

9. TRANSPORT & ACCESS

Introduction

- 9.1 This chapter of the ES assesses the likely significant effects of the Development on the environment in respect of transport and access.
- 9.2 This assessment has been carried out in accordance with all applicable policy, legislation and guidance.

Policy Context

National Planning Policy

National Planning Policy Framework¹

- 9.3 The revised National Planning Policy Framework (NPPF) published in February 2019, at Section 9 refers to the promotion of sustainable transport and states that the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. Paragraph 108 states:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- b) safe and suitable access to the site can be achieved for all users; and*
- c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost-effectively mitigated to an acceptable degree. on transport grounds where the residual cumulative impacts of development are severe.'*

- 9.4 Further to the above, Paragraph 109 states *'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.'*
- 9.5 Paragraph 35 states that developments should be located and designed where practical to accommodate the efficient delivery of goods and supplies; give priority to pedestrian and cycle movements; and have access to high-quality public transport facilities and create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians.

- 9.6 In respect of practical mechanisms for instilling sustainable transport principles in new developments Paragraph, 111 states that *'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'*

Planning Practice Guidance²

- 9.7 The Planning Practice Guidance (PPG) was launched on 6th March 2014 and provides an internet-based source of all national planning guidance. In the section relating to Travel Plans, Transport Assessments and Statements, the PPG defines these documents as ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements.
- 9.8 The PPG provides guidance as to what should be considered when setting the scope of the transport assessment, as well as the level of detail to be included, whilst acknowledging that this will vary from site to site. The guidance states that an assessment should include the likely associated environmental impacts of transport to the Development, particularly in relation to proximity to environmentally sensitive areas (such as Air Quality Management Areas (AQMAs)) as well as an appropriate assessment of the cumulative impacts arising from other committed development.
- 9.9 For the purposes of this EIA, these committed development sites are considered as cumulative development.

Regional Planning Policy

Draft London Plan (December 2019)²

- 9.10 The draft London Plan was published in November 2017 and has been subject to public consultation. The 'Intend to Publish' version of the London Plan was published in December 2019. The document will provide the context for development planning decisions in the Greater London region, once the draft is formally adopted. Further to the London Assembly (Plenary) on 6th February 2020, it is understood that the draft London Plan will be published in late 2020³.

- 9.11 The draft London Plan identifies the 'Great West Corridor', a 2.5 mile stretch of the A4 Great West Road in which the Site is located, as an Opportunity Area or 'Area of Intensification', and supports the growth of employment in the area by designating it as a potential 'Strategic Outer London Development Centre' and a 'Strategic Industrial Location'.
- 9.12 Transport policies are set out in Chapter 10 of the draft document. Policy T1 of the document states that: "*Development Plans should support and development proposals should facilitate:*
- *The delivery of the Mayor's strategic target of 80 per cent of all trips in London to be made by foot, cycle or public transport by 2041.*
 - *All development should make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London's transport networks and supporting infrastructure are mitigated."*
- 9.13 Paragraph 10.1.1 of the document goes on to say "*The integration of land use and transport, and the provision of a robust and resilient public transport network are essential in realising and maximising growth and ensuring that different parts of the city are connected in a sustainable and efficient way. In order to help facilitate this, an integrated strategic approach to transport is needed, with an ambitious aim to reduce Londoners' dependency on cars in favour of increased walking, cycling and public transport use."*
- 9.14 The document provides a focus on the creation of Healthy Streets, as specified in Policy T2, which states:
- A. *Development proposals and Development Plans should deliver patterns of land use that facilitate residents making shorter, regular trips by walking or cycling.*
 - B. *Development Plans should:*
 1. *promote and demonstrate the application of the Mayor's Healthy Streets Approach to: improve health and reduce health inequalities; reduce car dominance, ownership and use, road danger, severance, vehicle emissions and noise; increase walking, cycling and public transport use; improve street safety, comfort, convenience and amenity; and support these outcomes through sensitively designed freight facilities.*
 2. *identify opportunities to improve the balance of space given to people to dwell, walk, cycle, and travel on public transport and in essential vehicles, so space is used more efficiently and streets are greener and more pleasant.*
 - C. *In Opportunity Areas and other growth areas, new and improved walking, cycling and public transport networks should be planned at an early stage, with delivery phased appropriately to support mode shift towards active and public transport travel. Designs for*

new or enhanced streets must demonstrate how they deliver against the ten Healthy Streets Indicators.

D. Development proposals should:

- 1. demonstrate how they will deliver improvements that support the ten Healthy Streets Indicators in line with Transport for London guidance.*
- 2. reduce the dominance of vehicles on London's streets whether stationary or moving.*
- 3. be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport.*

Local Planning Policy

Hounslow Local Plan 2015 to 2030 (September 2015)⁴

9.15 The Hounslow Local Plan contains a 15-year plan to provide spatial policies, development management policies and site allocations to guide and manage developments in the borough up to 2030.

9.16 The Local Plan sets out a number of policies with regard to new development and transport considerations. The council's over-arching transport objective is to *'enable all those who live in or visit the area to travel safely and conveniently, whilst supporting environmentally sustainable economic growth and improving health'*.

9.17 Policy EC2 sets out the council's aims to develop an increasingly sustainable local transport network. This will be achieved by:

- 'Promoting 'car-free' or 'low car' development where appropriate, as well as car clubs and car-sharing schemes;*
- Promoting the active management of car parking and travel demand in the borough; and*
- Using the standards established in the London Plan for car parking, cycle parking, motorcycle parking, coach parking, and electric vehicle charging (or as updated by alterations to the London Plan)."*

9.18 New developments will also need to demonstrate that they:

- 'are located appropriately with regard to public transport accessibility and capacity, road capacity and access to good quality walking and cycling networks;*
- Demonstrate that adverse impacts on the transport network are avoided;*
- Developments should provide a minimum number of cycle parking spaces and an appropriate maximum number of car parking spaces consistent with the standards in the London Plan; and*

- *Incorporate design measures and facilities to promote cycling, in line with the London Plan.*"

Local Plan review for Great West Corridor (October 2017)⁵

9.19 The Draft Great West Corridor (GWC) Local Plan Review is an emerging document, published by The London Borough of Hounslow (LBH) in October 2017. The GWC Local Plan Review sets out the location and scale of development in this area of the Borough up to 2033. The document has been developed to facilitate specific consideration of the Great West Corridor Plan Opportunity Area, as identified in the London Plan (2016), within the context of the Hounslow Local Plan. The Council has prepared the Local Plan Review for formal adoption by summer/autumn 2020⁶.

9.20 In reference to Policy GWC5 Transport and Connectivity, the council has outlined a number of key improvements to support sustainable development and growth along the Great West Corridor:

- *"Actively supporting and facilitating the delivery of new transport interchange sites. This could include safeguarding land for future station development proposed at: i. Golden Mile Station: Brentford - Mainline to Southall Crossrail Link ii. Lionel Road Station: Old Oak Common - Hounslow Overground Link;*
- *Improving cycling infrastructure throughout the area, specifically along the A315 (Cycle Superhighway 9) and other 'quietway' routes;*
- *Working in partnership with TfL and bus service providers to improve the frequency and efficiency of the bus network to and through the Corridor;*
- *Improving connectivity to the London Underground network through supporting the development of better links to the Piccadilly line, for example through the 'Boston Manor Boardwalk'; and*
- *Actively encouraging walking and cycling through the provision of an attractive public realm that helps to link the Great West Corridor and surrounding neighbourhoods such as Brentford Town Centre, Brentford East and the River Brent Quarter better for those travelling on foot or by bike."*

9.21 The Plan also includes commitments to support the expansion of bus services along and across the corridor. A key issue noted is the existing reliance on limited bus services into the area, with the exception of Brentford, Chiswick and Brentford East town centres. Increased bus services would help to reduce private vehicle traffic, and increase the Public Transport Accessibility Levels (PTAL). Consultations between LBH and TfL are ongoing as part of the development and implementation of the GWC Local Plan.

Great West Corridor Masterplan and Capacity Study (July 2019)⁷

9.22 The Great West Corridor Masterplan and Capacity Study (July 2019) sets out a vision and spatial framework for the Great West Corridor. Chapter 7 of the document considers 'transport and movement'.

9.23 The Masterplan has been produced with reference to the TfL Healthy Streets Approach, with reference to the healthy streets indicators made throughout the Masterplan.

9.24 To support the Masterplan, two rail improvement projects have been identified which include:

- Golden Mile Rail Link – A link between the Crossrail station at Southall and a new station on the Great West Road; and
- West London Orbital – A new overground service creating a route linking Crossrail and HS2. The route would serve Syon Lane and Brentford Station.

9.25 The Masterplan also proposes significant improvements to bus services along the Great West Corridor.

9.26 Cycle improvements are also included within the Masterplan. The new Cycle Superhighway 9 would require improved cycle connections along the Great West Corridor. The Masterplan proposes cycle improvements along the A4, with consideration of the following:

- Improved surfacing;
- Improved crossing facilities and cycle priority; and
- The use of planting or barriers to mitigate air/noise pollution.

9.27 The Masterplan sets out the need for all new streets and public realm to consider cycle routes and for secure cycle parking to be provided within areas of public realm.

9.28 To create places that are considered walkable, the Masterplan proposes to use the Healthy Streets approach. With respects to improving walking connections along the Great West Corridor the GWC Masterplan considers the following interventions:

- Clean air routes parallel to the A4;
- New bridge links across the railway and River Brent;
- New walking route across the West cross Quarter, linking the Golden Mile Station to Syon Lane;

- New walking route from Boston Manor Station to the Sky campus;
- Better integration and enhancement of the Grand Union Canal Walk;
- New connection from the Grand Union Canal Walk with Boston Manor Station;
- Internal connections within the Brentford Stadium Quarter; and
- Improved access into Gunnersbury Park from the Brentford Stadium Quarter.

Assessment Methodology

9.29 This section describes the assessment methodology, including baseline data collection and impact assessment criteria used in the assessment. The adopted methodology has been informed by policy documents discussed above, specific guidelines for the preparation of Environmental Assessments (ESs) and relevant pre-application consultation with LBH including formal EIA scoping, which is described in Chapter 2 EIA Methodology of this ES.

9.30 In respect of the vehicle movements, the following assessment scenarios have been considered:

- For demolition and construction, the worst-case construction traffic generation is likely to take place in 2023. The assessment has considered the impact of construction related traffic movements for the following scenarios:
 - Scenario 1: Existing Baseline (2019);
 - Scenario 2: Future Baseline (2023);
 - Scenario 3: Future Baseline + Development; and
 - Scenario 4: Future Baseline + Cumulative Development + Development.
- For the completed Development, the assessment has considered the following scenarios:
 - Scenario 1: Existing baseline (2019);
 - Scenario 2: Future baseline (2026 (Development's opening year) and 2035 (Tesco Osterley site opening year));
 - Scenario 3: Future Baseline + Development; and
 - Scenario 4: Future Baseline + Cumulative Development + Development.

9.31 The Tesco Osterley site would only be developed following the Development becoming fully operational.

9.32 As required by TfL and LBH, Scenario 2 accounts for the future baseline with background growth derived from TfL's London Highway Assignment (LoHAM) model¹⁵.

- 9.33 LoHAM takes information on the number of trips and their expected origins and destinations from TfL's London Transportation Studies (LTS) model and calculates their routes through the highway network based on journey times and distance. It is used to provide an overall impression of the impact of major highway schemes or large residential or employment developments. TfL state that "*LoHAM has been developed over the past decade to provide a consistent basis for highway modelling and the underpinning of planning across the Capital.*"
- 9.34 In consideration of potential large residential or employment developments, the LoHAM model reflects the traffic impact of development within the Opportunity Area in which the Site is located. This includes traffic demand that could arise from locally 'committed development' sites. For the purpose of this assessment, it is assumed that traffic associated with the redevelopment of the Site is not included within the LoHAM traffic predictions, but that traffic associated with all other 'committed development' (see paragraph 9.9) schemes identified in ES Chapter 2, is incorporated within the LoHAM traffic growth predictions. In advance of preparing this Chapter this assumption has been agreed with TfL officers.

