local Plan (July 2018)

6.2.2 In addition to the Development Plan, the following planning policy and guidance documents are material considerations in the determination of the application:

- The National Planning Policy Framework (NPPF);
- The National Planning Policy Guidance (NPPF);
- London Borough of Richmond upon Thames Supplementary Planning Guidance.

LB RICHMOND LOCAL PLAN (JULY 2018)

6.2.3 The London Borough of Richmond upon Thames Local Plan sets out the strategic framework for the borough from 2018 to 2033. The Local Plan contains the strategic vision and objectives for the borough, as well as the policies and site allocations that will guide the future development of the borough.

6.2.4 There are three key strategic objectives of the Local Plan, the guidance within which sets out the key sustainability issues facing the borough and the key principles through which to deliver change:

- Protecting Local Character
- A Sustainable Future
- Meeting Peoples Needs

6.2.5 The strategic objectives of the Local Plan have been considered through both the design and approach to transport in the development proposals.

6.2.6 Encouraging sustainable transport, walking and cycling forms a key focus within the borough's approach to "A Sustainable Future", as outlined in Chapter 3 of the Spatial Strategy, some relevant sections of which are outlined herein:

> "To reduce environmental impacts, including air pollution and congestion, and to maximise opportunities for health and promote active lifestyles, the Council will continue to work with its partners to improve and promote safe, sustainable and accessible transport choices, including public transport, cycling and walking. Focusing on development in the main centres of the borough (i.e. Richmond and Twickenham as well as Teddington, East Sheen and Whitton) will result in sustainability benefits, including a reduction in the need to travel by car and also mitigate the effects of development pressure on the rest of the borough. A main element of the Spatial Strategy is to promote cycling and walking, which contribute significantly towards creating an attractive and pleasant environment, which has been shown to be not only beneficial to an individual's health and social life but also to bring economic benefits; to the borough's centres."

6.2.7 In considering suitable locations for housing development, the Local Plan outlines a clear emphasis on utilising brownfield sites in areas of good transport accessibility in meeting the borough's housing target, the relevant sections for which are extracted herein:

> The housing target for the borough is set out in the London Plan, with 315 dwellings per annum to be provided for the period of 2015-2025. The Mayor of London will expect the Council to exceed this target. This Spatial Strategy and the policies of the Local Plan identify opportunities for development to come forward by optimising the use of sites, particularly in centres with good public transport accessibility and mixed-use redevelopments.
>
> The Local Plan is informed by an up-to-date borough-wide Strategic Housing Market Assessment (SHMA). This considers and assesses the local housing needs and has informed the housing policies as set out in this Plan. Affordable housing is a priority in the borough and is key to delivering the Spatial Strategy and the relevant strategic objective. Therefore, the Council will pursue all opportunities to maximise affordable housing through a range of measures, including providing more choice in the different types of affordable housing with the aim to provide for different levels of affordability.

6.2.8 Residential-led development within the borough is also guided by the Council's Monitoring Report on Housing:

> "This demonstrates that the Council can continue to meet its strategic housing target without building on or using greenfield sites. New housing will therefore be provided through redevelopment and optimising the use of brownfield sites. Higher density development will be sought in more sustainable locations, such as the borough's centres and areas better served by public transport, subject to compatibility with the surroundings and local context, respecting the quality, local character, including heritage value, and amenity of existing neighbourhoods and villages."

6.2.9 The relevant transport policies set in the Local Plan are as follows:

POLICY LP 44 - SUSTAINABLE TRAVEL CHOICES STATES:

6.2.10 The Council will work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development, including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment. The Council will:

> "A. Location of development

Encourage high trip generating development to be located in areas with good public transport with sufficient capacity, or which are capable of supporting improvements to provide good public transport accessibility and capacity, taking account of local character and context.

B. Walking and cycling

Ensure that new development is designed to maximise permeability within and to the immediate vicinity of the development site through the provision of safe and convenient walking and cycling routes and to provide opportunities for walking and cycling, including through the provision of links and enhancements to existing networks.

C. Public transport

Ensure that major new developments maximise opportunities to provide safe and convenient access to public transport services. Proposals will be expected to support improvements to existing services and infrastructure where no capacity currently exists or is planned to be provided. Protect existing public transport interchange facilities unless suitable alternative facilities can be provided, which ensure the maintenance of the existing public transport operations. Applications will need to include details setting out how such re-provision will be secured and provided in a timely manner.

D. The road network

Ensure that new development does not have a severe impact on the operation, safety or accessibility to the local or strategic highway networks. Any impacts on the local or strategic highway networks arising from the development itself or the cumulative effects of development, including in relation to on-street parking, should be mitigated through the provision of, or contributions towards, necessary and relevant transport improvements.

In assessing planning applications, the cumulative impacts of development on the transport network will be taken into account. Planning applications will need to be supported by the provision of a Transport Assessment if it is a major development, and a Transport Statement if it is a minor development."

E. River Transport

Encourage the use of the River Thames for passenger and freight transport through the protection of, improvement to, and provision of new relevant infrastructure, including wharves, slipways and piers.

F. Safeguarding of routes and facilities

Land required for proposed transport schemes as identified in the London Plan and the Council's Local Implementation Plan for Transport will be protected from developments which would prevent their proper implementation.

Local filling stations and supporting services such as car repair facilities will be protected from redevelopment for alternative uses unless exceptional circumstances can be demonstrated that warrant their loss.

POLICY LP45 - PARKING STANDARDS AND SERVICING STATES:

6.2.11 The Council will require new development to make provision for the accommodation of vehicles to provide for the needs of the development while minimising the impact of car-based travel, including on the operation of the road network and local environment and ensuring making the best use of land. It will achieve this by:

> "Requiring new development to provide for car, cycle, 2 wheels and, where applicable, lorry parking and electric vehicle charging points. Opportunities to minimise car parking through its shared use will be encouraged."

6.2.12 The parking standards as referred to in Policy LP45 are detailed for each use class in Appendix 3 of the Local Plan, the approach to which is outlined in Section 11.2.1:

11.2.1 -The borough has high levels of car ownership and use within fairly densely development residential areas with some narrow streets and many older houses without off-street parking. This has led to high levels of on-street parking, worsened in areas where there is a demand for commuter parking. The standards set are maximum parking levels and car parkin provision should not be provided at a level less than these standards unless an exceptional circumstance is demonstrated. This approach aims to ensure that sufficient on-site car parking is provided to meet the needs of the occupiers of the new development, but also to ensure that excessive on-street parking demand is not created, which could have an adverse impact on local highway/traffic conditions, street scene and impacts on making the best use of land.

6.2.13 The maximum car parking and minimum cycle parking standards for the Class E (formerly B1 and B1c) commercial uses and C3 residential use classes as outlined in the Local Plan are indicated in Table 6-1.

Table 6-1: - Richmond Local Plan Parking Standards

USE	CAR PARKING STANDARD	CYCLE PARKING STANDARD
Residential (C3)	PTALs 0-3: 1-2 bedroom, 1 space PTALs 0-3: 3+ bedrooms, 2 spaces PTAL's 4-6: as per London Plan, although local circumstances, CPZ times and on-street parking conditions will need to be assessed	As per London Plan
B1	As per London Plan Servicing to be provided off-street unless in town or district centre	As per London Plan

6.2.14 The local plan advises those cycle parking standards to coincide with the London Plan, March 2021.

LB RICHMOND 'TRANSPORT' SUPPLEMENTARY PLANNING DOCUMENT (JUNE 2020)

6.2.15 LBRT'S 'Transport SPD' was published in June 2020 to assist in promoting "best practices in transport provision and highway design".

6.2.16 The SPD confirms that Transport Assessments and Travel Plans should be submitted in accordance with Transport for London guidance.

6.2.17 In terms of scope of assessment, all development should demonstrate its sustainable credentials and provide high-quality walking and cycling permeability and connectivity within the surrounding highway and transport network. All development should be designed with a hierarchy of streets that ensures priority is given to non-car pedestrians, cyclists and those with disabilities.

6.2.18 The proposed development seeks to implement a scheme with pedestrian priority, with all streets providing shared use with no priority to car traffic. The proposals include a low level of parking provision to discourage car use, with excellent connections to be provided to existing pedestrian/cycle infrastructure in all directions.

