7 TRANSPORT

Introduction

7.1 This chapter of the ES presents an assessment of the potential impacts on each of the modes of transport associated with the proposed development and the associated likely effects on sensitive receptors in the area.

7.2 It describes the methods used to assess potential direct and indirect impacts; the baseline transport and access conditions currently existing at and surrounding the application site; the mitigation measures integral to the proposed development; and the likely residual effects on sensitive receptors. Where relevant, the assessment follows the methodology set out in the IEMA Guidelines.

7.3 The impacts have been assessed for all modes of transport during the demolition and construction stage of the development as well as when the proposed development is fully built out and operational.

7.4 The chapter should be read in conjunction with the Transport Assessment (TA) which sets out the detailed assessments of all modes and includes a Pedestrian Environmental Appraisal; Bus Analysis Report; Junctions Modelling Analysis Report; Framework Travel Plan; and Delivery and Servicing Plan. This is included in ES Volume 3: Technical Appendix 7.1.

Legislation and Policy Context

National Legislation and Policy

National Planning Policy Framework, 2012

7.5 The National Planning Policy Framework (NPPF)[1] was published in March 2012. The NPPF encourages, where practical, solutions that support reductions in greenhouse gas emissions and reduce congestion. The planning system should support a pattern of development that facilitates the use of sustainable modes of transport.

7.6 Transport policy is dealt with in the 'Promoting Sustainable Transport' section of the NPPF which emphasises the need for "the transport system to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel".

7.7 Paragraph 32 of the NPPF outlines that a TA should support all development proposals that are likely to generate significant amounts of movement. Decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all people; and
- Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

7.8 Paragraphs 34 and 35 state that "developments that generate significant movement should be located where the need to travel would be minimised and the use of sustainable transport modes can be maximised". There is an emphasis through Local Plans to "protect and exploit opportunities for the use of sustainable transport modes for the movement of goods and people". 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;
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;
- Incorporate facilities for charging plug-in and other ultra-low emission vehicles; and
- Consider the needs of people with disabilities by all modes of transport.

7.9 The NPPF suggests that a key tool for achieving these aims is a Travel Plan and that all developments that generate a significant amount of movement should be required to produce one.

7.10 Guidance is also provided for the setting of car parking standards, within paragraph 39 of the NPPF. It advises Local Planning Authorities (LPA) to take a number of factors into account for both residential and non-residential development when setting local parking standards.

Regional Policy

The London Plan, 2016

7.11 The London Plan provides the overall strategic plan for London setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The latest version of the London Plan was published in March 2016[2] following the adoption of the Minor Alterations to the London Plan (MALPs) for housing and parking standards.

7.12 Policy 3.7 'Large Residential Developments' relates to a plan-led approach towards encouraging higher densities along with complimentary non-residential uses in areas of high public transport accessibility. This is reiterated within the more relevant transport related policies (Policy 6.1) as described below.

7.13 Policy 6.1 'Strategic Approach' states that the Mayor will work with all relevant partners to encourage patterns and nodes of development that reduce the need to travel; improve the capacity and accessibility of public transport, walking and cycling; support development that generates high levels of trips at locations with high levels of public transport accessibility and/or capacity; and support measures that encourage shifts to more sustainable modes.

7.14 Policy 6.3 on 'Assessing Effects of Development on Transport Capacity' states that development proposals should ensure that impacts on transport capacity and the transport network are fully assessed. Transport Assessments should be provided in accordance with TfL guidance and Travel Plans should be provided for applications above the thresholds set out in TfL guidance.

7.15 Policy 6.10 'Walking' in respect of development proposals, they should ensure high quality pedestrian environments. At the strategic level there is an emphasis on including the use of shared space principles.

7.16 Policy 6.13 'Car Parking Standards' states that the Mayor wishes to see an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use. In locations with high public transport accessibility, car-free developments should be promoted, while still providing for disabled people. The maximum parking standards are set out below.

[1] Department for Communities and Local Government (2012); National Planning Policy Framework.