[The Guidelines for the Environmental Assessment of Road Traffic, 1993 \(GEART\)](#)

- 9.35 The Guidelines for the Environmental Assessment of Road Traffic (GEART)⁸ are guidelines for the assessment of the environmental impacts of road traffic associated with new developments, irrespective of whether the developments are to be subject to formal Environmental Impact Assessments (EIAs).
- 9.36 The purpose of the guideline is to provide the basis for systematic, consistent and comprehensive coverage for the appraisal of traffic impacts arising from development projects.
- 9.37 GEART is the principal guidance that informs this assessment and the following sections of this chapter contain full details of how the guidance has been applied.

[Pre-application Consultation](#)

[LBH – Environmental Scoping Opinion](#)

- 9.38 In preparing this Chapter, consideration has been given to the EIA Scoping Opinion provided by the LBH in October 2019 (refer to Appendix 2.1). Table 9.1 provides a summary of comments raised in the EIA Scoping Opinion with respect to 'Transport and Access' and how this Chapter will respond.

Table 9.1: Summary of Relevant LBH Scoping Opinion Comments

LBH Comment	Technical Response
Scoping is generally agreed, however, the assessment and supporting information must address the following issues which reflect comments from Transport for London ("TfL") and the Council's Transport section... It is noted that the ES shall include cross-referenced information provided in a separate Transport Assessment ("TA"). the TA must be produced in line with the latest TfL Transport Assessment Best Practice Guidance.	The supporting Transport Assessment (TA) contained within Appendix 9.1, has been developed in accordance with TfL's Healthy Streets TA best practice guidance and is informed by pre-application discussions with LBH Transport Department.
The car park beat surveys for the Site to be done on a 15-minute basis. Surveyors should identify the location and number of trips associated with Nishkam School as these will need to be deducted from the overall Tesco accumulation given the primary trip purpose is not a foodstore trip.	On-site and on-street parking stress surveys have been undertaken. Tesco car parking accumulation surveys have been determined from 24-hour traffic counts Site surveys, undertaken from 3rd July to 9th July 2019, inclusive. An additional Tesco parking accumulation survey was undertaken on Saturday 29th June 2019, which supplemented surveys undertaken in November 2018. On-street parking stress surveys were undertaken overnight on Wednesday 3rd and Thursday 4th July 2019. All baseline surveys were concluded prior to the COVID-19 pandemic that has resulted in much lower traffic flows than previously and are therefore representative of more normal conditions. Survey methodologies, dates and timings have been agreed with TfL and LBH.
Turning counts/surveys are to include Homebase and the Northumberland Avenue junction. The access to the Homebase site is very close to Northumberland Avenue so the relationship between the two, including potential for Northumberland Ave to be used as a short cut by local residents to a relocated Tesco, must be considered.	The junction has been surveyed in respect of turning movements on representative days, these being Saturday 6th July 2019 and Tuesday 9th July 2019. Surveys were undertaken as part of a wider survey exercise that has informed the base capacity analysis, as discussed in the TA (Appendix 9.1).
All pedestrian crossings on Syon Lane are to be retained.	Noted and adhered to; the proposed Site access design incorporates the staggered pedestrian crossing facility between the Site access junction and Northumberland Avenue. The pedestrian crossing located between the Site access and Syon Lane railway station is also retained.
A Stage 1 Road Safety Audit for the redesigned access is required.	Noted and discussed within the TA.
TfL is the responsible highway authority for part of the road network that immediately surrounds the Site. It is understood that TfL has provided detailed pre-application advice in respect of local traffic modelling for the proposed development in their 'Planning Application Modelling Overview'.	Noted; modelling exercise contained within TA, and in this chapter, is informed by TfL modelling discussions and specifications.
The EIA and TA must take into account the Mayor's Transport Strategy and the new Draft London Plan and should, in particular, reflect policy approaches such as the "Healthy Streets, planning for Good Growth" and the Mayoral Mode share targets, as well as Vision Zero agenda. As such, the development needs to be designed in order to achieve mode shift in favour of walking, cycling and public transport.	As discussed above, the TA has been formulated with specific reference to the Healthy Streets approach including a 'Transport Planning for People' Section that presents an Active Travel Zone (ATZ) assessment in adherence TfL guidance. Furthermore, the Development has been designed in respect of the Healthy Streets principles and considers walking, cycling and public transport improvements to complement the 'low car' approach which has been adopted from the outset. The TA recognises the

LBH Comment	Technical Response
	requirements of the adopted Transport Strategy and makes reference to the transport infrastructure proposed within the Transport Strategy to support the development of the wider Opportunity Area.
Local junction impact - VISSIM micro-simulation for the Gillette corner junction is recommended to understand projected vehicle trip distribution.	A VISSIM model has been constructed to the specifications of TfL and LBH. The model has been subject to TfL's Model Audit Process.
Micro-simulation modelling is required to support the highway impact analysis for the development proposals. Please refer to the advice of TfL date June 2019 in respect of modelling requirements with the scope to also include the junction of Wood Lane/Northumberland Avenue. There is no need at this time to include the A315 junctions with Syon Lane, Wood lane, or Spur Road but it is noted that the A315 will form Cycle superhighway 9. Changes are proposed to Busch Corner and the applicant needs to be aware of this, with modelling to be made available by LBH. There may be a need for additional modelling at these 3 junctions on receipt of details of trip generation and trip re-distribution.	Noted and discussed in capacity modelling sections contained within the TA and this Chapter.
The assessment shall demonstrate how the Mayor of London's 'Healthy Streets Approach' has been addressed and its objectives met.	The multi-modal trip generation exercise which has been undertaken to inform associated impact appraisal presented in the TA includes a review of pedestrian capacity impact, distribution/assignment of cycling trips and also provides peak hour bus and rail trip generation by the direction of departure/approach.
Car parking levels should accord with the draft London Plan.	The proposed residential provision of 0.25 spaces per unit is well within the maximum provision of 0.5 spaces per unit as stipulated by the draft New London Plan standards for residential developments within Opportunity Areas. The proposed retail car parking provision accords with the principle of the draft new London Plan which states that " <i>existing parking provision should be reduced to reflect the current approach and not be re-provided at previous levels where this exceeds the standards set out in this policy.</i> "

TfL Pre-application Input

9.39 Pre-application input provided by TfL, is discussed in detail within the TA. Further to the references discussed above, the TfL pre-application specifications included a requirement for the following points, summarised below:

- *Walking and Cycling Improvements:* The Development should incorporate improvements to walking and cycling infrastructure, especially due to the expected future increases in pedestrian and cyclist traffic.
- *The Mayor's Vision Zero:* The TA should identify measures which can be used to eliminate recorded accidents and should demonstrate how the Development will contribute towards the Vision Zero approach.

- Active Travel Zone Assessment (ATZ): Requirement for an ATZ assessment as part of the application submission - this assessment will cover the key routes in the wider area, such as routes to the nearest rail stations, bus stops, parks and amenities and will identify deficiencies that will need to be addressed by the Development.
- Cycle Parking: All cycle parking is required to be designed and laid out in accordance with the guidance contained in Chapter 8 of the London Cycling Design Standards (LCDS)⁹.
- Public transport accessibility: TfL require bus trip generation figures by time and by direction (with the peak hour indicated separately), information which will be used to assess the impact of the Development.
- Residential Car parking provision: A car parking ratio of 0.25 spaces per unit for the residential use is deemed to be in accordance with the London Plan and Draft New London Plan.
- Retail Car parking provision: The retail parking is deemed to be in excess of the Draft New London Plan parking standards. TfL acknowledges that the car parking floors have been designed for future repurposing. Notwithstanding, TfL express an expectation for the Applicant to present how it will discourage overuse of these facilities by those trips which could be made by sustainable means. This could include a charging mechanism to limit usage by those not completing the 'Main / large shop for the week'. Details of proposed car park management are required.
- Car Park Access: It is recommended that barrier controls are not used to access the car park, as they may increase the risk of 'blocking back'.
- Servicing: The TA is required to present the trip generation analysis for servicing and delivery vehicles and demonstrate that the proposed loading bays are adequate to meet the needs of the Development. A Delivery and Servicing Plan is requested as part of the planning application.
- Construction: The application must be accompanied by a Construction and Logistics Plan (CLP) that details construction programme, routes for Heavy Goods Vehicles (HGV)s; frequency of deliveries and loading/unloading locations.
- Travel Planning: A framework travel plan covering all elements of the Development, which sets out the targets and the measures to be implemented, will need to be submitted as part of the planning application. TfL expects that the full travel plan will be secured and monitored as part of a Section 106 Agreement.

9.40 As a consequence of the consultation, TfL has requested that the methodology for the assessment of operational development traffic generation is considered with reference to:

- Surveyed traffic flows and traffic distribution associated with the existing Osterley Tesco store, which will close as a result of the relocation of the Tesco store to the Site;

- Surveyed traffic survey data for the Site's existing Homebase store; and
- A peak hour residential traffic generation rate of 0.33 trips per car parking space.

Study Area

- 9.41 Within the context of the above-mentioned guidelines, policy documents and pre-application discussions, a study area has been defined in contextualising the methodology discussed below.
- 9.42 The study area that was agreed with TfL and LBH for the purpose of micro-simulation modelling is presented in Figure 9.1.
- 9.43 The traffic study area has been formulated by identifying the most likely routes for construction traffic during the demolition and construction phases, including routes to/from the nearest consolidation centre, and key routes/approaches relating to residential/customer traffic for the operational phase of the Development.
- 9.44 With particular reference to the operational phase, the study area has in the first instance been defined in respect of the re-assignment of traffic resulting from the re-provision of the Tesco Osterley store to the Site, with additional consideration being given to likely traffic patterns for future residents at the Site. Routes that extend outside the traffic study area are routes where the Development's traffic has dissipated and/ or include roads with negligible sensitive receptors.
- 9.45 The traffic study area is illustrated in Figure 9.1 and is divided into the following 11 no. separate highway sections, known as links, which are defined as sections of road with similar characteristics and traffic flows:
- 1) A310 Twickenham Road (south of A315, London Road);
 - 2) A315, London Road (west of Syon Lane/ Twickenham Road junction);
 - 3) A315, London Road (east of Syon Lane/ Twickenham Road junction);
 - 4) Syon Lane - North of A315, London Road;
 - 5) Syon Lane - South-east of Homebase Site Access;
 - 6) A4 - East of Syon Lane;
 - 7) A4 - West of Syon Lane;
 - 8) Syon Lane, North of A4;
 - 9) Syon Lane - South-east of Tesco Access (between Grant Way and Tesco);
 - 10) Syon Lane, North of Tesco Access; and
 - 11) Northumberland Avenue.

Characterisation of the Existing Environment

9.46 Characterisation of the existing environment has been informed by a number of sources, including:

- Automatic Traffic Counters (ATCs) count sites commissioned by RHDHV. These sites were installed to capture existing 24-hour traffic flows and speed data for the Links referred to above, between:
 - 3rd July 2019 to the 9th July 2019, inclusive; and
 - 30th September 2019 and the 6th October 2019, inclusive;
- Automatic Number Plate Recognition (ANPR) video surveys commissioned by RHDHV to identify origin-destination counts for trips into and out of the Site and the existing Tesco Osterley site. The ANPR surveys were undertaken to inform how traffic movements would be expected to re-assign within the local highway network, following the removal of the Homebase store and relocation of the Tesco Osterley store. These counts were undertaken on Saturday 29th June 2019 and Tuesday 9th July 2019;
- Manually Classified Turning Counts (MCTC) commissioned by RHDHV were undertaken to survey all traffic movements at the intersections of the links identified above. The MCTC surveys were undertaken on Saturday 29th June 2019 and Tuesday 9th July 2019;
- On-site car parking utilisation surveys for the Site and the existing Tesco Osterley site were undertaken from the 3rd July to 9th July 2019, inclusive. An additional Tesco parking accumulation survey was undertaken on Saturday 29th June, and surveys were also undertaken in November 2018 at the existing Tesco store;
- On-street car parking stress surveys undertaken overnight on Wednesday 3rd and Thursday 4th July 2019;
- Department for Transport (DfT) Annual Average Daily Traffic (AADT) data for counter sites located on the A4, to the east and west of Syon Lane;
- Desktop studies and Site visits; and
- Personal injury collision data sourced from TfL covering all links within the traffic study area the most recent five-year period up to 31st December 2018.

9.47 Seasonality adjustments have been applied to the survey data to derive a suitable estimate of a 'neutral' month.

Methodology for Identifying Sensitive Highway Links

9.48 The sensitivity of a road (link) can be defined by the type of user groups who may use it. A sensitive area may, for example, be a village environment or where pedestrian or cyclist activity may be high, for example near a school. Table 9.2 provides broad definitions of the different sensitivity levels (derived from GEART) that have informed the assignment of link sensitivity.