6.2.19 The following additional key aspects should be considered as part of all development proposals:

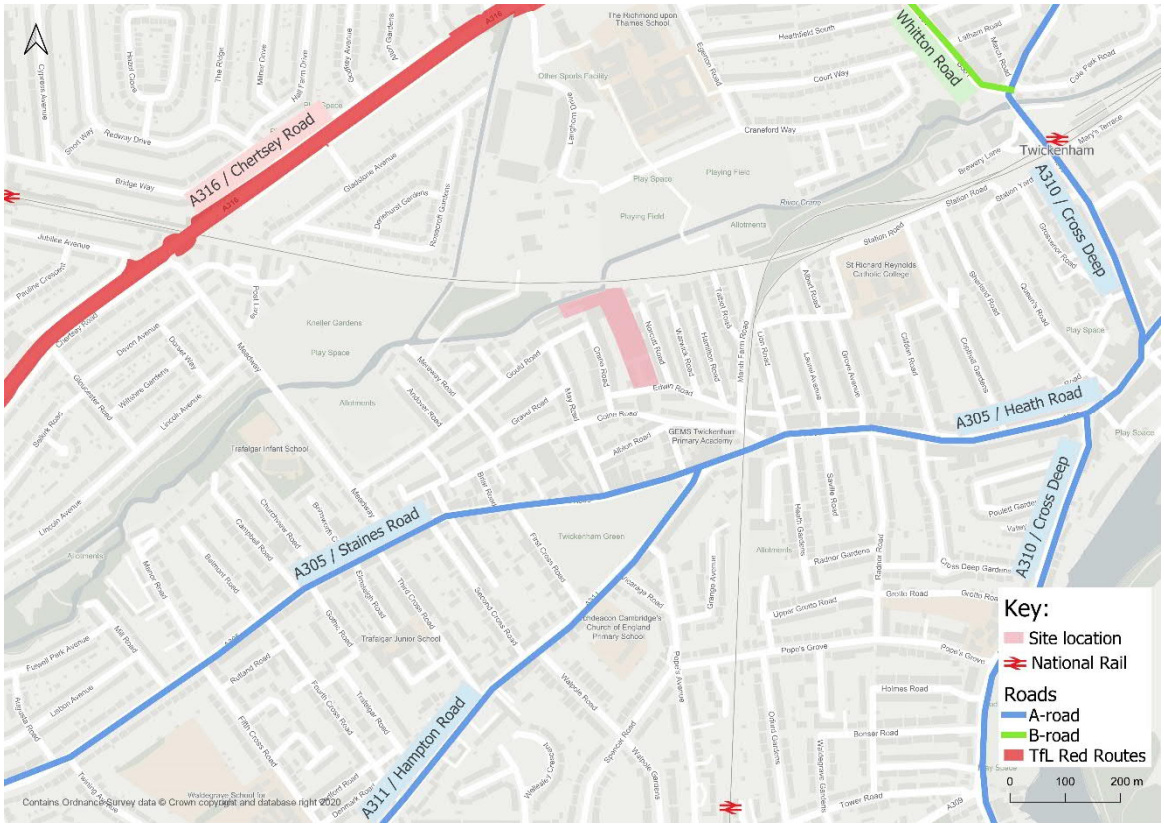
- Cycle parking is to be provided in accordance with the London Plan, with consideration of the London Cycle Design Standards in forming the layout and connectivity by bike. Cycle parking should include provisions for inclusive cycles, cargo bikes and tricycles;
- The Council encourages the use of car clubs as an alternative to private car ownership, and the provision of car club parking and/or enrolling new occupants of development into a car club will help reduce the site parking requirement;
- Car parking should be provided in accordance with the London Plan standards. Development should make provision for a future of 100% 'active' electric vehicle charging provisions.

6.2.20 In addition to the above considerations, the internal layout of the site has been considered in line with the SPD's guidance on vehicle crossovers, parking layouts and front gardens and visibility and sightlines.

6.3 LOCAL HIGHWAY NETWORK

6.3.1 The local highway network in the vicinity of the site is shown in Figure 6-1.

Figure 6-1: Local Highway Network



6.3.2 There are currently two vehicular access points to the site: one from Edwin Road to the south and one to the north from the corner of Gould Road and Crane Road. The former was primarily used to accommodate larger operational HGVs associated with the site's former industrial use, with the latter generally used for employee and visitor parking.

6.3.3 Both Edwin Road and Gould Road are well connected to the wider road network. To the south of the site, Edwin Road connects through Marsh Farm Road or Colne Road to the A305 The Green / Heath Road, carrying traffic between Richmond and Twickenham centres from the A316 Chertsey Road to the west, which in turn connects to M3 to the west, or Hampton Hill Road towards Heathrow. To the west of the site, traffic can access and egress the A316 Chertsey Road from Meadway, which in turn provides access towards Gould Road and the adjoining residential areas.

6.4 EXISTING TRAFFIC FLOWS

6.4.1 An automatic traffic count survey (ATC) was undertaken on Edwin Road between Crane Road and Norcutt Road for seven days in February 2022. Table 6-2 shows the average weekday eastbound and westbound vehicle flows on Edwin Road over a 12-hour period between 0700 – 1900.

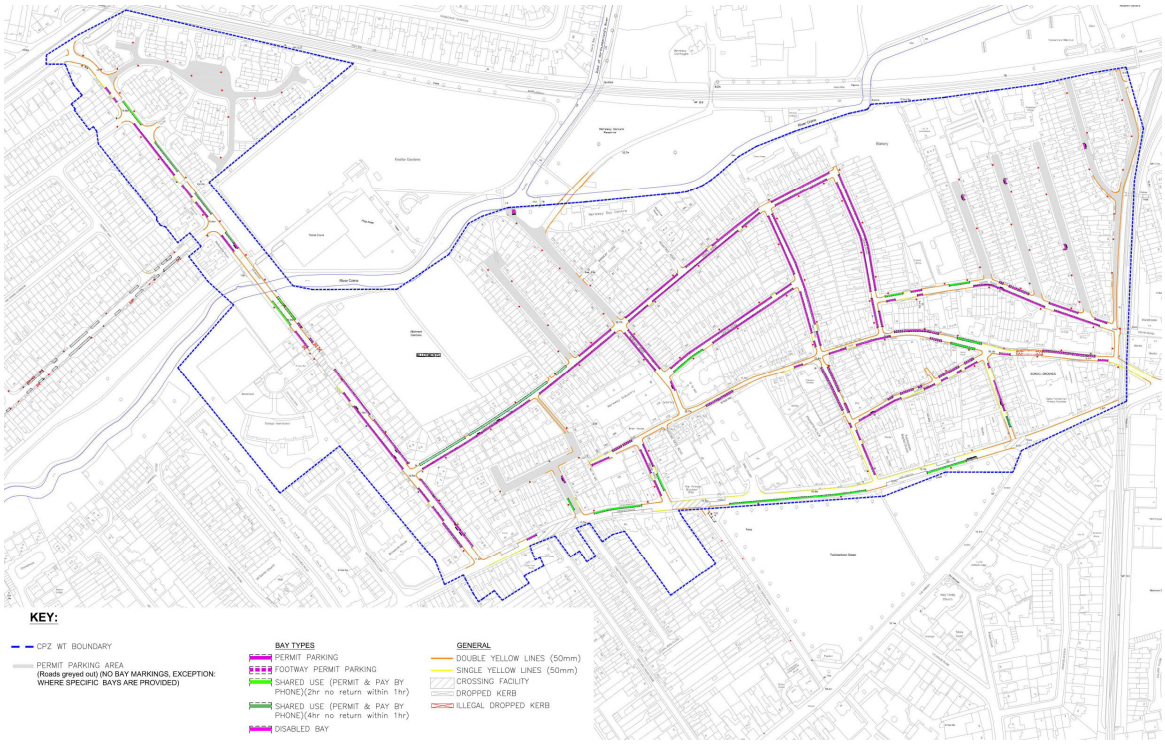
Table 6-2: ATC weekday data – Edwin Road

DIRECTION OF TRAVEL	0700-1900 (12-HOUR FLOW)
Eastbound	302
Westbound	214
Total	348

6.5 OFF-SITE PARKING AND LOADING

6.5.1 The parking on surrounding roads is predominantly residential, with Edwin Road, Crane Road and Gould Road now within Controlled Parking Zone (CPZ) "WT", which operates Monday to Friday 0830-1830, excluding public and bank holidays. CPZ "WT" has only been recently introduced to the area, which took effect in June 2018. A map of the Zone is indicated in Figure 6-2, illustrating that the site is predominantly surrounded by private parking bays.