[2] Greater London Authority (2016); The London Plan – Spatial Development Strategy for Greater London, Consolidated with Alterations Since 2011

Table 7.1: Maximum Car Parking Standards for Residential	
Number of beds / dwelling	**Car space / dwelling**
1 to 2 beds	Less than 1
3 beds	Up to 1.5
4 or more beds	Up to 2

Table 7.2: Maximum Car Parking Standards for Office	
Location	**Maximum of one parking space per xm^2 of gross floor area, where x is:**
Inner London	600-1000
Outer London	100-600

Table 7.3: Maximum Car Parking Standards for Retail			
Use	**Maximum of one parking space per xm^2 of gross floor area, where x is:**		
	PTAL 6 and 5	**PTAL 4 to 2**	**PTAL 1**
Non food	60-40	50-30	30

7.17 In terms of Blue Badge parking, the London Plan states that non-residential elements of a development should provide at least one accessible on or off street car parking bay designated for Blue Badge holders, even if no general parking is provided. Any development providing off-street parking should provide at least two bays designated for Blue Badge holders. For residential uses, the London Plan requires adequate parking spaces for disabled people which must be provided preferably on-site, and references GLA's 'Housing Supplementary Planning Guidance' (2012) and 'Accessible London Supplementary Planning Guidance' (2014).

7.18 The minimum standards for cycle parking are set out in Policy 6.9 and the relevant standards that are applicable to the land uses within the proposed development are summarised in Table 7.4.

Table 7.4: Relevant London Plan (2016) cycle parking standards for the proposed development			
Land use		**Cycle parking**	
		Long-stay	**Short-stay**
A1	Food retail	from a threshold of 100 sqm: 1 space per 175 sqm	from a threshold of 100 sqm: first 750 sqm: 1 space per 40 sqm Thereafter: 1 space per 300 sqm
	Non-food retail	from a threshold of 100 sqm: first 1000 sqm: 1 space per 250 sqm thereafter: 1 space per 1000 sqm	from a threshold of 100 sqm: first 1000 sqm: 1 space per 125 sqm. Thereafter: 1 space per 1000 sqm
A3	Cafes and restaurants	from a threshold of 100 sqm: 1space per 175 sqm	from a threshold of 100 sqm: 1 space per 40 sqm
B1	Office	1 space per 90 sqm	First 5000 sqm: 1 space per 500 sqm. Thereafter, 1 space per 5000 sqm
C3	Dwellings	1 space per studio and 1-bedroom unit;	1 space per 40 units
		2 spaces per all other dwellings	
D1	Nursery	1 space per 8 staff + 1 space per 8 students	1 space per 100 students
D1	Dentist	1 space per 5 staff	1 space per 3 staff
D2	Health Club	1 space per 8 staff	1 space per 100 sqm

7.19 The application site is located within the Charlton Riverside Opportunity Area as identified within the London Plan. It has an indicative employment capacity of 1,000 and minimum of 3,500 new homes. It states that development at Charlton Riverside should be integrated with the wider development of the south bank of the Thames to complement opportunities at Deptford/Greenwich, Greenwich Peninsula and Woolwich. In addition, the Greenwich Peninsula Opportunity Area is required to co-ordinate development and infrastructure with the Charlton Riverside Opportunity Area.

City in the East, 2016

7.20 The Mayor of London's City in the East plan[3] promotes the development of the east of London as an integrated part of the capital. It identifies Charlton Riverside as having the capacity to deliver 5,000 homes and 5,000 jobs. This superseded the figures contained in the London Plan. In relation to transport infrastructure, it sets out the wider Strategic Links that are anticipated to allow each of the key places to improve connections.

The Mayor's Transport Strategy, 2010

7.21 The Mayor's Transport Strategy (MTS)[4] was developed in conjunction with the London Plan and the Mayor's Economic Development Strategy (EDS)[5] as part of a strategic policy framework to support and shape the economic and social development of London over the next 20 years. The MTS outlines the Mayor's vision and how TfL and partners plan to deliver this vision:

- *"London's transport system should excel among those of world cities, providing access to opportunities for all its people and enterprises, achieving the highest environmental standards and leading the world in its approach to tackling urban transport challenges of the 21st century".*

7.22 Specific improvements identified include:

- Expanding and affording greater Mayoral influence over the National Rail Network;
- Better integration of the National Rail Network with the rest of the transport system;
- Improved connectivity and capacity through schemes such as Crossrail;
- New orbital services on the London Overground;
- An upgraded underground system;
- Value for money across the bus network;
- Efficient movement of freight;
- Integrated fares and ticketing; and
- Improving the linkages between transport and land-use planning.

[3] Mayor of London (2016); City in the East
[4] Greater London Authority (2012); The Mayor's Economic Development Strategy for London
[5] Greater London Authority (2012); The Mayor's Economic Development Strategy for London.