Table 9.2: Determination of sensitivity of receptors (with reference to GEART)

Definition of a highway link sensitivity	
High	High concentrations of sensitive receptors (e.g. hospitals, schools, areas with high tourist footfall etc.) and limited separation provided by the highway environment. Identified collision (accident) cluster sites.
Medium	A lower concentration of sensitive receptors (e.g. residential dwellings, pedestrian desire lines, etc.) and limited separation from traffic provided by the highway environment.
Low	Few sensitive receptors and/or highway environment can accommodate changes in volumes of traffic.

9.49 In addition to the consideration of the sensitivity of highway links, areas with existing road safety issues and congested junctions have been assigned a high degree of sensitivity.

Screening Process

9.50 The following rules, taken from GEART, have informed the screening process and thereby defined the extent and scale of this assessment:

- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows (or HGV component) are predicted to increase by 10% or more.

9.51 Changes in traffic flow below the GEART Rules (thresholds) are, therefore, assumed to result in no discernible or significant environmental effects and have not, therefore, been assessed further as part of this study.

9.52 For this EIA, GEART Rule 2 is deemed to apply to high sensitivity links and Rule 1 is deemed to apply to medium and low sensitivity links.

Assessment of Effects

- 9.53 Having applied the screening exercise to narrow down the traffic study area to only those links that have the potential to experience a significant effect, it is necessary to establish the significance of any effect. The methodology achieves this by examining the 'magnitude of effect' on the sensitive routes.
- 9.54 The Assessment of Effects has been applied for the operation development to Scenario 4 which considers the proposed development's impacts in the context ('in combination with') of all background growth and cumulative schemes and the Development, as required by the LBH's Scoping Opinion.
- 9.55 A magnitude of the effect is established by applying GEART, which sets out considerations and, in some cases, thresholds in respect of changes in the volume and composition of traffic to facilitate a subjective judgement of traffic effect and significance.
- 9.56 With reference to the GEART guidelines, Table 9.3 sets out the environmental effects that are susceptible to changes in traffic flow and which are appropriate to gauge the effects within the traffic study area.

Table 9.3: Transport Related Effects

Transport Related Effects	
Severance	Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. Severance effects could equally be applied to residents, motorists, cyclists or pedestrians. GEART suggests that changes in the total traffic flow of 30%, 60% and 90% are considered to be slight, moderate and substantial respectively.
Driver Delay	GEART recommends the use of proprietary software packages to model junction delay and therefore estimate increased vehicle delays. However, it is noted that vehicle delays are only likely to be significant when the surrounding highway network is at, or close to, capacity.
Pedestrian delay	Pedestrians can experience delays and difficulties crossing roads related to changes in traffic, volume, composition and speed. GEART advises that in general, increases in traffic will lead to increases in delay, but also notes that delays will also be dependent upon the level of pedestrian activity, visibility and Site conditions. The research was undertaken by the Transport and Roads Research Laboratory in supplementary report 356 (TRRL 356) ¹⁰ developed formulas for calculating the potential for increases in pedestrian delay related to the volume of traffic at different types of crossings.
Pedestrian amenity	Pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width and separation from traffic. GEART suggests that a threshold of a doubling of total traffic flow or the HGV component may lead to a negative impact upon pedestrian amenity.
Fear and Intimidation	Pedestrians can experience fear and intimidation related to traffic, whereby the volume, speed, HGV composition and the proximity to people can increase the levels

	of fear and intimidation experienced. Whilst GEART recognises that there is an absence of commonly agreed thresholds, it does suggest that average traffic flows over 18 hours of 600 – 1,200, 1,200 – 1,800 and 1,800 + could result in moderate, great and extreme impacts, although noting other factors such as the proximity to traffic, speed and pavement width need to be considered.
Accidents and safety	The salient GEART guidance on accidents and safety is as follows: <i>"Where a development is expected to produce a change in the character of traffic (e.g. HGV movements on rural roads), then data on existing accidents levels may not be sufficient. Professional judgement will be needed to assess the implications of local circumstances or factors which may elevate or lessen the risk of accidents, e.g. junction conflicts."</i> In accordance with the guidance, an examination of the existing collisions within the traffic study area has been undertaken to identify any collision clusters with an emerging pattern of collision types.

9.57 Whilst GEART definitions refer specifically to 'driver' and 'pedestrian' movements, the criteria defined also indirectly refers to the Development's environmental effects for car passengers, cyclists, motorcyclists and those travelling by bus.

9.58 Table 9.4 details the assessment framework used herein, adapted from GEART. These thresholds are a guidance only and provide a starting point for assessment. Additional evidence (for example more detailed traffic analysis and Site observations), and professional judgement, have been used to inform analysis of the magnitude of the effect.

Table 9.4: Transport Effect Assessment Framework

Likely Effect	Magnitude of effect			
	Negligible	Minor	Moderate	Substantial
Severance	Change in the total traffic flow of less than 30%	Change in total traffic flows of 30-60%	Change in total traffic flows of 60-90%	Changes in the total traffic flow of over 90%
Pedestrian amenity (including cyclists)	Changes in traffic flow (or HGV component) less than 100%	Greater than 100% increase in traffic (or HGV component) and a review based upon the quantum of vehicles, vehicle speed and pedestrian/cycle demand		
Fear and intimidation**	Average traffic flows over 18 hours of less than 600 vehicles/hour or 1,000 HGVs over 18 hours		Average traffic flows over 18 hours between 600 –1,200 vehicle/hour or more than 1,000 – 2,000 HGVs over 18 hours	Average traffic flows over 18 hours of more than 1,200 vehicles/hour or more than 2,000 HGVs over 18 hours
	Potential vehicle speeds and pedestrian provision are also a consideration.			
Pedestrian delay	A review of existing crossing facilities, pedestrian demand and calculated delays.			
Accidents and Safety	Analysis of Personal Injury Collision records to identify clusters and/or trends.			
Driver Delay (incl. bus service delay)	Vehicle delay and queues as forecast using junction modelling software (VISSIM). This assessment considers the magnitude of impact in relation to the potential increase in journey times resulting from the micro-simulation modelling, as detailed below. The assessment recognises the sensitivity around delay to bus service operations, which TfL have identified as having a high priority.			

	Journey time increase to general traffic of up to 60 seconds Journey time increase to bus services of up to 30 seconds	Journey time increase to general traffic in excess of 60 seconds Journey time increase to bus services in excess of 30 seconds	Journey time increase to general traffic in excess of 90 seconds Journey time increase to bus services in excess of 45 seconds	Journey time increase to general traffic in excess of 120 seconds Journey time increase to bus services in excess of 60 seconds
Notes: <i>** Crompton 1981, uses the terminology moderate, great and extreme to describe the magnitude of effect, impact less than moderate have been interpreted to be negligible to minor and impacts of moderate remain as moderate and great too extreme as substantial.</i>				

Significance Criteria

- 9.59 The significance of effects has been defined according to the matrix adopted for this ES (refer to Chapter 2: EIA Methodology) which combines the magnitude of effect with the sensitivity of the receptor, as shown in Table 9.5.
- 9.60 With regard to the remaining effects, the guidelines state that the following rules should be used as a screening process to delimit the scale and extent of the assessment:

"Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%) and Include any other specifically sensitive areas where traffic flows have increased by 10% or more."

- 9.61 The GEART guidelines go on to state that any increases in traffic flows of less than 10% are generally accepted as having no discernible environmental impact as daily variance in traffic flows can be of equal magnitude.
- 9.62 The 30% threshold relates to the level at which humans may perceive change and there may, therefore, be an effect. Effects above this level, therefore, do not necessarily suggest that there is a significant impact, only that further consideration is required to assess the significance.

Table 9.5: Scale of Effect Criteria

Magnitude of Effect	Sensitivity of Receptor		
	High	Medium	Low
Major	Major adverse/beneficial	Moderate to Major adverse/beneficial	Minor to Moderate adverse/beneficial
Moderate	Moderate to Major adverse/beneficial	Minor to Moderate – adverse/ beneficial	Minor adverse/ beneficial
Minor	Minor to Moderate adverse/beneficial	Minor adverse/ beneficial	Negligible adverse/ beneficial

Negligible	Negligible to Minor adverse/beneficial	Negligible adverse/beneficial	Negligible adverse/beneficial
------------	--	-------------------------------	-------------------------------

9.63 Based on professional judgement, moderate and major effects are considered significant in EIA terms.

Demolition and Construction

9.64 Indicative construction information is presented in Chapter 5 Construction Methodology & Phasing.

9.65 Typically, the most effective estimates of construction traffic data are generated by the appointed contractor. These are often presented within a Construction Environmental Management Plan (CEMP), a Method Statement and / or a Construction Logistics Plan (for sites within Greater London). Such documents can contain estimates of workforce movements to/from the Site, deliveries to the Site, removal of material from the Site and trips made by associated trades. An Outline Design & Construction Method Statement and CEMP is submitted with the planning application (see Appendix 5.1). A detailed CEMP would be secured by planning condition.

9.66 However, as a contractor has not yet been appointed, the assessment gives consideration to the TRICS "Construction Traffic – Research Report" (February 2008)¹² document, which provides guidance on the numbers (and types) of construction vehicles that could be expected in association with new build development.

9.67 The Construction Traffic – Research Report states that:

"Constructing Excellence recorded 'Commercial Vehicle Movement KPI' as part of the 2007 UK Construction Industry Key Performance Indicators. This uses a measure of the total number of commercial vehicle one-way movements onto a site (collected from security or other gate records, contractor notes and waste transfer notes) against the total project value.

*"Based on data collected in 2006, the total recorded movements onto a site per £100,000 of project value is **29.4 one-way trips** (www.kpizone.com). For deliveries of materials, the indicator simply considers the final delivery journey to site, therefore not accounting for off-site storage, consolidation of loads or other factors"*

9.68 Utilising the figure of 29.4 one-way trips per £100,000 of project value (as set out on the Construction Traffic – Research Report) and by applying this to the estimated contract sum (total value of the Development), it can be calculated that the entire demolition and

construction programme for the Development could generate in the region 56,804 one-way trips. This calculation includes an additional allowance of trips during the 'basement and podium' stage of development, at which time higher construction traffic flows might be expected.

9.69 In order to understand the proportion of total vehicle movements that could be HGVs, reference has been made the Highbury Redevelopment (2006) as referenced in the TRICS "Construction Traffic – Research Report" (February 2008)¹² document, which includes the percentage split of different vehicle classifications. The percentage split of different vehicle classification is presented within Table 9.6. Table 9.6 also provides an estimate of the number of one-way movements undertaken by different construction vehicle classifications.

Table 9.6: Demolition and Construction Vehicle Numbers and Vehicle Classification

Vehicles	Car / Pickup / 3.5T Van	7.5T Box Van / Panel Van	Low Loader & Artic	Ready Mix Concrete Truck	Mobile Crane	Skip Lorry	32T Tipper Truck	Total
% of trips made by vehicle type	10.45%	18.07%	2.38%	22.77%	0.05%	1.29%	45.07%	100%
Predicted Number of trips	5936	10265	1352	12934	28	733	25602	56850
<i>Percentage split based upon the Highbury Redevelopment</i>								

9.70 Table 9.6 demonstrates that 40,649 of the total one-way movements could be considered as HGV movements (71.56%). Accordingly, the total number of two-way trips (arrivals and departures) would be 113,700 including 81,363 which could be considered as HGV movements.

9.71 The traffic forecast presented herein assumes that demolition and construction work would be restricted to the following times:

- Monday to Friday, 08:00 – 18:00;
- Saturday, 08:00 – 13:00; and
- No activity to take place on a Sunday, or Bank Holidays.

9.72 These restrictions would result in result in demolition and construction vehicle movements occurring over approximately 275 days per year (5.5 days per week at 50 weeks per year). It is estimated that demolition and construction would take an estimated five years, from August

2021 to July 2026); therefore, the total duration of the project would extend to 249 working weeks or 1,494 working days.