Figure 6-2: Controlled Parking Zone WT

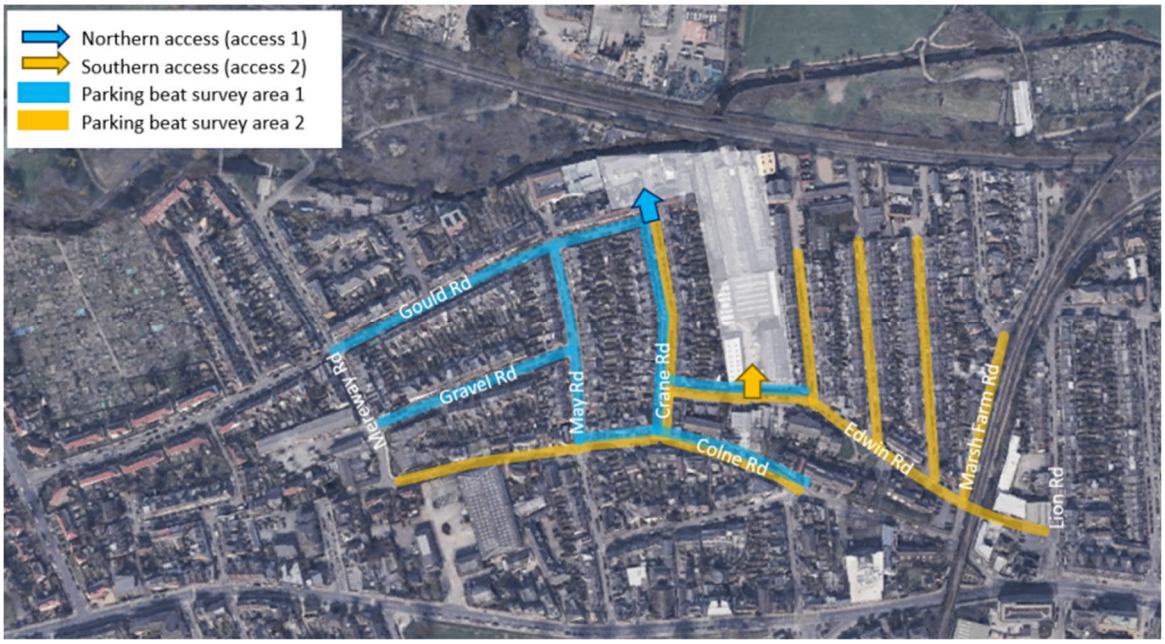


6.5.2 CPZ "D" is also within proximity of the site, which starts and continues east from Lion Road.

6.6 PARKING BEAT SURVEYS

6.6.1 Parking beat surveys were undertaken in accordance with LBRuT's Parking Beat Survey Criteria (2018). A survey specification was issued to Transport Officers at LBRuT to agree on the scope of the proposed parking beat surveys. Figure 6-3 sets out the extent of the parking beat surveys undertaken.

Figure 6-3: Parking Beat Survey Extent



6.6.2 It is highlighted that no unrestricted parking is available around the site, and therefore all bays are either permit holders or pay and display bays. In addition, sections of single and double yellow lines have been excluded from the calculations.

OVERNIGHT PARKING OCCUPANCY

6.6.3 Snapshot parking surveys were undertaken overnight at 01:00 on Tuesday 22nd, Wednesday 23rd and Sunday 27th February.

6.6.4 LBRuT guidance considers a percentage occupancy of 85% to represent parking stress. Although a number of roads surrounding the site, including Crane Road and Gould Road, experience average parking stress across the three days above 85%, some roads have average parking stress below this level. For example, Edwin Road experiences average parking stress of 80%, below the 85% threshold, with an average of 10 spaces available during the overnight period.

6.6.5 Although the total parking saturation levels on all roads within 200m of the site are above 85% across the three survey days, the proposed development provides 0.89 car parking spaces per dwelling, which is within the 0.75 – 1 space per dwelling requirements of the London Plan (2021). In addition, residents will be exempt from applying for any parking permits in the CPZ. As such, it is deemed that the proposed development will not add to the parking stress of the surrounding streets during the overnight period.

DAYTIME PARKING OCCUPANCY

6.6.6 Snapshot parking surveys were undertaken during the day at 10:00 and 16:00 on Tuesday 22nd and Wednesday 23rd February.

6.6.7 The parking occupancy during the day is below that experienced overnight, with average parking stress of 72% and a peak of 77% on the roads within 200m of the site. Therefore, it is not deemed that there are issues with parking saturation, highway safety or neighbour amenity on nearby roads.

6.6.8 In addition, as residents will be exempt from applying for any parking permits in the CPZ, the proposed development will not increase on-street parking stress during the daytime.

6.7 CAR OWNERSHIP

6.7.1 Table 6-3 provides a summary of car ownership in the area the site is located within.

Table 6-3: Car ownership (2011 Census data) for the site's immediate surrounding area

RICHMOND UPON THAMES WARD 014	% OF HOUSEHOLDS
No cars or vans in household	30%
1 car or van in household	52%
2 cars or vans in household	16%
3 cars or vans in household	2%
Four or more cars or vans in household	0%
TOTAL	100%

6.7.2 The local car ownership data suggests that around 70% of existing households do own one or more cars. The average number of cars per household for the ward is 1.13.

6.7.3 The percentages (shown above) have been applied to the proposed development's residential accommodation schedule (unit number) to calculate the likely car ownership at the proposed development, which has resulted in a forecast ownership of 105 vehicles. Whilst this is slightly above the number of spaces proposed (100), the census data is now ten years old, and the projection does not consider declining car ownership trends, changes to travel behaviour or the reduction in reliance on cars/parking through the proposed implementation of a car club bay near the site.

6.7.4 It is expected that the site's accessibility to good bus and railway links in conjunction with the circulation and implementation of a Residential Travel Plan and Workplace Travel Plan will also assist in encouraging travel by active and sustainable modes over vehicle trips.

6.8 TRAVEL, CAR OWNERSHIP AND PARKING BEHAVIOUR AND TRENDS

6.8.1 This section reviews mode share data trends, car ownership and travel behaviour changes/trends. This is based on the findings of research undertaken by Transport for London (TfL), the Department for Communities and Local Government (DCLG) and TRICS, the industry-used database of trip rates for developments used in the United Kingdom for transport planning purposes, specifically to quantify the trip generation of new developments.

DECIDE AND PROVIDE APPROACH

6.8.2 The 'Decide and Provide' approach to transport planning is both a more current approach to considering appropriate car parking provision and also aligns with planning policy associated with car parking for

London. TRICS published a document[4] on this matter in February 2021 and stated, "Decide and Provide is a planning paradigm that is vision-led, rather than forecast-led (Predict and Provide). At its heart is deciding on a preferred future and providing a development path best suited to achieving it, "The proposals are made in accordance with The London Plan (March 2021) 2021 Policy T6 Part B, which states that "Car-free development should be the starting point for all development proposals" and that were not appropriate to be fully car-free development should be "designed to provide the minimum necessary parking ('car-lite)".

CENSUS DATA – MODE SHARE TRENDS

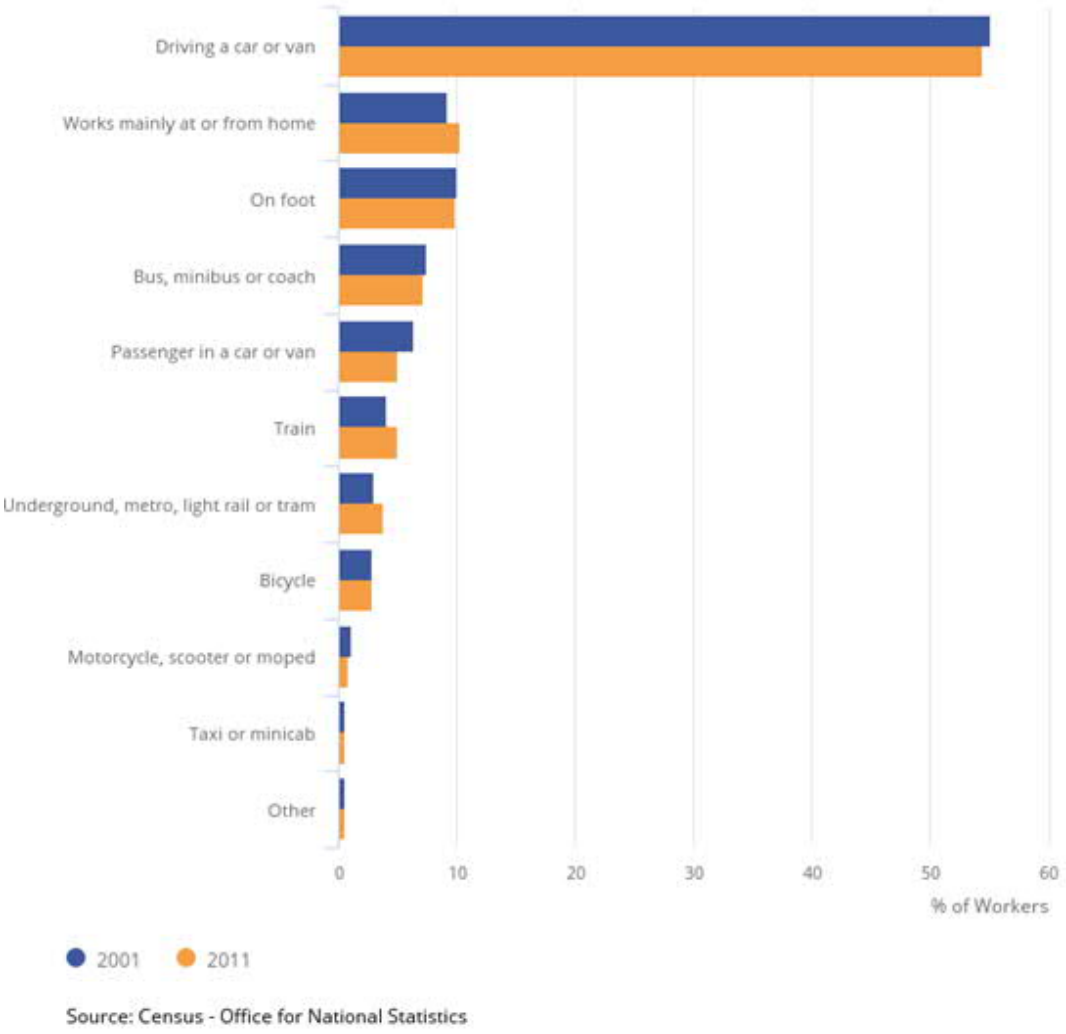
6.8.3 Typically, 2011 Census data for method of travel to work is used to establish the likely mode share and proportion of prospective residents that will travel by car for a Transport Assessment.