Local Policy

Royal Greenwich Local Plan: Core Strategy, 2014

7.23 The Royal Borough of Greenwich's (RBG's) Core Strategy with Detailed Policies[6] set out how the council proposes to develop the borough over the next 15 years to improve the lives of the people who live and work here, whilst retaining the strong sense of history and identity of Royal Greenwich.

7.24 The Core Strategy identifies a number of Strategic Development Locations. This includes Charlton Riverside (Policy EA2) which will provide a new mixed-use urban quarter. Employment will be consolidated to maximise the use of land whilst maintaining employment levels in the waterfront area. There will be a reduction in the amount of out of town centre retail in this area and an increase in both the quantity and quality of open space. It is expected that the area will be transformed into an attractive and vibrant mixed use urban quarter providing around 3,500 - 5,000 new homes.

7.25 It is stated that the new development at Charlton Riverside will require sufficient buffering from the retained Strategic Industrial Location land and the safeguarded Riverside, Angerstein and Murphy's Wharves to minimise the potential for conflicts of use and interference to new residents.

7.26 With regards to transport policies, Policy IM4 is consistent with national policy in promoting sustainable travel and reducing the need to travel. Policy IM(b) and Policy IM(c) sets out the requirement for new developments to give regard to the road network and walking and cycling provisions. The RBG is consistent with the London Plan car and cycle parking policies which is confirmed in Policy IM(c).

Royal Greenwich Site Allocation Local Plan, Issues and Opinions Paper, 2016

7.27 This document[7] sets out the sites and uses that are important to delivering the spatial strategy presented in the RBG Core Strategy and provide additional detail on these. Once adopted, the site allocations local plan will form part of the Development Plan for the RBG and adoption is due in Winter 2017.

7.28 Charlton Riverside is identified as a key regeneration area that provides a significant opportunity for new high quality river front development. The application site is located within Site C5, known as Charlton Riverside Central. The options for future use are identified as

- *"Mixed use, including land for transport route, employment/commercial, small scale retail, residential and open space. Secondary and primary school area of search. To include bus and cycle eastwest route and transport interchange at the south western corner of the site opposite Charlton Church Lane."*

Charlton Riverside Masterplan, 2012

7.29 The Charlton Riverside Masterplan Supplementary Planning Document[8] provides the strategic planning steer for this area to guide development over the coming 15-20 years.

7.30 In relation to transport, the detailed objectives for this area includes improved connections to the wider area to form one integrated neighbourhood; improvements to the Thames Path, increasing safety and the connectivity of the pathway; and creation of a better environment for all uses.

7.31 It is recognised in the urban design issues that the existing study area is largely unwelcoming to pedestrians and cyclists and there are clear opportunities for improving connectivity and movement.

7.32 The document includes a concept design for the area. It shows that the application site, along with the area to the east of the application site is expected to have residential use, with the area to the west of Anchor and Hope Lane to have industrial and retail uses. The plan also shows the intention to provide a river service to the north of the application site and improved transport hub at Charlton Station.

7.33 Currently the RBG have been consulting on updating this document with the consultation draft having been planned to be issued for consultation in October/November 2016. However, it is understood that this has been delayed until Spring 2017.

[6] Royal Borough of Greenwich (2014); Royal Greenwich Local Plan: Core Strategy with Detailed Policies
[7] Royal Borough of Greenwich (2016); Site Allocation Local Plan, Issues and Opinions Paper
[8] Royal Borough of Greenwich (2012); Charlton Riverside Masterplan Supplementary Planning Document

Consultation Feedback

7.34 Table 7.6 summarises the consultee responses received on the scope of this chapter in Charlton Riverside's EIA Scoping feedback and reports on how the comments have been addressed in the assessment.