- 9.73 Assuming a uniform distribution of demolition and construction activities over the five years, it can be calculated that on average there could be approximately 76 two-way trips undertaken per day (56,850 divided by 1,494 working days a year).
- 9.74 However, it is recognised that there would be some variation in flow on a day-to-day basis and as different phases of the Development take place. Furthermore, fewer trips would take place on a Saturday as the operational Site activity would cease at 1:00pm.
- 9.75 Peak construction traffic movements have been assessed based on the indicative demolition and construction programme, and the recognition that peak construction traffic demands are likely to take place during the basement dig as excavated material would be transported off site for disposal. Consideration has also been given to the cumulative construction effects relating to the redevelopment of the existing Tesco, Osterley site, which is linked to the works to be undertaken at the Site (refer to paragraph 9.85 and in the Cumulative Effects section of the chapter).
- 9.76 Figure 9.2 illustrates that anticipated profile of construction traffic movements, and this identifies that peak construction traffic activity would take place for a short period (three weeks) in 2023. At this time construction work would be undertaken on the Development's basement/podium, the new Tesco store, and residential buildings A, B1, C, D and E. This Chapter assesses 'construction' traffic effects with reference to the peak period of construction traffic in order to assess the worse-case scenario.
- 9.77 In terms of vehicle routing, the proximity of the A4 Great West Road provides suitably convenient access to the strategic road network and, as such, the majority of construction trips relating to the Development will be expected to access/egress via the A4 Great West Road. For the purpose of a robust assessment of construction traffic impacts, this Chapter assesses the implications of 75% of construction traffic routing to and from the Site from the east, and 75% of construction traffic routing to and from the Site, from the west. It is assumed that no HGV construction-related traffic movements would route to and from the Site from the direction of London Road or Spur Road, via Syon Lane.
- 9.78 The assessment assumes that cars and Light Goods Vehicles (LGVs) would also be required to route to and from the Site via the A4 Great West Road, however, the EIA traffic data does include an allowance of some of these vehicles to route to from the Site via Syon Lane, both

north and south of the A4 Great West Road. The assumption is that 50% of non-HGV traffic would route to/from the Site via Syon Lane.

- 9.79 At the time of drafting the ES, a Contractor for the demolition and construction has not been appointed. However, an Outline Construction and Logistics Plan (CLP) has been prepared and submitted with the planning application. The vehicle routing strategy adopted in this assessment is consistent with the routing strategy adopted in the CLP. The Outline CLP will be developed post consent by the appointed Contractor (in liaison with LBH).

Operational Development

- 9.80 As set out in Chapter 2 EIA Methodology, the Tesco Osterley Development and the Development are the subject of separate planning applications, and both applications are accompanied by separate Environmental Statements. It is, however, a factual reality that the schemes are interdependent. The new Tesco store opening on the Site, and the demolition of the existing Tesco store to make way for new residential development are dependent on the other respective development proceeding. There would not be two Tesco stores open for trading at the same time on these sites, and planning obligations are proposed to control this scenario and prevent this from taking place. An obligation binding the existing Tesco site is proposed to restrict demolition of the existing Tesco store until trading commences at the replacement Tesco store. Further, an obligation binding the existing Homebase site is proposed to restrict the new store from commencing trading until trading has ceased at the existing Tesco store.
- 9.81 Accordingly, this chapter has focussed on the assessment scenarios where both developments are delivered (Scenario 4). Assessments of the scenario where only the Development is delivered without the Tesco Osterley Development being delivered has also been undertaken to ensure the effects of the Development in isolation has been assessed. However, as the results of this scenario assessment gives rise to unrealistic results that do not reflect the factual reality of the delivery of both developments, the results of that scenario are set out in Appendix 9.2.
- 9.82 The Development would be supported by physical infrastructure enhancement measures, both within the Site and externally, which are intended to encourage travel by sustainable modes, to reduce traffic congestion and reduce the associated environmental effects of traffic movements. These measures include:

- The provision of an off-street cycle lane along the A4 Great West Road, adjacent to the Site's northern boundary. The facility would be introduced as part of the Development-related highway (s278) works and would act to improve cycling connectivity in the local area;
- The provision of an on-site concierge to coordinate deliveries and remove the need for delivery drivers to make more than one journey to the Site to deliver a package.
- A minimum of 896 long stay cycle parking for the residential land use would be provided, alongside 88 long stay and 116 short stay for the commercial land use

9.83 The implications of the Development on traffic movements locally is:

- Traffic associated with the existing Homebase store would be removed from the Site as a result of the Tesco store's demolition;
- Tesco traffic that currently routes to and from Syon Lane north of the A4 would be redistributed as a result of the Development, with future Tesco traffic gravitating to Syon Lane south of the A4 Great West Road;
- Traffic to the new Tesco store would reduce in comparison to existing, due to the constraint imposed by a reduction in car parking numbers at the new Tesco store (circa 600 existing spaces down to 400);
- Residential traffic would be generated by the Development that doesn't currently exist locally; and
- Some petrol filling station (PFS) traffic movements would be removed from the local highway as a result of the demolition and removal of the Tesco PFS at Tesco, Osterley.

9.84 Surveys of traffic movements at the Development, and at the Tesco Osterley site, have been undertaken in parallel with surveys for the adjacent highway network.

9.85 To obtain an understanding of the traffic volumes and movement profile in the vicinity of the Site, 24-hour traffic surveys have been undertaken at both the Site and the Tesco Osterley site, from Wednesday 3rd July 2019 to Tuesday 9th July 2019, inclusive. These surveys were supported by automatic number plate recognition surveys undertaken at the accesses to the Site and the Tesco Osterley site, and on the highway, which combined to provide a traffic distribution for Tesco and Homebase traffic.

9.86 At TfL's request, the traffic distribution for proposed residential traffic is assessed with reference to their strategic model, LoHAM.

Limitations and Assumptions

- 9.87 The EIA traffic data calculations have been based on the provision of up to 100 residential car parking spaces on the Site. An additional 10% contingency has been applied to residential traffic generation numbers to cater for any future design variations.
- 9.88 All efforts have been made to ensure that the information used as a basis for the assessment is accurate and up to date. The team is not aware of any limitations of the underlying information or of any constraints that would materially affect the evaluations.
- 9.89 This chapter has been based on the best available information at the time of publication, including feedback from consultations.
- 9.90 The chapter has taken a precautionary approach to adopt conservatism in the assumptions made and any scenarios assumed so that in general a reasonable 'worst-case' scenario was assessed.

Baseline Conditions

- 9.91 This sub-section provides a detailed description of the highway environment within which sensitive receptors are located. Further detail on the public transport network, traffic flow data and road safety information is provided in the TA.

Local Highway Context

- 9.92 The Site is bordered by Syon Lane to the west, Syon Gate Way to the south and Great West Road to the north. A summary of the local highways network in the vicinity of the Site and the key receptor links are provided below.

Syon Lane

- 9.93 Syon Lane is a local distributor road that is aligned to a northwest-southeast alignment within the adjacencies of the Site. Syon Lane accommodates two-way traffic in the vicinity of the Site and stretches between Osterley Park and House in the north to the A315 London Road at its southern extent. A 30mph speed restriction operates at Syon Lane.
- 9.94 The Site is afforded a single point of vehicular access from Syon Lane. The carriageway at Syon Lane provides a width of approximately 13m adjacent to the Site access and incorporates a ghost island for right-turning traffic on the northbound approach to the Site. The

carriageway incorporates two northbound and two southbound lanes in the peripheries of the Site access junction.

- 9.95 A staggered signalised pedestrian crossing is provided approximately 30m north of the Site access junction whilst a direct 'straight across' signalised crossing is provided approximately 75m south of the junction in proximity of Syon Lane Rail Station. The station is an approximate 120m walk distance to the south of the Site.
- 9.96 The Site access road provides a carriageway width of approximately 14m at its junction with Syon Lane and includes a central reservation segregating inbound and outbound traffic which incorporates dropped-kerbs and tactile paving.
- 9.97 On the western edge of Syon Lane, opposite the Site, there is resident permit holder parking, which operates from Monday to Friday, 9am-6pm. This is part of the Controlled Parking Zone (CPZ) SLS.

Great West Road

- 9.98 The A4 Great West Road is a two-way dual carriageway road, which lies on the TfL Red Route Road Network (TLRN). The A4 Great West Road connects with the M4 at Brentford on route to Central London to the east and with Heathrow Airport to the west.
- 9.99 There are wide, level footways provided on A4 Great West Road. Both flanks of the A4 are provided with adequate street lighting. There is also a segregated cycleway which connects the Site to Osterley station, situated approximately 1.8km to the west of the Site. The cycleway terminates at the junction of Syon Lane/Great West Road.
- 9.100 The closest crossing facilities are on the Gillette corner, where an underpass is provided to allow pedestrians safe crossing from south to north. Furthermore, pelican crossings are provided at the junction on both eastern and western flanks of Syon Lane. These crossings are equipped with tactile paving and dropped kerbs.
- 9.101 A staggered toucan crossing is provided at the north-western corner of the Site which facilitates the north-south crossing of the A4 for pedestrians and cyclists. At the northern edge of the carriageway, this signalised crossing provides connectivity with Harlequin Avenue which also incorporates a signalised pedestrian crossing for east-west movements at the northern side of the A4.

- 9.102 A pedestrian footbridge is provided approximately 500m to the east of the site, providing a pedestrian crossing over the A4. Transport Avenue, the location at which Golden Mile station is proposed, is a further 150m to the east.
- 9.103 Segregated cycle lanes are provided in areas of kerbed pavement flanking the A4 Great West Road carriageway at stretches to the east and west of Gillette Corner.
- 9.104 A 40mph speed limit operates at the A4 Great West Road in the vicinity of the Site.

Syon Gate Way

- 9.105 Syon Gateway is a privately managed access road which operates at the southern perimeter of the Site. This road serves access for parking facilities associated with the commercial properties located to the east of the Site.
- 9.106 Syon Gateway forms a junction with Syon Lane approximately 90m south of the Site access junction. The intersection of Syon Gateway and Syon Lane forms a simple priority junction.
- 9.107 Syon Gateway provides a carriageway width of around 5.5m.

Northumberland Avenue

- 9.108 Northumberland Avenue is a two-way single carriageway which adjoins with Syon Lane approximately 20m to the south of the A4 junction. This section of highway operates under a 20mph zone and provides an alternative connection from Syon Lane to Wood Lane in the West.
- 9.109 There are wide, level footways provided on Northumberland Avenue. Both flanks are also provided with adequate street lighting.
- 9.110 There is resident permit holder parking which operates Monday to Friday between 9am and 6pm. This is part of the Controlled Parking Zone (CPZ).

London Road (A315)

- 9.111 The A315 London Road is an arterial road that operates to an approximate east-west alignment approximately 500m south of the Site. To the east, it connects to the A205 at Kew Bridge and provides connectivity with the M4 and A406 North Circular Road at Chiswick

Roundabout. To the east, the A315 extends approximately 14km to Staines-upon-Thames and facilitates connectivity to the A30 and A308.

Twickenham Road (A310)

9.112 The A310 operates at a broadly north-south orientation to the south of the Site. At its northern extent, the A310 forms a signalised intersection with Spur Road and London Road (A315), approximately 500m south of the Site.

9.113 The A310 extends southbound through Twickenham and broadly follows the alignment of the River Thames providing connectivity to the A316 Chertsey Road, A305 Heath Road and A313 at Teddington. At its southern extent, the A310 intersects the A308 in the proximity of Kingston Bridge and Kingston Town Centre.

Car Dealership Access Road

9.114 A Skoda car dealership operates immediately to the east of the Site which is served by a two-way access road that flanks the eastern perimeter of the Site. The access road forms a priority junction with the westbound carriageway of the A4 Great West Road with a central island separating the inbound and outbound lanes of the access road.

Existing Public Transport Network

9.115 The Site is well-positioned to be accessed by public transport, due to its proximity to Syon Lane station, Osterley Station and a number of bus services.

Existing Bus Connectivity

9.116 There are a number of bus stops close to the Site, with two located in the immediate adjacencies of the Site on Great West Road and Syon Lane.