6.8.4 At the time of writing this Transport Assessment, the latest available Census data is ten years old. In the meantime, the method of travel to work data collected for 2001 and 2011 has been compared to understand the trends of change per mode, which will inform the design of the proposed development, including car parking provision.

6.8.5 At the highest level, a summary of the national method of travel to work patterns between Census 2001 and 2011 is shown in Figure 6-4 and indicates the change in mode share between the two data sets.

[4] http://www.trics.org/decideandprovideguidance.html

Figure 6-4: 2001 & 2011 changes in mode share



Source: Census - Office for National Statistics

6.8.6 The graph (shown in Figure 6-4) demonstrates that there has been a slight reduction in all vehicle trip generating modes, i.e., driving a car or van, being a passenger, travelling by motorcycle and by taxi. There has been an increase in the use of public transport modes such as train and the underground, as well as an increase in people who mainly work from home. It is anticipated that the trend of declining car use has continued and will continue in the future. The long-term effect of the Covid-19 pandemic on travel patterns and working from home has yet to be established, but it would be reasonable to assume the following:

- That the proportion of people working from home on a permanent or semi-permanent basis will have increased compared to pre-pandemic levels; and
- People are travelling less and/or at different times compared to pre-pandemic levels, particularly where the journey purpose is work-related.

TFL RESEARCH

6.8.7 TfL's research report "Residential Parking Provision in New Developments" provides further evidence to assist in determining appropriate car parking provisions for the proposed redevelopment's residents.

6.8.8 The report presents the findings of survey fieldwork carried out to better understand the relationship between parking, car ownership and use amongst residents of new developments in Greater London.

6.8.9 To better understand the relationship between parking, car ownership and use, TfL undertook a large-scale postal survey in November 2011 with residents of developments (with ten or more units) built between 2004 and 2009. In total, around 3,000 responses were received from more than 800 developments across London.

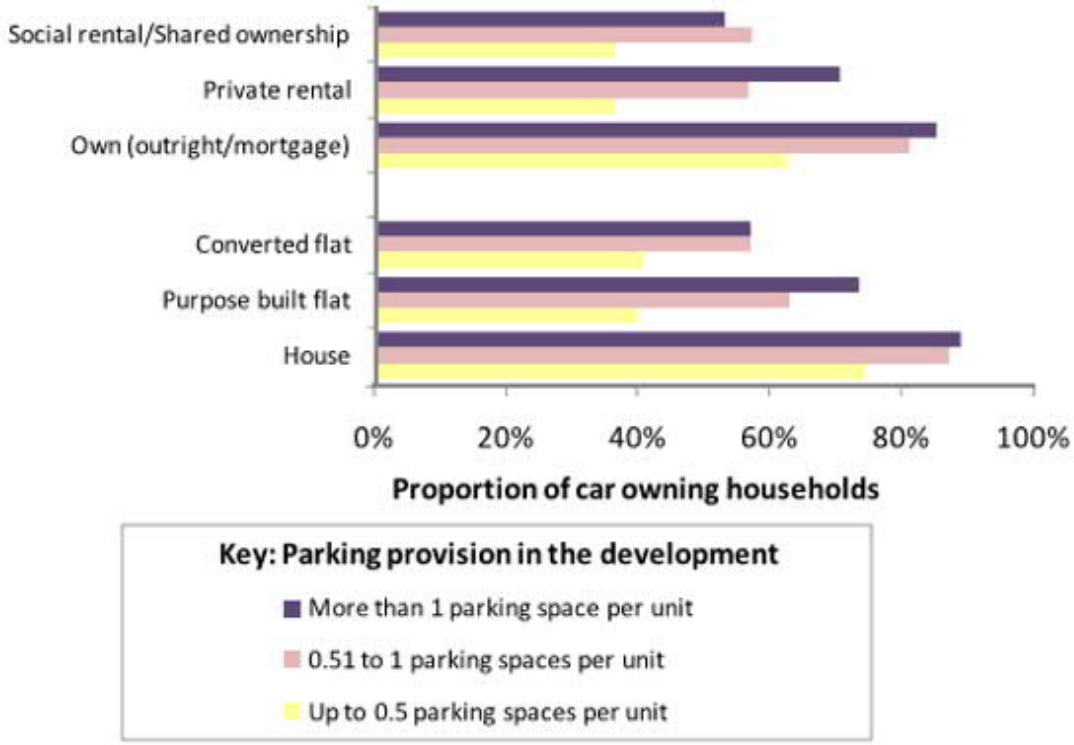
6.8.10 The key findings as summarised within the report and that is of relevance were:

- For all groups and in all areas, people living in developments with more parking available had higher levels of car ownership than people living in developments with less parking;
- People choose a home that meets their needs; there is a close relationship between the importance attached to parking and satisfaction with the quality of parking;
- Overall, developments with more parking contained more car owners and generated more car journeys than developments with less parking provided;
- Homeowners are more likely to own a car than those renting their home; and
- A regression analysis identified key factors influencing car ownership to be tenure, housing type, household structure, working status, area and access to public transport, level of parking provision, and car club membership.

6.8.11 Of all respondents, 20% lived in developments with less than 0.5 parking spaces per unit.

6.8.12 The graph shown in Figure 6-5 is an extract from TfL's research report, which summarises the proportion of car-owning households in London within different tenure and dwelling types.

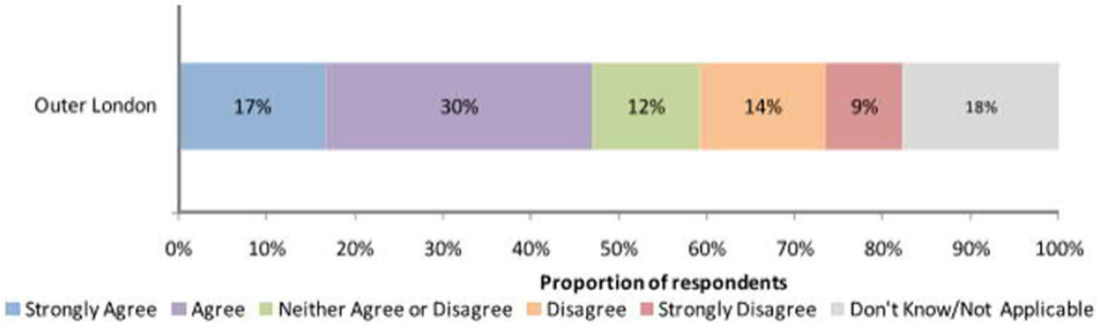
Figure 6-5: Proportion of car ownership per tenure and dwelling type



6.8.13 The graph indicates that within purpose-built flats with up to 0.5 parking spaces, only 40% of households are car owners. With parking provision of between 0.5 and 1 space per household, ownership is approximately 60%. In addition to the approach applied (decide and provide) to car parking provision and the mitigation measures (car-free services), the applicant will provide to its prospective residents, parking and travel behaviour trends also indicate lower car ownership levels across London.

6.8.14 TfL's research also sought to assess attitudes to car ownership. The graph shown in Figure 6-6 summarises the responses given by Outer London respondents to the statement 'My lifestyle is dependent on having a car'.

Figure 6-6: Dependency on cars for Londoners



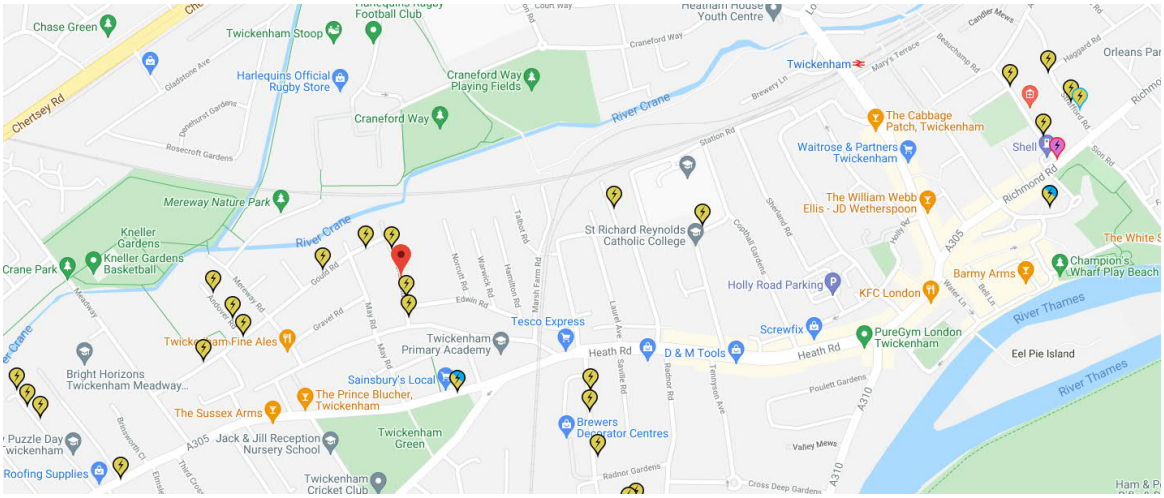
6.8.15 The graph indicates that within Outer London, only 47% of respondents agreed with the statement. The data includes all tenure types and household types.