7.35 The key considerations are summarised in Table 7.5.

Table 7.5: Consultation Feedback

Consultee	Comment	Where in the Chapter this issue is addressed
Port of London	The Transport Assessment/transport chapter of the ES should clearly demonstrate how appropriate highways access to the safeguarded wharves and to the barge works will be maintained. This should include during construction and on completion of the proposed development. It should also be explained how the use of the River Thames will be maximised during the construction period for the transport of bulk materials (demolition and construction). It is noted that the Scoping feedback refers to Charlton Station, North Greenwich Underground and to the local bus routes – no reference is made to the river bus stop at North Greenwich. The Transport Section of the ES / Transport Assessment should include targets for river bus use and set out measures to encourage people to travel by river.	There is no impact on the access to the safeguarded wharves as these are remote from the application site. The Transport Assessment does include a section on this however it is beyond the study area for the EIA as defined in Paragraph 7.39. It is recognised that there are local concrete batching plants at Angerstein Wharf (CEMEX) on Bugsby's Way and Victoria Deep Water Terminal (Hanson) on Tunnel Avenue that are within 3km of the site which are both served by the river. Both of these would be considered by the main contractor and, if used, would reduce the travel distances by road for the provision of concrete and aggregates. However, for a robust assessment of the impact of the demolition and construction works on the highway network, it is assumed in this ES chapter that these materials will be transported by road. With reference to the mode split assessment that is detailed for each land use within the Transport Assessment river travel does not feature as a sufficiently significant form of travel as recorded within the Census 2011. The Travel Plan includes river travel as that is the most appropriate document for such a mode of transport.
Transport for London	The EIA scoping document does not contain detailed transport information regarding the assessment of the scheme, however Transport for London (TfL) has the following comments:	A full Transport Assessment Scoping report was prepared and discussed with TfL and the RBG. The Transport Assessment and this ES chapter reflects all of the points raised by TfL.

Table 7.5: Consultation Feedback

	1. The site of the proposed development is located on Anchor and Hope Lane which is accessed directly from the A206 Woolwich Road, which forms part of the Strategic Road Network (SRN). The site is also located approximately 1km from the A102, which forms part of the Transport for London Road Network (TLRN). TfL is the highway authority for the TLRN, and are therefore concerned about any proposal which may affect the performance and/or safety of the TLRN and it also has a duty under the Traffic Management Act 2004 to ensure that any development does not have an adverse impact on the SRN. TfL will therefore be very interested to find out more details about the level of parking to be provided on site considering the congested nature of the surrounding highway network, especially Woolwich Road during peak times. The access to bus and rail services by residents and employees at the proposed development are key points that will need to be addressed within the technical transport sections. 2. The applicant should note that TfL operates a pre-application advice service which has been set up to enable developers to understand TfL's views on transport and infrastructure prior to submission of the application. Details can be found here: http://www.tfl.gov.uk/info-for/urban-planning-and-construction/planning-applications/pre-application-advice. The applicant should initiate this process for application early on in the design development process. 3. TfL has prepared its own Transport Assessment best practice guidance to assist developers in scoping out the environmental and transport impacts. Each scheme should be assessed on its own merits through pre-application advice, but the guidance is a good starting point and should be referred to in the EIA scoping report, details can be found here: https://tfl.gov.uk/info-for/urban-planning-and-construction/transport-assessment-guidance. The EIA and TA must assess consistent impacts and be consistent in assessment years, for example, if the implementation and occupation of development slips beyond the design year (end state), the EIA and TA must adequately assess these impacts. The EIA and TA must include a multi-modal impact assessment including baseline and future car, bus, rail, river bus and pedestrian and cycle trips and mode share. Any vehicular additional vehicular trips that will access/egress to/from the A206 and A102 will have air quality and noise impacts that will need to be assessed. 4. The Screening Opinion states that a Transport Assessment, Travel Plan and Delivery and Servicing Plan will be submitted as supporting documentation. As part of the CMP, TfL will request for the applicant to submit a Construction Logistics Plan with the planning application. More advice can be provided on this during pre-application discussions. 5. The applicant should note that Greenwich and TfL are currently progressing an update of the Charlton Riverside Masterplan SPD. Some work has already been undertaken and one of the key issues in this particular area is transport, including bus connectivity and priority, the future role of Woolwich Road and rail connections. This work is continuing and the applicant should be aware that this work is being developed in parallel to their proposals.	
Royal Borough of Greenwich – Transport & Highways	As part of the planning application the applicant is intending to provide a Transport Assessment using TfL guidance. While I do not have any objection to this, reference is made to the 2007 version. The TfL transport assessment best practice guidance (TABPG) was first issued in 2006 and updated in 2010. Borough Partnerships has now updated the guidance to reflect changes to national policy, including the adoption of the National Planning Policy Framework and overall government objectives. The applicant is therefore advised to use the latest document. Any Transport Assessment will also need to take account of the proposals contained within the Charlton Masterplan given the significant potential changes in the area.	The Transport Assessment has been scoped with TfL and the RBG and current best practice guidelines followed. This has been carried through into this chapter. Consultation with the RBG and their masterplan consultant' has been undertaken and proposals within the proposed development that would prejudice any transport infrastructure within the masterplan have been avoided.