9.117 The key stops and their destinations are presented in Table 9.7.

Table 9.7: Key local bus services

Service	Route	Direction (Towards)	First Bus	Last Bus	AM Peak	PM Peak	Sat	Sun
H91	Hounslow West Station – Osterley Station –	Hounslow West Station	05.10	23.50	6ph	6ph	5ph	4ph

(Great West Road)	Wood Lane – Gillette Corner – West Cross Centre – Boston Manor Road – Gunnersbury Station – Hammersmith Bus Station	Hammersmith Bus Station	05.0 0	23:4 0	6ph	6ph	5ph	4ph
H28 (Syon Lane)	Bulls Bridge Tesco – Beaufort Gardens – Bath Road – Hounslow High Street – Hounslow East Station – Thornbury Avenue/Great West Road – West Middlesex Hospital – Syon Lane Station – Tesco Osterley	Bulls Bridge Tesco	05:5 0	23:3 0	3ph	3ph	3ph	2ph
		Tesco Osterley	05:5 0	23:3 0	3ph	3ph	3ph	2ph
235 (London Road)	Three Fishes – Sunbury Station – Feltham Tesco – Hounslow High Street – Thornbury Road – Isleworth Station – Wood Lane – Syon Lane -Brentford County Court – Great West Quarter	Three Fishes	05.0 5	00.0 0	7ph	7ph	6ph	5ph
		Great West Quarter	05:0 5	00:0 5	7ph	7ph	6ph	5ph
237 (London Road)	Frampton Road – Hounslow High Street – Isleworth Station – Syon Lane – Brentford County Court – Kew Bridge Station – Shepherd’s Bush Green – White City Bus Station	Frampton Road	04.5 5	00.2 5	7ph	7ph	7ph	5ph
		White City Bus Station	05.0 5	23:5 5	7ph	7ph	7ph	5ph
267 (London Road)	Hammersmith Bus Station – Gunnersbury Station – Kew Bridge Station – Brentford County Court – Syon Lane – West Middlesex Hospital – Fullwell Bus Station	Hammersmith Bus Station	05:0 1	23:4 1	5ph	5ph	5ph	4ph
		Fullwell Bus Station	05:4 9	00:3 1	5ph	5ph	5ph	4ph
E8 (London Road)	The Bell – Isleworth Station – Syon Lane – Brentford Station – Boston Manor Station – Ealing Broadway Station	The Bell	04:0 0	00:5 0	7ph	7ph	7ph	7ph
		Ealing Broadway Station	04:5 0	01:1 5	7ph	7ph	7ph	6ph
N9 (London Road)	Heathrow T5 – Hounslow West Station – Wood Lane – Syon Lane – Brentford County Court – Gunnersbury Station – Hammersmith Station – High Street Kensington – Hyde Park Corner – Charing Cross Station – Aldwych	Heathrow T5	23:5 5	04:5 5	3ph	3ph	3ph	3ph
		Aldwych	23:3 0	05:2 0	3ph	3ph	3ph	3ph

9.118 There are seven bus services within walking distance of the Site. The H91 and H28 buses run adjacent to the Site, along Great West Road and Syon Lane respectively. The 235, 237, 267, E8 and N9 buses can be accessed from London Road, at bus stops X/W. All routes provide at

least three services per hour, while the most frequent services, the 235, 237 and E8 provide seven services per hour.

Existing Rail Connectivity

- 9.119 Syon Lane Station to the south of the Site provides National Rail services direct to London Waterloo, Mortlake and Weybridge.
- 9.120 Syon Lane railway station is on the Brentford loop of the South Western Railway network. At Syon Lane Station, there is a frequent service connecting the Site with Central London. There are approximately 7 trains per hour to London Waterloo and Mortlake respectively. There are 3 trains per hour to Weybridge.
- 9.121 Clapham Junction is a major railway station on the South Western Railway network and is accessible via a train journey of 20 minutes from Syon Lane. Clapham Junction is served by London Overground, Southern and Gatwick Express services.
- 9.122 With consideration of the Institution of Highways and Transportation guidance referenced above which recommends a preferred maximum walking distance of 2km for commuting journeys, it is further noted that Osterley Station is located within 1.8km of the Site (to the north) and provides access to the London Underground network via Piccadilly line services. At Osterley Station, the Piccadilly line has a peak frequency of 12 trains per hour in each direction, with trains timetabled approximately every 5 minutes.
- 9.123 A summary of services from Syon Lane Station can be seen in Table 9.8.

Table 9.8: Syon Lane Station Rail Services – Destinations and Frequencies

Destination	Weekday AM Peak (Per Hour)	Weekday PM Peak (Per Hour)	Saturday (Per Hour)	Sunday (Per Hour)	Journey Time (Minutes)
London Waterloo*	2	2	6	2	35-52**
Feltham	2	2	2	1	11
Windsor & Eton Riverside	2	2	2***	1	33
<i>* trains also stop at both Clapham Junction and Vauxhall stations **as Syon Lane is on the Hounslow loop when it travels anti-clockwise it takes 52 minutes to London Waterloo Rail Station ***No Direct service change at Feltham</i>					

- 9.124 Although not currently developed, with respect to future travel to/from the Site it is noted that the number of proposed rail improvements are being planned in the local area:

- Southall Rail Link (Golden Mile Station) – Provision of a strategic interchange to TfL’s Elizabeth Line and interchange to the Great Western Mainline;
- Southern Rail to Heathrow Airport - LBH supports proposals for a new rail line to Heathrow Airport that includes a new station serving Bedfont, connecting to Feltham and London Waterloo;
- West London Orbital (WLO) Overground line expansion - connecting Hounslow with Cricklewood and Hendon via Old Oak, Neasden and Brent Cross. This would create a new route linking Crossrail and HS2 with the area; and
- Piccadilly Line - Piccadilly Line Improvements Signalling improvements and new stock will allow faster trains, increasing capacity and frequency, and is expected to be delivered by 2023.

9.125 These proposed infrastructure improvement measures have not influenced the assessment of Development impacts but would, if implemented, provide an opportunity for more Site visitors, residents and staff to travel to and from the site by non-car modes of travel, reducing the potential traffic impact of the Development’s.

Public Transport Accessibility Levels (PTALs)

9.126 Public Transport Accessibility Levels (PTALs) are the GLA’s adopted methodology for the measurement of accessibility to a specific location, by public transport.

9.127 The methodology takes account of the walk time from a specific location to the point of access to public transport services. The methodology also accounts for the frequency of public transport services, to identify an average wait time for each accessible service.

9.128 The calculation allows bus services within a 640m walking distance of the ‘point of interest’ to be included within the calculation. Mainline rail and underground services located within 960m of the ‘point of interest’ can be included within the calculation.

9.129 The methodology calculates an Accessibility Index (AI) and the value equates to a PTAL rating, as summarised below:

- PTAL Rating 1 (AI range 0 to 5) - Very poor;
- PTAL Rating 2 (AI range 5.01 to 10) – Poor;
- PTAL Rating 3 (AI range 10.01 to 15) – Moderate;
- PTAL Rating 4 (AI range 15.01 to 20) – Good;
- PTAL Rating 5 (AI range 20.01 to 25) – Very Good; and

- PTAL Rating 6 (AI range 25+) – Excellent.

9.130 Based on the TfL PTAL calculator, the Site has a PTAL AI of 6.84, which equates to a 'Poor' public transport accessibility of 2. However, the southern edge of the Site falls in an area of PTAL 3, due to the connections available at Syon Lane Station.

Future Anticipated Baseline PTAL Levels

9.131 As a result of the emerging transport connectivity in the local area, the PTAL rating of the Site would increase.

9.132 The E1 bus service, which would stop adjacent to the Site, would provide 6 additional services per hour. The WLO rail link would provide between 4-8 services per hour, subject to further consultation. This would improve AI from 6.84 to 13.09, if four additional London Overground trains are assumed. If eight trains per hour are assumed, the AI rating would increase further to 14.77. This would increase the PTAL score to 3, bordering on 4.

9.133 The anticipated future PTAL levels are summarised in the Great West Corridor Strategic Transport Study, Full Report (May 2019) – this is a joint LBH and TfL document. In discussing both bus and rail public transport capacity improvement options, the report says that "*both packages are effective in reducing bus and rail crowding levels and in improving public transport connectivity and accessibility levels (PTAL) in the GWC area. The level of increase in PTAL achieved with each package is very similar in the central and western sectors - levels increase from 2 to 3 in the 2015 base year to 3 to 4 with both intervention packages.*"

9.134 This is reinforced by the analysis undertaken by the GWC Strategic Transport Study in Figure 9.3, which shows the changes to PTAL levels in the area based on proposed bus and rail improvements.

9.135 This should be considered a conservative estimate of prospective PTAL improvement, as other emerging public transport improvements where there are no published details of hourly service frequencies have not been included in this calculation.

Walking Connectivity

9.136 The Institution of Highways and Transportation guidance 'Providing for Journeys on Foot' 2000¹³ provides guidance of widely considered acceptable walk distances in relation to local amenities and key services. The recommended average length of a walking journey is 1km.

It further recommends a preferred maximum walking distance of 2km for commuting journeys and 1.2km for other journey destinations.

- 9.137 The National Travel Survey (NTS) (2018)¹⁴ guidance states that walking is particularly significant in urban areas due to the proximity of basic amenities. Walking statistics in London support this, as around 33% of all journeys are made on foot. This is largely due to high population density and low car-use in London, relative to the rest of the UK.
- 9.138 Syon Lane railway station is considered to be a key destination for pedestrians. The route to Syon Lane railway station is along Syon Lane, where approximate 2m wide street lit footways are located on both sides of the carriageway. Large sections of the footway on Syon Lane are separated from the carriageway by a grass verge, providing an improved environment for pedestrians.
- 9.139 As mentioned above, Syon Lane is well served for pedestrian crossing points in the vicinity of the Site.
- 9.140 To the north of the Site, signal-controlled crossings are present at the Syon Lane/A4 junction (Gillette Corner), in addition to a subway link which enables pedestrians to traverse the A4 via segregated infrastructure. At the western arm of the Gillette Corner junction a staggered toucan crossing, incorporating a generously dimensioned refuge island, facilitates controlled pedestrian and cycle crossing in a north-south orientation.
- 9.141 To the south, Syon Lane and Spur Road serve residential frontages which provide an environment that is conducive to pedestrian activity. The pedestrian infrastructure provided at these roads is well suited to the highway context and provides connectivity to the pedestrian network and facilities available at London Road (A315).
- 9.142 Great West Road incorporates pedestrian footways to the north and south of the carriageway that facilitates pedestrian connectivity to the east and west of the Site. At the southern peripheries of the A4 Great West Road, to the west and east of the Site, a shared pedestrian-cycle route is provided with appropriate signage and surface markings indicating pedestrian and cycle zones within the footway.
- 9.143 A summary of local services, facilities and likely points of interest is provided within Table 9.9.

Table 9.9: Summary of local facilities

Facilities	Location	Approximate walking distance
Syon Lane Station	Syon Lane	100m
Osterley Station	Great West Road	2000m
Marlborough School	Syon Lane	800m
Syon Park	London Road	650m
Nishkam School	Syon Lane	850m
West Middlesex Hospital	Twickenham Road	1000m
Sky Campus	Syon Lane	550m
Brentford Town Centre	High Street	1500m

Cycling Accessibility

- 9.144 A distance of 3.1 miles (5.0km) is considered a distance many people could substitute car trips for cycle trips. There are many current and proposed opportunities for cyclists within the vicinity of the Site.
- 9.145 Syon Lane operates under a 30mph speed limit and there is no dedicated cyclist infrastructure on this route. However, there are dedicated separate cycling infrastructure on the A4 Great West Road, enabling links between the Site and Osterley town centre to the west and Boston Manor Park and Chiswick to the east.
- 9.146 As observed, and in accordance with TfL's 'Local Cycle Guide 6'; the partially off-road cycle route provided at the A4 Great West Road in the vicinity of the Site provides linkage to a chained route that extends through parks and along towpaths for notable stretches of the A4. The cycle route extends along an east-west axis as an off-carriageway cycleway and is located within 100m access of the Site.
- 9.147 In addition, Northumberland Avenue, off Syon Lane to the west of the Site, is categorised by the Local Guide 6 as 'other roads that have been recommended by cyclists', facilitating cycle connectivity between Osterley, Old Isleworth and Richmond Park.
- 9.148 To the south of the Site, a stretch of London Road (A315), approximately 600m from the Site, is identified by TfL's local cycle guide as a route "signed or marked for use by cyclists on a mixture of quiet or busier roads".
- 9.149 Syon Lane Rail Station incorporates cycle parking facilities in the form of sheltered and unsheltered stands provided at the platforms.
- 9.150 Brentford neighbourhood centre is considered to be suitably located for cycle access from the Site with the main route along London Road incorporating both cycle lanes and cycle/bus lanes, separating cyclists from the main streams of vehicular traffic.