6.8.16 The provision of 0.86 parking spaces per dwelling would be considered in line with the findings of the research set out above and is in line with the London Plan standards for the Sites PTAL level.

6.9 ELECTRIC CHARGING

6.9.1 Along with the proposed on-site provision, Figure 6-7 shows the on-street electric vehicle charging points provided within proximity of the proposed development site.

Figure 6-7: Electric vehicle charging points within proximity of the site



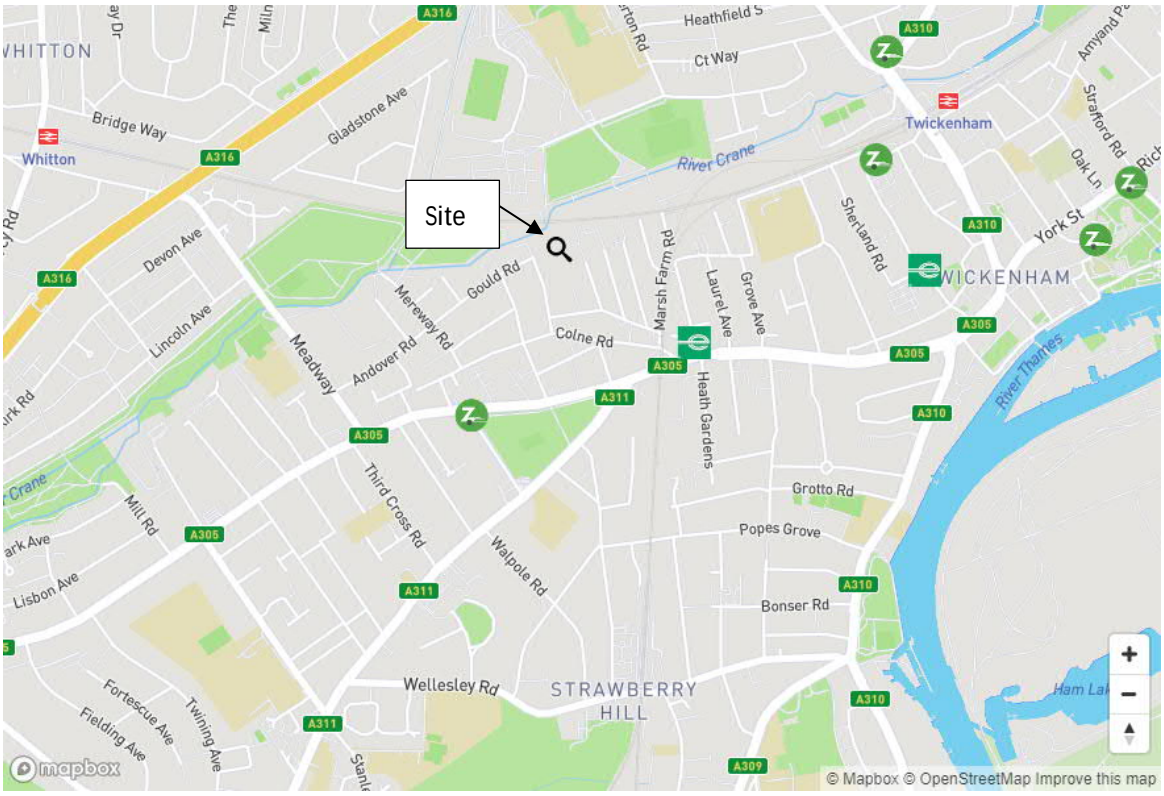
6.10 CAR CLUB

6.10.1 The nearest existing car clubs are located at 2 Lion Road, a six-minute walk to the east of the site) and on First Cross Road, a six-minute walk southwest of the site). The former is operated by Enterprise and the latter by Zipcar. All car club vehicles within proximity of the site are shown in Figure 6-8.

6.10.2 The development proposals include plans to provide an additional car club bay within the area which would be available for both the new residential development and surrounding residential dwellings. Future residents will have excellent access to the proposed car club bay and will be offered car club membership with further details in the Travel Plan.

6.10.3 LBRuT's website states that research has shown car club cars replace between 6 and 20 privately owned vehicles. CoMo UK's latest report on shared transport states that, on average, a car club space can replace 24 vehicles in Outer London.

Figure 6-8: Car Club locations



6.10.4 Convenient access to a car club facility will encourage lower levels of car ownership. Evidence supporting this assumption is summarised below:

- Carplus (2014) Annual Survey: London (p. 25):

  The percentage of new joiners reporting owning no car before joining a car club was 58 per cent, and after joining the car club was 73 per cent - indicating the potential for a 26% reduction in car ownership relative to conditions that might otherwise prevail.

- TfL (2014) Parking and Car Club Potential Users and Use, Systra (p. 2):

  Research of London license holders identified that household car ownership is not reviewed regularly. When it is, reasons include life events, such as moving to a new house or having a baby and external impacts such as changing parking policy or age/functionality of the car owned. This highlights that the proposed development is well placed to maximise the benefits of a car club as all occupiers will initially be moving home.

- Zip Car, A Transport Solution (2017 Viability Assessment provided for another London Residential development):

  A Zipcar provided car club car takes an average of 10-15 privately owned vehicles off the roads of the UK because members often sell (or don't replace) a car when they join. There are a number of zip car services located within a 20–30-minute walk of the site.

6.11 SUMMARY

6.11.1 The proposed development delivers local transport planning policy. The proposed development will provide a reduced level of traffic generation, with a significant reduction in HGVs trips throughout the day, and as such, there will be no significant impact on the highway network.

6.11.2 In order to protect local on-street parking amenities, prospective residents and tenants of the proposed development would be prohibited from obtaining on-street permits in the CPZ, which is expected to be secured through the s106 or similar.

7 CONSTRUCTION

7.1 INTRODUCTION

7.1.1 This section of the TA summarises the Outline Construction Logistics Plan (CLP), which has been prepared as a separate document to support the planning application. It summarises the key transport-related matters during the construction of the proposed development.

7.1.2 An Outline Construction Environmental Management Plan has also been prepared by London Square Ltd for submission as part of the planning application. The Outline CLP is based upon that document and provides an indicative construction programme as well as details of vehicle routing and access. The document has been prepared in line with best practice guidance and can be developed into a detailed CLP prior to construction and secured by a planning condition.

7.2 OBJECTIVES

7.2.1 The overall objectives are to:

- Environmental impact: Lower vehicle emissions and noise levels;
- Road risk: Improve vehicle and road user safety;
- Congestion: Reduce trips overall and retime where possible, especially in peak periods; and
- Cost: Efficient working practices and reduced deliveries.

7.2.2 To support the realisation of these objectives, several sub-objectives have been agreed upon and include:

- Encouraging construction workers to travel to the site by non-car modes;
- Promoting smarter operations that reduce the need for construction travel or that reduce or eliminate trips in peak periods;
- Encouraging greater use of sustainable freight modes;
- Encouraging the use of greener vehicles;
- Managing the ongoing development and delivery of the CLP with construction contractors;
- Communicating site delivery and servicing facilities to workers and suppliers; and
- Encouraging the most efficient use of construction freight vehicles.

7.3 CONSTRUCTION PROGRAMME

7.3.1 Planning for demolition and construction is understandably at a preliminary stage and may be subject to review and modification during detailed construction planning. For this reason, the following information is based on reasonable assumptions in the construction programme and the collective experience of the consulting team with similar projects. Nevertheless, the indicative programme at this stage is representative of a programme that is reasonable and achievable. The programme presents the likely sequence of activities, site logistics and the mitigation measures that will be implemented.

7.3.2 It is unlikely that the development will be constructed in phases, but it is possible that early occupation may occur as the development comprises separate buildings/residential blocks.

7.3.3 The construction programme is expected to be in the order of 28 months. Using an estimated start date of January 2024, it is expected that works would complete around May 2026. Table 7-1 and Table 7-2 outlines the main activities to be undertaken and the approximate duration of the works. Some activities will occur concurrently.

Table 7-1: Indicative Sequence of Works and Estimated Duration

ACTIVITY	PROGRAMME	
	START DATE	DURATION
Site setup and demolition	January 2024	August 2024
Sub-structure	July 2024	March 2025
Super-structure	August 2024	August 2025
Cladding	August 2024	October 2025
Fit-out, testing and commissioning	October 2024	May 2026

Table 7-2: Indicative Construction Programme

Activity	2024											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site Setup and Demolition												
Sub-Structure												
Super-Structure												
Cladding												
Fit-Out, Testing and Commissioning												

Activity	2025											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site Setup and Demolition												
Sub-Structure												
Super-Structure												
Cladding												
Fit-Out, Testing and Commissioning												

Activity	2026				
	Jan	Feb	Mar	Apr	May
Site Setup and Demolition					
Sub-Structure					
Super-Structure					
Cladding					
Fit-Out, Testing and Commissioning					

7.3.4 The construction programme in a larger format is contained in APPENDIX G.

7.4 CONSTRUCTION METHODOLOGY

7.4.1 Prior to the commencement of any site works, all occupiers surrounding the site will be notified in writing of the nature and duration of works to be undertaken. The name and contact details of the person responsible for the site works will be included in the introductory letter, and this will be used for all enquiries and complaints for the entire duration of the works updates of work will be provided regularly, and any complaints will be properly addressed as quickly as possible as part of the Contractor's commitment to the Considerate Contractors Scheme.

7.4.2 The safety of the public and protection of pedestrians will be ensured at all times by having the construction area, materials storage areas and waste storage areas either hoarded or fenced with lockable access. Relevant signage will be erected to ensure adequate warning/information regarding the health and safety of the public.

SITE SETUP AND DEMOLITION

7.4.3 The enabling works will comprise:

- Establishment of secure site hoarding and access/egress gates.
- Establishment of temporary site offices and welfare facilities.
- Disconnection/diversion of services.

7.4.4 The demolition works will comprise:

- Asbestos removal.
- Demolition of the south of the site.
- Breaking up hardstanding and reducing level dig.
- Excavate and backfill below-ground tanks.
- Ground remediation Block A.
- Diverting existing sewers.
- Demolition of the north of the site.
- Removing ground floor slabs and reducing level dig.

7.4.5 The early construction of the final roads will allow for surfaced haul roads to facilitate the construction of the development and will comprise of:

- Construction of the road between houses to the base course, including services, ducts and drainage.
- Construction of the road north of the site to the base course, including services, ducts and drainage.

SUB-STRUCTURE

7.4.6 The foundation construction methodology is still to be confirmed but is anticipated to be either mass concrete strip foundations for the terraced housing or shallow reinforced pad foundations for the apartment blocks.

7.4.7 Under-slab drainage and service ducts will then be installed prior to the construction of the ground floor slab. It is intended to form the ground floor slab in precast block and beam on the ground bearing foundations to provide for the remainder of the structural frame.

7.4.8 The foundation sequence shall reflect an entry and exit strategy for ease of access and egress. The foundations shall commence at the southern side of the site, complete on the northern side of the side.

SUPER-STRUCTURE

7.4.9 The frames construction methodology is still to be confirmed but is anticipated to be brick & block with timber upper floors and roofs for the terraced houses.

7.4.10 The frame construction of the apartment blocks will comprise an RC precast slab solution up to 4 storeys, excluding the uppermost floor. The pitched roofs lend themselves to lightweight prefabricated steel trusses supported by steel posts to frame out the upper floor.

7.4.11 The requirement for any concrete slab or steel placement will be assisted by a Manitou 360 Telehandler or mobile site cranes.

CLADDING

7.4.12 London Square will become the principal contractor for the development upon commencement of the façade works. The detailing of the envelope, faces and roof is still to be confirmed.

7.4.13 The installation of private oversailing balconies will complete the final stages of the façade works.

FIT-OUT, TESTING AND COMMISSIONING

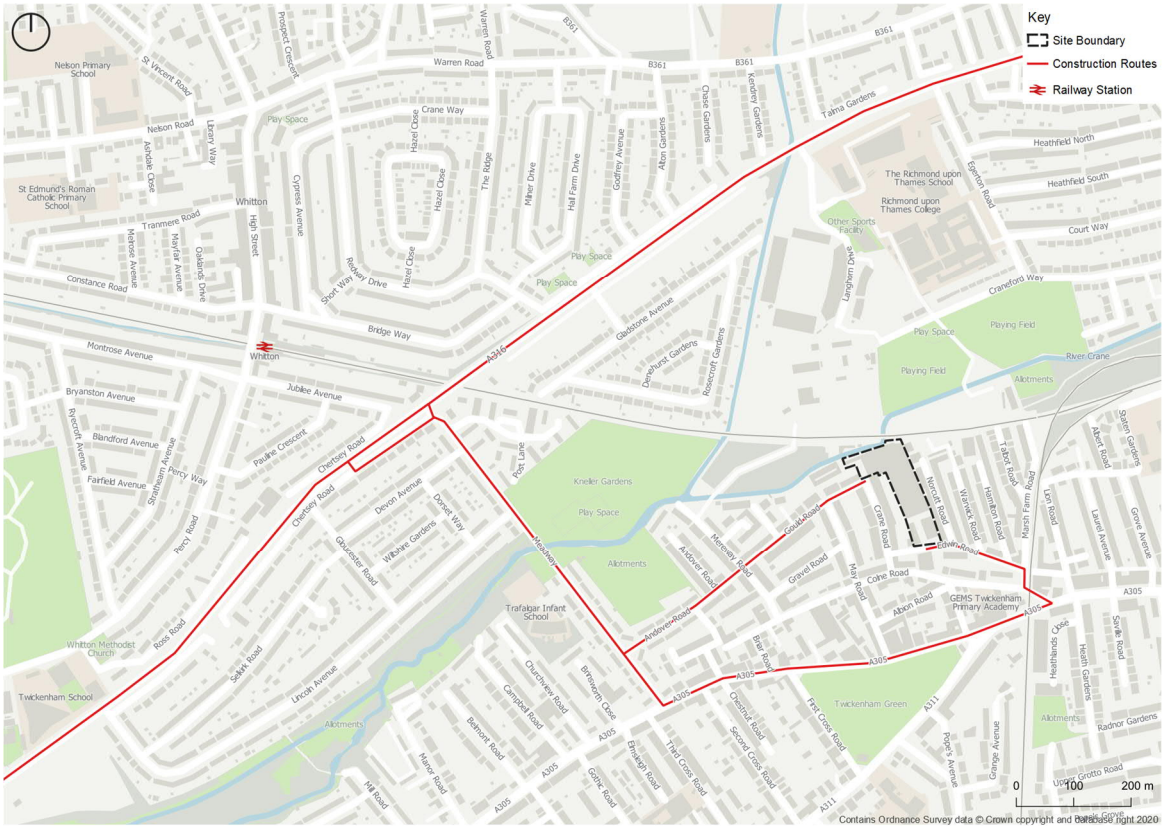
7.4.14 Following the apartment block becoming watertight, works will commence to the formation of the security and acoustic apartment demise walls, with each new apartment primarily formed. Fit-out works will also commence on the terrace houses once watertight has been achieved.

7.4.15 External works comprising of hard and soft landscaping will be the final activities to commence to each block, completed before the internal fit out of the block.

7.5 VEHICLE ROUTING

7.5.1 The vehicle routing plan is provided in Figure 7-1.

Figure 7-1: Routing Plan



7.5.2 Deliveries will route to/from the site via the A316, whether they are coming from Central London to the east or the M25 to the west. To access the site, vehicles will route south on Meadway before continuing east on The Green (A305). Vehicles will then route north on Colne Road and Marsh Farm Road before travelling west on Edwin Road. To egress the site, vehicles will route west on Gould Road before turning north on Meadway and accessing the A316. Sufficient clear signage to ensure construction vehicles only use designated routes will be provided.

7.6 ACCESS

7.6.1 Vehicular movements to and from the site will be controlled and managed. Pedestrian access to the site will be provided from a turnstile/gate on Gould Road. Staff cycle parking facilities will be provided. A plan of the immediate site will be provided to all delivery companies, clearly showing the access and exit point for all vehicles.

7.6.2 Due to the site layout, a one-way system through the site is proposed with vehicle access from Edwin Road and egress onto Gould Road.

7.6.3 Secure gates and wheel cleaning facilities will be established at the construction gates.

7.6.4 To minimise the likelihood of congestion during the construction period, strict monitoring and control of vehicles entering and egressing the sites will be implemented. Construction deliveries will be carefully planned, with delivery times agreed upon with each subcontractor and supplier using a booking system. Delivery schedules will be produced to look at the profiles of up-and-coming deliveries and regulate deliveries and avoid any potential queueing.

7.6.5 The pedestrian footway along Edwin Road and Crane Road will be maintained throughout the construction period.

7.6.6 Given the accessible location of the site, most operatives are anticipated to arrive by public transport. No operatives parking will be permitted or encouraged.

7.7 STRATEGIES TO REDUCE CONSTRUCTION IMPACT

7.7.1 A number of strategies and measures are planned to reduce the impacts of construction and construction traffic on the local area. The planned measures can be categorised as follows:

- Committed – Measures that will be implemented as part of the CLP.
- Proposed – Measures that are feasible and likely to be implemented. Once a contractor is appointed, these measures will be studied further and confirmed within the Detailed CLP.
- Considered – Measures that are unlikely to be implemented or feasible but could be investigated or become relevant in the future.