- 9.151 Construction of Cycle Superhighway 9 commenced in 2019 with the route expected to be completed by 2021, providing a 7km section of the cycleway between Kensington Olympia and Brentford. The new cycle superhighway will provide a prominent and attractive cycling link from the Site towards Central London.
- 9.152 Furthermore, a cycle track from Syon Lane to Boston Manor Road Cycle track has been approved. The changes are intended to improve safety for all road users and make cycling a safer, and more appealing, travel option for employees and local residents of the area.

Baseline Traffic Data

- 9.153 As discussed earlier in this Chapter, existing 24-hour traffic flows and speed data for the study area has been captured from Automatic Traffic Counters (ATCs) count sites between Wednesday 3rd July to Tuesday 9th July 2019, inclusive. It should be emphasised that all traffic surveys were conducted prior to the Covid-19 pandemic and the scope of assessment, dates and time periods agreed with both TfL and LBH and can therefore be considered representative of neutral conditions.
- 9.154 The surveyed traffic flow data is summarised in Table 9.10 for all links under consideration.

Table 9.10: Baseline Traffic Data – 2019 Surveyed Traffic Flows

Receptor Location	24hr AADT*			12hr AAWT** (07:00 – 19:00)		
	All Vehicles	HGVs** *	% HGVs	All Vehicles	HGVs** *	% HGVs
1. A310 Twickenham Road (south of A315, London Road)	21,528	1,610	7.48%	15,800	1,328	8.40%
2. A315, London Road (west of Syon Lane/ Twickenham Road junction)	10,460	1,294	12.37%	8,232	1,029	12.50%
3. A315, London Road (east of Syon Lane/ Twickenham Road junction)	14,062	1,753	12.47%	10,948	1,334	12.18%
4. Syon Lane - North of A315, London Road	18,563	819	4.41%	13,536	734	5.42%
5. Syon Lane - South-east of Homebase Site Access	21,941	1,537	7.01%	15,641	1,086	6.95%
6. A4 - East of Syon Lane	51,862	2,329	4.49%	41,387	1,868	4.51%
7. A4 - West of Syon Lane	41,760	1,921	4.60%	33,293	1,541	4.63%
8. Syon Lane, North of A4	25,138	817	3.25%	19,297	630	3.27%
9. Syon Lane - South-east of Tesco Access (between Grant Way and Tesco)	19,989	1,122	5.61%	15,100	807	5.34%
10. Syon Lane, North of ASDA Access	18,856	479	2.54%	14,490	369	2.55%
11. Northumberland Avenue	3,672	54	1.47%	2,823	43	1.53%

* AADT – Annual Average Daily Traffic flows, i.e. average traffic flows over a week
 **AAWT – Annual Average Weekday Traffic flows, i.e. average traffic flows between Monday and Friday
 ***Includes buses
 Note: Figures adjusted to represent a neutral month

9.155 The traffic surveys were undertaken in June and July 2019, but predominantly in the month of July. To this end, the figures presented in Table 9.10 above incorporate seasonality adjustments to represent a 'neutral month'.

Traffic Growth

9.156 This section sets out the processes to establish a range of future year baseline scenarios to assess the worst case construction and operation traffic demand.

9.157 Background traffic surveys were undertaken to support the Development in 2019 and TfL have requested that future baseline traffic flows are calculated with reference to traffic growth figures generated from TfL's London Highway Assignment Model (LoHAM).

9.158 To assess traffic growth from 2019 to 2031, and to the interim years of assessment (2025, 2026, 2028 and 2034) LoHAM model data has been reviewed and traffic growth figures extrapolated to identify traffic growth, year on year, from 2012 to 2031.

9.159 The LoHAM data provides different traffic growth rates for cars, taxis, light goods vehicles (LGV) and heavy goods vehicles. What is evident from the data is that overall, at the A4/Syon Lane (Gillette Corner) junction the LoHAM traffic model predicts an overall increase in traffic flow from 2019 to 2031.

9.160 Future baseline traffic flows within this assessment refer to LoHAM traffic growth statistics. An average AM Peak/ PM Peak traffic growth rate has been generated from the LoHAM data for each assessment year under consideration and this has been applied to both weekday and weekend traffic flows. The adopted growth rates are as detailed in Table 9.11.

Table 9.11: LoHAM Traffic Growth Factors

Highway Link	Assessment Year				
	2023	2025	2026	2028	2031
A4 (West)	1.013	1.021	1.025	1.034	1.049
Syon Lane North	1.037	1.058	1.069	1.091	1.128
A4 East	1.002	1.004	1.005	1.008	1.014
Syon Lane South	1.004	1.008	1.012	1.020	1.037

Baseline Road Safety

9.161 To understand whether the Development's traffic generation would have a significant road safety effect, it is necessary to establish a baseline and identify any inherent road safety issues within the traffic study area. This review utilises historic personal injury collision (PIC) data obtained from TfL for the most recently available five-year period up to 31st December 2018.

9.162 Over the five-year study period, across the traffic study area, 171 PICs have been recorded, of which 16 were recorded as resulting in a 'serious' injury, with two recorded fatalities. All remaining PICs resulted in 'slight' injury.

9.163 Table 9.12 summarises the recorded PIC by route and at key links and junctions. The table enables 'cluster' locations to be established, with a cluster defined as being five or more PICs occurring within 20m of one another, or at a junction.

Table 9.12: Baseline PIC Data

No.	Receptor Location	Accident severity			Total
		Slight	Serious	Fatal	
1	A310 Twickenham Road (south of A315, London Road)	7	0	0	7
2	A315, London Road (west of Syon Lane/ Twickenham Road junction)	9	0	0	9
3	A315, London Road (east of Syon Lane/ Twickenham Road junction)	14	0	0	14
4	Syon Lane - North of A315, London Road	32	6	0	38
5	Syon Lane - South-east of Homebase Site Access	15	3	0	18
6	A4 - East of Syon Lane	13	4	0	17
7	A4 - West of Syon Lane	23	1	2	26
8	Syon Lane, North of A4	10	0	0	10
9	Syon Lane - South-east of Tesco Access (between Grant Way and Tesco)	11	0	0	11
10	Syon Lane, North of Tesco Site Access	12	0	0	12
11	Northumberland Avenue	7	2	0	9
Total		153	16	2	171

9.164 It can be observed from Table 9.12 that PIC clusters occur on all Links. It is noted that the PIC data has been aggregated in respect of intersections and as such, for robustness, several data items are included within the summary of more than one link.

9.165 For the purpose of the assessment, these clusters are considered to be of high sensitivity. Of the PICs recorded as those of 'serious' severity, it is noted that the highest rates are observed at Syon Lane south of the existing Site entrance (6 accidents in 5 years). A similar rate, of

just over one 'serious' accident a year, is observed at the A4 Great West Road, west of its junction with Syon Lane, where the only two fatal incidents over the five year study period have also been observed.

Highway Link Sensitivity

9.166 A desktop exercise informed by Site visits has been undertaken to allocate categorisation by degrees of sensitivity to the sensitive receptors in the traffic study area. Table 9.13 presents the qualification of the sensitivity assessment for each of the links within the traffic study area.

Table 9.13: Determination of Link Sensitivity

No.	Receptor Link	Link Sensitivity	Rationale for link sensitivity
1	A310 Twickenham Road (south of A315, London Road)	Medium	The link serves predominantly activity residential frontages; however, the road is directly fronted by The Green School for Boys.
2	A315, London Road (west of Syon Lane/ Twickenham Road junction)	Medium	The link is provided with footways and crossing points and contains some local retail frontages. Cycle lanes provided as part of a route signed or marked for use by cyclists on a mixture of quiet or busier road. The link also accommodates pedestrian connectivity to The Green School for Girls via Quakers Lane.
3	A315, London Road (east of Syon Lane/ Twickenham Road junction)	Medium	The link is provided with footways and crossing points and serves residential and commercial frontages.
4	Syon Lane - North of A315, London Road	Medium	Limited number of active frontages. Footways provided at both sides of the carriageway. Signalised pedestrian crossing facilities provided in the northern section of the link.
5	Syon Lane - South-east of Homebase Site Access	Medium	A limited number of active frontages. Pedestrian footway provided at one side of the carriageway in parts. Can experience high peaks in pedestrian footfall resulting from train activity at Syon Lane Rail Station.
6	A4 - East of Syon Lane	Low	Link forms part of an arterial route. Relatively frequent formal pedestrian crossing provisions with footways either side of the carriageway.
7	A4 - West of Syon Lane	Low	Link forms part of an arterial route. Relatively less frequent formal pedestrian crossing provisions with footways either side of the carriageway.
8	Syon Lane, North of A4	Medium	The link is provided with footways and crossing points and serves retail and commercial uses as well as some residential properties.

9	Syon Lane - South-east of Tesco Access (between Grant Way and Tesco)	Medium	The link is provided with footways and crossing points and does not serve many active frontages.
10	Syon Lane, North of Tesco Site Access	Medium	Link is provided with pedestrian footways at both sides of the carriageway and serves a relatively low density of residential frontages. The Nishkam School West London takes access from this link.
11	Northumberland Avenue	High	The link provides access to a network of residential streets and incorporates pedestrian footways at both sides of the carriageway.

Likely Significant Effects

Construction Phase

9.167 In accordance with GEART (Rule 1 and Rule 2), a screening process has been undertaken for the traffic study area to identify routes that are likely to have significant changes in traffic flows and, therefore, require further assessment. The screening process has utilised 12hr AAWT flows as being representative of the 5.5 day traffic generation from the demolition and construction phase.

9.168 Table 9.14 summarises the total daily movements associated with the worst case of peak demolition and construction activities, which is identified in Figure 9.2 as being 2023. Table 9.14 provides a comparison of the future baseline 2023 background traffic flows (scenario 2) with the peak demolition and construction traffic flows (scenario 4).

Table 9.14: Existing (scenario 2) and Proposed (scenario 4) Daily Traffic Flows During Demolition and Construction

No.	Receptor Link	Link Sensitivity	2023 Background Flows 12hr AAWT (07:00 – 19:00) flows		2023 Background Flows + Demolition and Construction flows 12hr AAWT (07:00 – 19:00)		Percentage Increase	
			All Vehicles	HGVs	All Vehicles	HGVs	All Vehicles	HGVs
1	A310 Twickenham Road (south of A315, London Road)	Medium	16044	1333	15915	1331	-0.80%	-0.17%
2	A315, London Road (west of Syon Lane/ Twickenha	Medium	8445	1033	8316	1031	-1.53%	-0.22%

	m Road junction)							
3	A315, London Road (east of Syon Lane/ Twickenham Road junction)	Medium	11172	1339	11043	1337	-1.15%	-0.17%
4	Syon Lane - North of A315, London Road	Medium	14130	737	13743	730	-2.74%	-0.91%
5	Syon Lane - South-east of Homebase Site Access	Medium	16243	1091	15928	1156	-1.94%	5.94%
6	A4 - East of Syon Lane	Low	41613	1872	41173	1917	-1.06%	2.42%
7	A4 - West of Syon Lane	Low	33776	1561	33651	1681	-0.37%	7.71%
8	Syon Lane, North of A4	Medium	20745	654	20580	651	-0.79%	-0.48%
9	Syon Lane - South-east of Tesco Access (between Grant Way and Tesco)	Medium	16392	836	16228	833	-1.00%	-0.37%
10	Syon Lane, North of Tesco Site Access	Medium	15253	383	15088	380	-1.08%	-0.82%
11	Northumberland Avenue	High	2823	43	2815	43	-0.25%	-0.27%

9.169 In accordance with GEART, only highly sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic (or the HGV component) are considered when assessing the traffic effect upon receptors.

9.170 It is noted from Table 9.14 that all Links fall below GEART screening threshold of 10%, and therefore, the effect on these links can be considered to be negligible for severance, pedestrian amenity, pedestrians (and cyclist) delay, driver (and bus) delay, fear and intimidation and road safety.

9.171 In accordance with GEART, no discernible or significant environmental effects have been identified for the peak time of construction vehicle activity and therefore these links are not assessed further as part of this study.

Operational Phase

9.172 In accordance with GEART (Rule 1 and Rule 2), a screening process has been undertaken for the study area to identify routes that are likely to have sufficient changes in traffic flows and, therefore, require further impact assessment. The screening process has utilised 24hr AADT flows as being representative of the seven-day traffic generation from the completed Development.

9.173 To consider the worst case, the assessment of completed Development effects considers the first full year of completion of the Development (2026).

9.174 Table 9.15 summarises the total daily movements of the completed Development traffic across the highway network for the first year of full occupation, assumed to be 2026 (scenario 4). For comparison purposes, the forecast future background traffic flows for 2026 (scenario 2) are provided in Table 9.15, and this future base scenario accounts for traffic growth based on LoHAM (Table 9.11).

Table 9.15: Future Background Flows (scenario 2) compared to Complete and Operational Development (scenario 4)

No.	Receptor Link	Link Sensitivity	2026 Background Flows 24hr AADT (07:00 – 19:00) flows		2026 Background Flows + Complete and Operational Development flows 24hr AADT (07:00 – 19:00)		Percentage Increase	
			All Vehicles	HGVs	All Vehicles	HGVs	All Vehicles	HGVs
1	A310 Twickenham Road (south of A315, London Road)	Medium	21988	1630	21838	1629	-0.68%	-0.04%
2	A315, London Road (west of Syon Lane/ Twickenham Road junction)	Medium	10788	1310	10637	1309	-1.39%	-0.05%
3	A315, London Road (east of Syon Lane/ Twickenham Road junction)	Medium	14514	1774	14363	1773	-1.04%	-0.04%

4	Syon Lane - North of A315, London Road	Medium	19472	829	19021	827	-2.32%	-0.23%
5	Syon Lane - South-east of Homebase Site Access	Medium	22892	1556	22440	1554	-1.97%	-0.12%
6	A4 - East of Syon Lane	Low	52264	2341	51712	2378	-1.06%	1.62%
7	A4 - West of Syon Lane	Low	42862	1969	42562	2009	-0.70%	2.04%
8	Syon Lane, North of A4	Medium	27680	873	24077	896	-13.02%	2.58%
9	Syon Lane - South-east of Tesco Access (between Grant Way and Tesco)	Medium	22175	1199	18572	1222	-16.25%	1.88%
10	Syon Lane, North of Tesco Site Access	Medium	20964	512	20608	511	-1.70%	-0.28%
11	Northumberland Avenue	High	3672	54	3662	54	-0.29%	-0.19%

9.175 In accordance with GEART, only sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic or the HGV component are considered when assessing the traffic impact upon receptors.

9.176 It is noted from Table 9.15 that all Links fall below GEART screening thresholds 30% and 10% for links of high sensitivity, and therefore, the significance of effect on these links can be considered to be negligible for severance, pedestrian amenity, pedestrians (and cyclist) delay, fear and intimidation and road safety.

9.177 An additional assessment, based on traffic data for the unrealistic scenario that the Tesco Osterley site will operate under the existing conditions with a new Tesco store also operating as part of the Development is included in Appendix 9.2. This ensures that the worst-case effects are assessed in the unlikely event that the Tesco Osterley development is not delivered.

Driver and Bus Delays

9.178 Driver delay (and bus service delay) is considered within the 'peak hour' VISSIM micro-simulation models prepared to assess the traffic impact of the proposed development. TfL and the LBH have requested that the VISSIM model is prepared for the 2035 design year, and should adopt the '2035 future baseline + cumulative (Tesco site) + proposed development'

traffic scenario for the Weekday AM peak (07:45-08:45), the weekday PM peak (17:00-18:00) and a Saturday peak (13:00-14:00) – scenario 4.

- 9.179 Within the model scenario 4 is compared against scenario 2.
- 9.180 The model incorporates the new traffic signal control site access junction to the Development, capacity improvements to Gillette Corner junction and associated pedestrian crossing facility on Syon Lane, south of the A4 Great West Road.
- 9.181 An iterative process has been undertaken to establish a site access junction design for the Development and possible capacity improvements at the Gillette Corner (A4/Syon Lane) junction that would be suitable to accommodate the redistribution of Tesco store traffic that would result from a new store being located at the Site. Both TfL and LBH officers were involved in the optioneering process.
- 9.182 What is apparent from the modelling undertaken is that some physical mitigation is required at the Gillette Corner junction to accommodate Tesco traffic turning from the A4 Great West Road south into Syon Lane. The modelling has shown extended journey times through the road network for traffic routing towards Syon Lane south, from the east and the west on the A4. A particular constraint to highway capacity is the right turn from the A4 into Syon Lane south. While a dedicated right turn lane is provided from the A4 into Syon Lane south this is a short lane and early iterations of the model showed traffic queuing back beyond the extent of the lane to block ahead traffic on the A4.
- 9.183 A change to the highway arrangement is therefore required to support the Development, in the form of a second right turning lane from the A4 into Syon Lane (south). The proposed highway infrastructure mitigation at Gillette Corner junction is 'embedded mitigation' and the impacts of the Development are therefore presented in the context that the mitigation has been implemented.
- 9.184 Table 9.16 compares journey times through the study area for the scenario 2 and scenario 4. The table illustrates the effect of proposed mitigation, which is incorporated within the 2035 baseline + cumulative + proposed development' traffic models which is the Scenario 4 model.

Table 9.16: Driver Delay – Journey Times (Seconds) and Magnitude of Impact

Turning movement/ Link		Weekday AM Peak			Weekday PM Peak			Saturday Peak		
		2035 Baseline	2035 Baseline + Cum. + PD	Change (- / +)	2035 Baseline	2035 Baseline + Cum. + PD	Change (- / +)	2035 Baseline	2035 Baseline + Cum. + PD	Change (- / +)
From Syon Lane North	to A4 West	236	262	26	242	117	-125	281	156	-125
	to A4 East	203	161	-42	132	108	-24	131	118	-13
	to Syon Lane south	240	259	19	148	116	-32	152	149	-3
From Syon Lane South	to Syon Lane - North	154	149	-5	129	136	7	114	127	13
	to A4 West	119	116	-3	86	108	22	78	103	24
	to A4 East	152	173	21	109	126	27	103	123	20
From A4 West	to Syon Lane - North	93	101	8	83	76	-7	86	81	-5
	to A4 East	83	95	12	61	60	-2	67	63	-4
	to Syon Lane - south	295	156	-139	243	267	24	112	130	17
From A4 East	to Syon Lane - south	82	166	84	92	135	43	90	141	51
	to A4 West	57	67	10	65	83	17	66	64	-2
	to Syon Lane - North	273	158	-115	129	142	13	112	108	-5
Key Magnitude of Effect	Negligible									
	Minor									
	Moderate									
	Substantial									

9.185 In terms of driver and bus delay, the impact of the combined Tesco and Homebase developments would result in a range of effects, depending on the route taken through the study area.

9.186 The VISSIM model's methodology is presented in the TA and the results are summarised in Tables 9.16 and 9.17. For general traffic (Table 9.16), the only turning movement where a 'minor' effect is identified is from the Syon Lane East (Link 6) to Syon Lane South (connecting to Links 1, 2, 3, 4 and 5). For all other turning movements and in all other peak hours a 'negligible' magnitude of impact is identified. In summary, the effect on driver delay can be described as Negligible Beneficial where journeys times are reduced as a result of the proposed development, Minor Adverse for link 6. The minor adverse effect is associated with operations in the weekday AM peak hour only, associated with traffic routing through the study area from the A4 (West) to Syon Lane south.

9.187 For bus operations, Table 9.17 presents the associated journey time impact.

Table 9.17: Bus Journey Delay – Journey Times (Seconds) and Magnitude of Impact

Bus Service	Direction of Travel	Weekday AM Peak			Weekday PM Peak			Saturday Peak		
		2035 Baseline	2035 Baseline + Cum.+ PD	Change (- / +)	2035 Baseline	2035 Baseline + Cum.+ PD	Change (- / +)	2035 Baseline	2035 Baseline + Cum.+ PD	Change (- / +)
H91	A4 West to A4 East	415	394	-21	283	279	-4	251	244	-7
	A4 East to A4 West	209	227	19	271	270	-1	243	233	-11
	Two-way Operation	624	621	-2	554	549	-5	494	477	-18
E1	A4 East to Syon Lane North	401	282	-119	195	262	66	177	229	51
	Syon Lane North to A4 East	392	246	-146	260	209	-52	221	187	-34
	Two-way Operation	793	528	-265	455	471	14	398	416	17
Key Magnitude of Effect	Negligible									
	Minor									
	Moderate									
	Substantial									

- 9.188 Table 9.17 identifies that for the users of bus service H91 the magnitude of impact can be described negligible. The resulting effect is identified as direct, long term, permanent Negligible Beneficial during the weekday AM peak, PM peak and on Saturdays (due to overall decreases in delay).
- 9.189 TfL are proposing to extend service E1 from its current terminus in Ealing to the site. It is understood that TfL will formally consult on the route extension in the Summer 2020 and the Applicant has been requested to design a new bus terminus for this service as part of the proposed development.
- 9.190 Should the E1 extension be implemented, Table 9.17 identifies that the service would benefit from the development in the weekday AM peak, with an overall reduction in journey time predicted. While the service would experience substantial and moderate delays on a weekday PM peak and Saturday peak respectively, when travelling from the A4 (west) to Syon Lane (north), the development would benefit journey times for the service's return journey. Overall, the development would result in a direct, long term, negligible (adverse) effect on bus service E1 for the Weekday PM and Saturday peak periods of demand. In the weekday AM peak period, the development would result in a direct, long term, substantial (beneficial) effect on bus service E1.

Mitigation Measures

- 9.191 In accordance with GEART the assessment has identified:
- no discernible or significant environmental effects during the construction phase of the Development; and
 - no discernible or significant environmental effects upon the severance, pedestrian amenity, pedestrians (and cyclist) delay, fear and intimidation and road safety during the operational phase of the development.
- 9.192 In respect of driver (and bus) delay, the benefit to journey times provided by the embedded mitigation (additional turning lane) would vary, depending on the route taken through the junction and the time period in which the journey was undertaken. Overall, the assessment has identified:
- a minor adverse effect for traffic travelling from link 6 towards links 1, 2, 3, 4 and 5, for the AM peak period of traffic demand only (for traffic turning from the A4 into Syon Lane); and

- no overall discernible or significant environmental effects on bus delay during the operational phase of the Development.

9.193 The following best practice measures will be implemented to support the Development.

Demolition and Construction Phase

9.194 Demolition and Construction mitigation would comprise the implementation of a Detailed Construction and Logistics Plan (CLP). It is anticipated that the preparation of a detailed CLP would be secured by planning condition and would be developed post planning consent once a Contractor is appointed and would be subject to approval by LBH.

9.195 To inform the preparation of the Detailed CLP an Outline CLP has been submitted with the planning application. The Detailed CLP would refer to the commitments made in the Outline document.

9.196 The Outline CLP includes:

- A commitment to loading and unloading, and material storage, within the Site and not on the adjacent highway;
- A commitment to accommodate all construction traffic on-site, without the need for vehicles to stand on the public highway;
- A requirement for all construction traffic to enter and exits the Site in a forward gear;
- A vehicle routing strategy that ensures that construction traffic is routed directly from the Site to and from the strategic highway network, which in this case is the A4 Great West Road;
- A commitment that all works on-site are undertaken from 08:00 to 18:00 from Monday to Friday and from 08:00 to 13:00 on a Saturday – no work on-site is to be undertaken on a Sunday or a Bank Holiday;
- The use of a consolidation centre as a means to reduce the number of construction vehicle trips;
- Provide construction access from Syon Lane and not Grant Way – the strategy is designed to minimise construction vehicle impact on MacFarlane Lane; and
- Encourage all contractor and sub-contractor staff to access the Site via sustainable modes of travel.

Operational Development Phase

- 9.197 While no mitigation is required to reduce the environmental effect of the operational Development, it remains the ambition of the Applicant, TfL and LBH to minimise road traffic and the impact of the Development on the highway network.
- 9.198 For this reason, the operational Development will be supported by Residential and Commercial Travel Plans, and a Delivery and Servicing Plan, and these documents have been submitted as part of the planning application.
- 9.199 The purpose of the Travel Plans is to set out a long-term strategy for reducing dependence on travel by private car. Its objective is to reduce private car mileage in favour of more sustainable modes of travel, which reflects current Government policy objectives in respect of transport. The Delivery and Servicing Plan would seek to minimise the impact of service and home delivery vehicles on the operation of the highway.
- 9.200 The Travel Plans refer to the introduction of a Car Club that will be accessible by Site residents.
- 9.201 The Travel Plans contain a commitment to monitoring Site travel patterns and enforcement measures designed to ensure the Development's traffic is within the bounds of this assessment.