7.7.2 Table 7-3 summarises the planned measures for the construction of the Proposed Development, based on the checklist provided in TfL's CLP guidance.

Table 7-3: Construction Planned Measures

PLANNED MEASURES	COMMITTED	PROPOSED	CONSIDERED
MEASURES INFLUENCING CONSTRUCTION VEHICLES AND DELIVERIES			
Safety and environmental standards and programmes	✓		
Adherence to designated routes	✓		
Delivery scheduling	✓		
Re-timing for out-of-peak deliveries		✓	
Re-timing for out-of-hours deliveries			✓
Use of holding areas and vehicle call-off areas			✓
Use of logistics and consolidation centres			✓
MEASURES TO ENCOURAGE SUSTAINABLE FREIGHT			
Freight by water			✓
Freight by rail			✓
MATERIAL PROCUREMENT MEAURES			
Design for Manufacture and Assembly and off-site manufacture			✓
Re-use of material on site	✓		
Smart procurement		✓	
OTHER MEASURES			
Collaboration with other sites in the area			✓
Implement a Staff Travel Plan	✓		

7.7.3 The CLOCS (Construction Logistics and Community Safety) standard will be signed up to, which will ensure that the construction contractor (as well suppliers and sub-contractors) follow safe practices in the management of their operations, vehicles, drivers and construction sites.

7.7.4 All construction vehicle operators will be required to be accredited in line with the Fleet Operator Recognition Scheme (FORS). FORS accreditation confirms that a fleet operator can demonstrate that appropriate systems and policies exist to ensure drivers are suitably fit, qualified and licenced to operate vehicles which are properly maintained, equipped and insured. It is a mechanism by which adherence to the CLOCS standard can be assured and monitored.

7.7.5 A delivery scheduling system is planned to allow for the control and management of the timings of deliveries. Booking availability will be determined by unloading space available as well as activities on site, so it will be managed carefully to minimise impacts on the local transport network. A comprehensive daily logistics schedule will be maintained, and unauthorised deliveries will be turned away until the approved procedure has been followed.

7.7.6 Construction employees on site will be prepared for the arrival of all vehicles to prevent vehicles from needing to wait on the public highway. Deliveries will be made 'just in time' to minimise the amount of space required on site for construction materials. Hard copies of daily delivery schedules will be displayed at prominent locations, e.g. provided at the gate/offloading points, at hoists and also issued to drivers, forklift drivers and any other materials handling equipment operators, all of whom need to be in constant radio communication with one another. All radio users will be trained on correct radio procedures and protocols.

7.7.7 To prevent the contamination of local roads, a wheel wash system will be in place inside the site delivery gates. The system will clean the wheels of vehicles during the demolition, substructure and superstructure phases. The traffic marshal will then check each vehicle for cleanliness before allowing the vehicle to leave the site. Additionally, working practices will be selected to minimise the release of dust, for example, through water suppression during cutting operations.

7.7.8 Any abnormal loads will be planned in advance and agreed upon with the Highways Authority.

7.7.9 The use of an off-site construction consolidation centre will be investigated; however, the booking system will allow deliveries to be managed efficiently. Where possible, vehicles will be fully loaded, thereby minimising the number of vehicle trips made by tipper trucks and concrete mixing trucks.

7.7.10 Smart procurement will be encouraged in order to share suppliers and minimise the number of construction vehicle trips. All suppliers will be made aware of access and routing requirements.

7.7.11 The use of water and rail modes to transport freight is unlikely to be practical, given that there will be limited demolition or muck away material removed. Off-site manufacture and re-use of material will be investigated and proposed where practical. Once appointed, the contractor will develop a plan to maximise smart procurement.

7.7.12 A Staff Travel Plan will be prepared by the contractor as part of the Detailed CLP to encourage the use of sustainable modes considering the good level of public transport accessibility. Car parking for construction workers will be restricted. Employee cycle parking facilities will be provided.

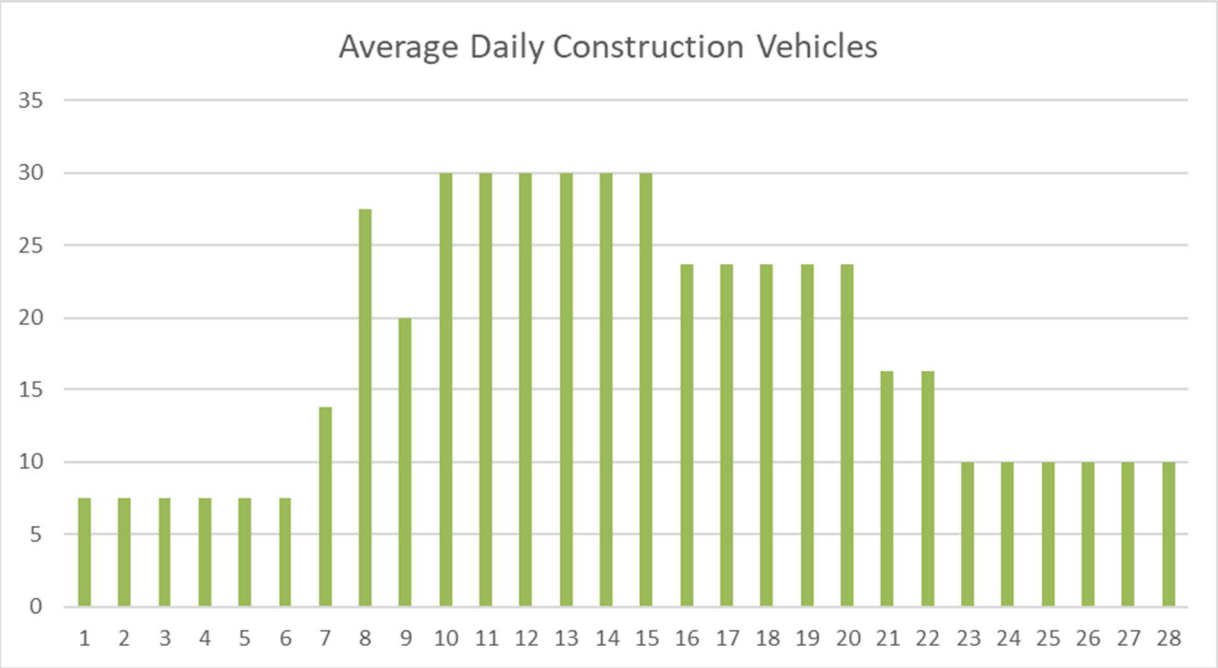
7.7.13 Construction is anticipated to take place during normal construction working hours (08:00 – 18:00 Monday – Friday, 08:00-13:00 Saturday).

7.7.14 Once appointed, the contractor will investigate the opportunity to collaborate with other local construction sites.

7.8 ESTIMATED VEHICLE MOVEMENTS

7.8.1 Based on the indicative programme and construction information, the estimated number of construction vehicle trips is summarised in Figure 7-2. This indicates a peak of around 30 deliveries per day during superstructure/fit-out and cladding construction.

Figure 7-2: Estimated Construction Vehicles



7.9 IMPLEMENTATION

IMPLEMENTING

7.9.1 The Contract Manager shall be responsible for implementing the delivery schedules and ensuring all deliveries are fully in compliance with the detailed procedures above.

7.9.2 The Contract Manager shall appoint qualified Traffic Marshals who will be responsible for all deliveries – from booking them to marshalling them to the offloading bay and record keeping. The traffic marshals will undertake specific training, including operating the temporary traffic signals to minimise disruption to through traffic.

7.9.3 Procedures will be implemented to ensure effective liaison with the neighbouring properties, adjacent residents and local community through:

- Any circulated newsletters will be displayed outside the site entrance, along with letter drops to nearby residents when construction activities are likely to affect the local residents
- Information boards mounted at the site entrance will provide details of the following information:
    - Developer/Contractor details;
    - Local Authority details;
    - Nature and duration of the project;
    - Principal milestones of the project;
    - Site operating times; and
    - Site management names and contact details.

7.9.4 This will also enable the local community to raise any concerns about construction activity and traffic. If a concern or complaint is received, the matter will immediately be referred to the site manager, who will record the matter and raise it to the management team, who will investigate. The site management team will record the date, time and reason for the complaint and what action has been taken to investigate and respond to the complaint.