Residual Effects

- 9.202 These mitigation measures would act to reduce the effect of construction traffic on severance, driver (and bus) delay, pedestrian amenity, pedestrian (and cyclist) delay, fear and intimidation and road safety. As a result of these mitigation measures, the magnitude of impact would not be significant for the 'demolition and construction' and 'operational' phases of development.

Cumulative Effects

- 9.203 Table 9.18 provides an overview of the traffic generation for locally committed development sites. These are sites that have planning permission and which could impact on the operation of the local highway.

Table 9.18: Committed Development Sites – Traffic Impacts

Cumulative Development	Demolition and Construction		Completed Development	
	Cumulative Effects Likely?	Reason	Cumulative Effects Likely?	Reason
Access Self Storage Limited – Gillette South, 871 Great West Road System Reference: P/2018/4691 Planning Reference: 00505/AF/P28	No	Generally, newly consented developments are provided with 3-years to commence work on-site. Construction work at the Homebase site would not commence until the end of 2020 and the peak year is anticipated to be 2023. 871 Great West Road development is likely to be operational at this time.	No	This is a low car development. Peak hour trips are:14 arrivals and 4 departures in the weekday AM peak, and 2 arrivals and 7 departures in the weekday PM peak.
New Horizons Court, Ryan Drive, Brentford, TW8 9EP System Reference: P/2017/0535 Planning Reference: 02912/A/P1	No	Tesco Osterley would not commence until 2021. Site access is from A4 via Harlequin Avenue – no construction traffic likely to route on Syon Lane.	No	A low car development with access from the A4 via Harlequin Avenue. Peak hour trips are:9 arrivals and 1 departure in the weekday AM peak, and 1 arrival and 7 departures in the weekday PM peak.
891 Great West Road, Isleworth London, TW7 5PD System Reference: P/2017/5069 Planning Reference: 00505/891/P4	No	Homebase site construction and demolition would not commence until 2021, with the peak year anticipated to be 2023. 891 Great West Road is anticipated to be complete by this time.	No	The proposed development is car free
4 and 8 Harlequin Avenue, Brentford, TW8 9EW	No	Homebase site would not commence until	No	The number of on-site employees is not

<p>System Reference: P/2017/5358 Planning Reference: 00558/4-8/P1</p>		<p>2021, with peak year 2023. Site access is from A4 via Harlequin Avenue – no construction traffic likely to route on Syon Lane.</p>		<p>anticipated to increase as a result of the site, no increase in car parking</p>
<p>Sky, Sites 6 & 7, Grant Way, Isleworth, TW7 5QD System Reference: P/2019/1931 Planning Reference: 00558/A/P69</p>	<p>No</p>	<p>Site is accessible from Syon Lane via Grant Way, however, at the time of writing the timing of the development is not known. This development is located north of A4.</p>	<p>No</p>	<p>The Transport Assessment says <i>"The Sky Lab will provide working space for up to 700 employees. The majority of employees who will be based within the building will be relocated from elsewhere within the Campus, including Sky 6 and 7 buildings that are to be demolished. As such, existing travel patterns are unlikely to change. There is not expected to be a significant net increase in employee or visitor trips."</i></p>
<p>1 Commerce Road, Brentford, London, TW8 8LE System Reference: P/2018/2011 Planning Reference: 00297/H/P13</p>	<p>No</p>	<p>No. 1 Commerce Road is located over 1-kilometre from the site in Brentford, on the southern side of the A4. No construction traffic should route on Syon Lane.</p>	<p>No</p>	<p>The Transport Assessment says, <i>"there is a net reduction of both 21 vehicle movements during the morning peak and 14 during the evening peak. This will therefore</i></p>

				<p><i>result in the development being a betterment compared to that of the existing use as the highway network is at its most congested during these periods."</i></p> <p>Given the site's location, it is assumed that this development will have no impact on the operation of the Gillette Corner junction, or on Syon Lane.</p>
<p>Bolder Academy, 1 MacFarlane Lane, Isleworth, TW7 5PN System Reference: P/2017/1417 Planning Reference: 01106/W/P9</p>	No	<p>The school is scheduled to be developed and operational before the peak construction traffic is anticipated at Homebase. The development is located north of the A4. The development would replace the existing Bolder Academy that opened in temporary accommodation (in September 2018), meaning that trips by some (c. 330) pupils form part of the baseline.</p>	No	<p>The school would be located adjacent to Tesco Osterley, accessed from MacFarlane Lane. While parents will not be permitted to drop children at the school, some car trips are anticipated associated with staff and 'park and stride' trips. It is noted that a School Travel Plan has been developed to reduce the development's traffic attraction. School trips would be</p>

				predominate for short periods only, at the beginning and end of the school day only, with no anticipated impact at weekends and during the school holiday periods.
Tesco Osterley, Syon Lane	No	The redevelopment of the Tesco Osterley site would be due to commence following the completion of the Homebase site development.	No	The redevelopment of the Tesco Osterley site would be expected to result in a localised reduction in traffic flows when compared to the existing operation of the Site.

Demolition and Construction Phase

- 9.204 Due to the location of the committed development sites and their low levels of potential traffic generation, it is not anticipated that there would be a significant cumulative effect arising from one or more of these sites should they be operational during the demolition and construction phase of the Development.
- 9.205 The routing strategy for construction traffic associated with the Development, as defined in the Outline CLP submitted with the planning application, requires all HGV construction traffic movements to arrive and depart from the strategic highway, the A4 Great West Road. No traffic would route to/from the of the A4, via Syon Lane, to and from the south, via Syon Lane or on Northumberland Avenue.
- 9.206 The Site would be car free, meaning that all Site staff would be required to access the Site by sustainable modes. It is not, therefore, anticipated that Site related construction traffic would have an adverse cumulative environmental effect on the operation of any adjacent highway.

- 9.207 This assessment also considers the potential cumulative impacts of construction work at the Site and Tesco, Osterley. The development scenarios assume the respective developments are granted planning permission concurrently and their construction programmes reflect that.
- 9.208 The magnitude of effect of the Development's demolition and construction phase, and traffic associated with adjacent development sites, would not be negligible as increases in HGV movements do not exceed 10% on any receptor links as presented in Table 9.14.

Completed Development

- 9.209 All locally committed developments will benefit from public transport infrastructure enhancements that have been proposed to support the development of the Opportunity Area, should they come forward. The Bolder Academy school would also benefit from the public transport infrastructure to be developed in conjunction with Tesco, Osterley development, which will include new bus stops and a bus standing area on Grant Way. This facility will accommodate a new bus service to the area, service E1. Should bus service E1 be extended to the area before the Tesco, Osterley development comes forward, the service would terminate at Tesco, Osterley's existing bus terminus and would still, therefore, serve the school.
- 9.210 As a consequence of the low car nature of locally permitted development the cumulative effect of the Development and adjacent development sites is considered to be negligible, both before and after the implementation of development-related mitigation measures. The effect would not be significant.

Summary

- 9.211 This Chapter has been prepared with reference to the Guidelines for the Environmental Assessment of Road Traffic (GEART), which are guidelines for the assessment of the environmental impacts of road traffic associated with new developments, irrespective of whether the developments are to be subject to formal EIAs.
- 9.212 In preparing this Chapter, consideration has been given to the EIA Scoping Opinion provided by the LBH in October 2019, and pre-application consultation undertaken with TfL and the LBH.
- 9.213 The assessment has been supported by traffic surveys undertaken in 2019, which have provided traffic flow data for a study agreed with Officers at TfL and LBH. The traffic survey

data has been used to establish baseline flows for eleven links on the adjacent highway network. These flows have been seasonally adjusted so that they reflect a neutral month.

9.214 TfL has requested baseline traffic flows are subject to traffic growth rates determined by their London Highway Assignment Model (LoHAM).

9.215 Traffic flow and traffic distribution data have been collected for the Site's existing Homebase operation.

9.216 The traffic generation rates for the Development, and the associated residential traffic distribution, has been agreed with TfL officers.

9.217 In line with the guidelines within GEART, a screening exercise has been undertaken to establish the potential for an environmental effect on severance, driver delay, pedestrian amenity, pedestrian (and cyclist) delay, fear and intimidation and road safety. The following rules have been applied.

- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows (or HGV component) are predicted to increase by 10% or more.

9.218 This assessment has established that the Development would result in an impact of less than 10% on all links in both the 'demolition and construction' and 'operational' phases of development. As such, further assessment of the environmental effects of development-related traffic on severance, pedestrian amenity, pedestrian (and cyclist) delay, 'fear and intimidation' and road safety has been screened out.

9.219 For driver delay, a minor adverse effect is identified in the weekday AM peak period for traffic turning from the A4 (east) into Syon Lane (south) – from link 6 towards links 1, 2, 3, 4 and 5. For all other movements and in all other peak hours, embedded mitigation (highway improvement) measures would mean that the development would result in a negligible effect on driver delay.

9.220 For bus service delay, no overall discernible or significant environmental effects on bus delay during the operational phase of the Development.

- 9.221 The operational mitigation measures include the physical highway infrastructure embedded mitigation works at the Gillette Corner junction to accommodate Tesco traffic turning from the A4 Great West Road south into Syon Lane. Commercial and Residential Travel Plans, and a Delivery and Servicing Plan would be implemented as a means to reduce motor traffic to the development site.
- 9.222 Demolition and construction mitigation is proposed in the form of a Detailed Construction and Logistics Plan.
- 9.223 Local committed development sites have been identified as being 'low car' or 'car free' developments and as such the cumulative effect of the Development and committed development sites is considered to be negligible for both the demolition and construction and operational phases.
- 9.224 Table 9.19 contains a summary of the likely effects of the Development.

Table 9.19: Table of Significance – Transport and Access

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	UK	E	R	C	B	L	
Demolition and Construction											
Severance	Temporary	Negligible	Implementation of CLP, including vehicle routing strategy.							X	Negligible
Pedestrian Amenity	Temporary	Negligible								X	Negligible
Fear and Intimidation	Temporary	Negligible								X	Negligible
Pedestrian (and cyclist) Delay	Temporary	Negligible								X	Negligible
Road Safety	Temporary	Negligible								X	Negligible
Driver (and bus) Delay	Temporary	Negligible								X	Negligible
Operational Development											
Severance	Permanent	Negligible	Implementation of Commercial and Residential Travel Plans and a Delivery and Servicing Plan							X	Negligible
Pedestrian Amenity	Permanent	Negligible								X	Negligible
Fear and Intimidation	Permanent	Negligible								X	Negligible
Pedestrian (and cyclist) Delay	Permanent	Negligible								X	Negligible
Road Safety	Permanent	Negligible								X	Negligible
Bus Delay	Permanent	Negligible								X	Negligible
Driver Delay	Permanent	Minor Adverse to Negligible	Highway capacity improvement measures to be secured by legal agreement.							X	Minor Adverse to Negligible
Cumulative Effects											
<i>Construction</i>	Temporary	Negligible	Implementation of CLP, including vehicle routing strategy.							X	Negligible
<i>Operation</i>	Permanent	Negligible	Implementation of Commercial and residential Travel Plans							X	Negligible

*** Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

REFERENCES

- 1 CLG (March 2012) *National Planning Policy Framework*
- 2 CLG (March 2014) *Planning Practice Guide*
- 2 <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-2016-pdf>
- 3 <https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/what-new-london-plan#Stub-263771>
- 4 https://www.hounslow.gov.uk/info/20167/local_plan/1108/local_plan
- 5 https://www.hounslow.gov.uk/info/20167/local_plan/1545/local_plan_reviews
- 6 <https://haveyoursay.hounslow.gov.uk/planning-policy/local-plan-regulation-19-consultation/>
- 7 https://www.hounslow.gov.uk/info/20167/local_plan/1100/local_plan_reviews_-_evidence_and_research
- 8 Institute of Environmental Assessment (January 1993); 'the Guidelines for the Environmental Assessment of Road Traffic.
- 9 <http://content.tfl.gov.uk/lcds-chapter8-cycleparking.pdf>
- 11 Transport and Roads Research Laboratory in supplementary report 356 (TRRL 356)
- 12 TRICS "Construction Traffic – Research Report" (February 2008)
- 13 Highways and Transportation guidance 'Providing for Journeys on Foot' 2000
- 14 The National Travel Survey (NTS) (2018)
15. <http://content.tfl.gov.uk/londons-strategic-transport-models.pdf>