MONITORING

7.9.5 Data sharing remains a key principle for the success and continuous improvement of construction. A list of items will be agreed upon, and specific data will be disseminated. This will include:

- Compliance
  - CLOCS compliance – suppliers to provide pre-qualification evidence
  - FORS compliance – suppliers to provide pre-qualification evidence
  - Routing compliance – to be monitored through resident feedback
  - No staff car parking
- Data from the delivery scheduling system and the recorded log of vehicle movements to the site:
  - Vehicle type and size
  - Duration on site
- Safety issues, including any injuries or near, misses recorded, in the site logbook
- Breaches and complaints
  - No construction vehicles will be allowed to travel off the identified access, and egress routes and no waiting will be permitted on the access or egress routes. We recognise that our neighbours and residents along the routes are often best placed to advise us if drivers are not complying with these requirements. Residents will be able to contact our Site Manager to report any non-compliance. For a first offence, suppliers will be reminded of the site access route requirements. For a second offence, suppliers will have a 5% proportion of their load fee withheld. For a third offence, suppliers will be replaced.
- Staff Travel Plan

7.9.6 The traffic marshal shall keep a record of every delivery, such as:

1. Number of vehicle movements to site
   - Total
   - By vehicle type/size/age
   - Time spent on site
   - Consolidation centre utilisation
   - Delivery/collection accuracy compared to schedule
2. Breaches and complaints
   - Vehicle routing
   - Timing of delivery

- Unacceptable queuing or parking
- Adherence to safety and environmental standards & programmes
- Low Emissions Zone (LEZ) compliance

3. Safety

- Logistics-related incidents
- Record of associated fatalities and serious injuries
- Ways staff are travelling to the site
- Vehicles and operators not meeting safety requirements

UPDATING

7.9.7 The procedures shall be reviewed through the different phases of the programme. If anything is not working well, or there are improvements that can be made, these shall be documented, agreed with highways (if necessary) and put into action and monitored accordingly.

7.9.8 The CLP will be kept on-site and updated by the Principal Contractor in consultation with the Highway Authority.

8 CONCLUSIONS

8.1.1 This Healthy Streets Transport Assessment (TA) has been prepared to support an application for full planning permission at the Greggs Bakery site, located in the London Borough of Richmond upon Thames (LBRuT).

8.1.2 The existing site has been vacant since 2018 but was occupied by Greggs Bakery when previously operational. The infrastructure associated with the former use includes a number of offices, sheds, production buildings and areas of hardstanding, with two tall silos located towards the Edwin Road entrance. There is existing vehicle access from Crane Road that enters into a parking area, with a heavy goods vehicle (HGV) service access point located towards the south of the site along Edwin Road, providing access to a service yard. When fully operational as a factory, this service yard was utilised by large rigid HGVs from early in the morning and throughout the rest of a typical day.

8.1.3 The development proposal seeks permission for the demolition of the existing structures on-site (aside from no.2 Gould Road) and the construction of 116 residential dwellings, with associated landscaping, parking and amenity space, and a commercial unit with a GIA of approximately 175 sqm in its place.

8.1.4 The existing vehicular accesses are proposed to be retained, and a new shared use internal road on-site is proposed to connect the accesses. The proposed development will deliver 100 residential car parking spaces (equating to 0.86 spaces per dwelling, compliant with the London Plan (March 2021)'s requirements for an Outer London site with a PTAL of 2. The proposed commercial unit will be car-free with the exception of one Blue Badge parking bay in front of the unit. All delivery and servicing activity generated by the residential and commercial uses will occur on-site.

8.1.5 A new car club bay is proposed on Edwin Road and is expected to support a car-lite or car-free lifestyle for some prospective residents.

8.1.6 Pedestrian-prioritised and landscaped footways and public realm on-site will be provided as part of the proposal. The walking experience through the site will be significantly improved with the new provision of the on-site internal road connecting to the existing surrounding road network (Edwin Road and Crane Road/Gould Road). The development has been designed to provide the best experience for cyclists travelling to/from the development to school, work and other destinations,

8.1.7 The proposed development trip generation has been forecast and related to the capacity of the transport network. As a residential-led mixed-use development, the impact on the highway network is expected to be minimal and accommodated without perceptible impact on other road users.

8.1.8 The proposed development will contribute to a reduction in site traffic generated by Heavy Goods Vehicles (HGVs) due to its change of land use from Class B2 to Class C3. The generous provision of cycle facilities for the site in conjunction with a Travel Plan will encourage a mode shift from private vehicles to walking and cycling where possible. Furthermore, the proposed on-site shared surface and landscape improvements will help reduce motor traffic dominance, encourage walking and cycling and improve road safety for vulnerable road users.

8.1.9 The impact of the proposed development on the public transport services is negligible. Local public transport services provide significant capacity that can easily accommodate the proposed development public transport trips with negligible impacts.

8.1.10 A Framework Travel Plan, Outline Delivery and Servicing Plan, Parking Design Management Plan and an Outline Construction Logistics Plan (see Section 7 of this report) have been prepared to encourage sustainable travel and ensure that the proposed development operates efficiently.

8.1.11 The proposed development is suitably located and designed to maximise the potential for sustainable travel and minimise impacts on the local transport networks through appropriate access, public realm, parking and servicing strategies. The proposed development is, therefore, appropriate in principle.

8.1.12 In accordance with TfL's Healthy Streets Transport Assessment Guidance, Table 8-1 summarises the conclusions of this Healthy Streets TA.

Table 8-1: Key Transport Assessment Conclusions

	KEY TRANSPORT IMPACTS / ISSUES	SOLUTIONS / MECHANISMS
Transport Planning for People	Existing local residents are primarily from the 'Detached Retirement' TCoL segment indicating very high levels of car use and a very low propensity to change travel behaviours, particularly in terms of increasing walking and cycling.	Future residents are likely to comprise other segments that have a greater opportunity to reduce car use and increase active travel. The proposed development's reduced parking provision will encourage residents to travel by active and sustainable modes.
Site & Surroundings	Due to the site's residential setting, the adjoining network of roads does not lend themselves to medium-volume HGV movements. Carriageways are in parts, narrow and often flanked by parked cars. There have been regular instances of vehicles mounting the kerb, as illustrated by the condition of the pavement and kerb along Marsh Farm Road (which is the route HGVs used to take between the site and the A305 and is indeed reinforced by signage identifying other routes as being unsuitable for HGVs).	One of the key benefits in transport terms of delivering a residential scheme on this site compared to its previous use as a Greggs bakery/factory is the substantial reduction in the number of HGV movements and subsequent impacts/issues associated with these vehicle movements. A shared-space design approach is proposed on-site to encourage lower vehicular speeds, better driver attention, and prioritise non-motorised users (i.e. pedestrians and cyclists). The proposed access, one-way vehicle route and shared-space design approach are intended to reflect the principles of a typical London mews street which is further reinforced by the housing typologies proposed. A Stage 1 Road Safety Audit has been undertaken for the amended accesses on Edwin Road and Crane Road/Gould Road.
	The Edwin Road footway in front of the site provides for a relatively poor pedestrian experience.	The footway will be upgraded. The larger southern vehicle access will be narrowed, reducing pedestrian crossing distance.
	The limited existing public realm or attractive space on site.	A pedestrian-prioritised, landscaped public realm will be provided as part of the proposal.
	The existing cycle had no cycle parking provision	The proposed development will deliver significant cycle parking for the residential and commercial units to encourage active travel.
Active Travel and Vision Zero	Two KSI collisions occurred on the A503 Heath Road (journey 1). Two KSI collisions occurred on the A310 London Road to the north of the junction with Brewery Lane (journey 3).	A range of measures could be put in place to improve the local road and cycle network, such as installing average speed cameras to enforce the 20mph speed limit, signage and road markings, additional crossing points, and general highway maintenance LBRuT could undertake. The introduction of cycle infrastructure (dedicated/segregated/mandatory lanes) where carriageway width permits would improve many of the

		key journeys for cyclists travelling to/from the proposed development.
	The development will generate a low number of new trips on the transport network.	A detailed review of how and where people will travel has been undertaken, and the impacts of the development on the London-wide network are expected to be negligible. The proposed development is located in an area with public transport routes and medium frequency services, which can accommodate the relatively low number of development trips forecast without perceptible impact.
London Wide Network	The site, when previously operational, generated a number of regular daily HGV movements, with instances of conflict where large vehicles were passing each other. Damage to footways and kerbs, concerns about the safety of vulnerable road users, local complaints regarding noise and poor air quality and damage to cars parked on-street by passing HGVs were issues and impacted the Greggs Bakery site when previously operational created.	One of the key benefits in transport terms of delivering a residential scheme on this site compared to its previous use as a Greggs bakery/factory is a substantial reduction in the number of HGV movements. In comparison to industrial/food production use, a residential-led scheme on the site will almost entirely eliminate daily HGV trips, which have been identified as a source of great conflict in the site's largely residential area. Furthermore, the proposed on-site shared surface and landscape improvements will help reduce motor traffic dominance, encourage walking and cycling and improve road safety for vulnerable road users.
Local Borough Analysis	The site is in Richmond CPZ 'WT'	Residents will be exempt from applying for any parking permits in the CPZ. This will protect the existing parking amenity surrounding the site.
Construction	Full details of the construction timing and methodology will not be known until a contractor is appointed.	A Detailed Construction Logistics Plan is expected to be secured by condition and will be prepared by a contractor once appointed.

8.1.21 The TA has thoroughly reviewed the existing conditions and associated transport impacts of the proposed development. It has demonstrated that the proposed development will have a negligible transport impact and will contribute significantly to the site's improved permeability, resulting in wider transport benefits.

8.1.22 The TA has also thoroughly considered the proposals in the context of current planning policy and demonstrates compliance.

APPENDIX A

PROPOSED DEVELOPMENT PLANS