7.36 Consultation with TfL and the RBG on the scope of the TA resulted in agreement on the following to be considered in the TA:

- Scope of the traffic surveys and junction analysis;
- Incorporation of traffic from cumulative assessment schemes rather than apply TEMPRO growth;
- Residential trip generation methodology;
- Delivery and servicing trips approach and methodology;
- Scope of pedestrian environmental assessment;

- PTAL methodology, assessment and findings; and
- Impact assessment scenarios.

7.37 The TA also addresses comments raised by TfL/the RBG, including taking into account final and main mode trips and providing three hour AM and PM peak trips for public transport services as well as for the peak hours.

7.38 The issues considered in this chapter are set out in the Methods of Assessment and Significant Criteria sections of this chapter.

Assessment Methodology

Study Area

7.39 The assessment area has been established based on the likely areas of influence on the various travel modes available and where these are likely to give rise to significant effects as follows:

- Travel by foot - the focus is on access to amenities and facilities within 10 - 15 minutes' walk;
- Travel by cycle - the focus is on access to amenities and facilities within 10 - 15 minutes' cycle;
- Travel by public transport - the focus is on access to stops within the range of travel by foot and those destinations which can be reached within 40 minutes; and
- Traffic flows – the broad rules within the IEMA guidance have been followed to define the geographical extent of the assessment of traffic flows:
  - Rule 1 – Include highway links where traffic flows will increase more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
  - Rule 2 – Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

Baseline Characterisation

7.40 Baseline conditions, in and around the application site, have been characterised by means of desktop research, site visits and surveys. The following have been undertaken to assess the baseline conditions:

- The existing local highway network within the vicinity of the application site was analysed. This included Anchor and Hope Lane, Bugsby's Way and Woolwich Road;
- Existing traffic survey data was obtained for the above locations;
- Historical accident data for the latest three year period for all roads within the vicinity of the application site was obtained and analysed;
- A PTAL assessment of the application site was undertaken;
- The existing level of public transport capacity in the vicinity of the application site was analysed;
- Public transport services were considered by review of existing timetables; and
- Pedestrian routes from the application site to local public transport nodes (bus stops and stations), the local pedestrian and cycle network within 30 minutes of the application site were reviewed.

Baseline Pedestrian, Cycle and Public Transport Conditions

7.41 For travel on foot and on cycle, desktop studies were undertaken to review the application site's accessibility to amenities (such as schools, shops, etc.) using the existing infrastructure provision.

7.42 For travel on bus and rail, information on service capacities and frequencies have been used from TfL and Southeastern where available. Bus and rail patronage information is not made available, due to commercial sensitivities, by TfL or Southeastern, however effects can be assessed relative to service capacities.

Baseline Traffic Conditions

7.43 Traffic surveys were undertaken in July 2015 by an independent traffic survey company, avoiding school holidays, road closures, and other events which might have affected traffic patterns.

7.44 Manual classified turning counts have been undertaken at the following locations:

- Signalised junction of Bugsby's Way with Gallions Road;
- Priority junction of Gallions Road and the A206 (left in/ left out);
- Priority junction of Anchor and Hope Lane and industrial access road;
- Roundabout junction of Bugsby's Way and Anchor and Hope Lane;
- Signalised junction of the A206/Anchor and Hope Lane and Charlton Church; and
- Roundabout junction of the A206 (Woolwich Road) and Gallon Close.

7.45 Queue length surveys and saturation flows (for signalised junctions) have also been collected.

7.46 In addition, link counts were undertaken within the application site to establish the existing traffic generation of the existing development.

7.47 Automatic Traffic Counters (ATCs) were also laid at the following locations for seven days recording traffic volume and speeds:

- Anchor and Hope Lane to the south of industrial access road;
- Anchor and Hope Lane to the south of Bugsby's Way;
- Bugsby's Way to the east of Lombard Wall;
- The A206 (Woolwich Road) to the west of Charlton Church Lane;
- The A206 (Woolwich Road) to the east of Charlton Church Lane; and
- Charlton Church Lane to the south of the A206.

7.48 Accident records for the public highways surrounding the application site were obtained from TfL for Anchor and Hope Lane, Bugsby's Way, A206 Woolwich Road and Charlton Church Lane.

7.49 The scope of the traffic surveys and extent of accident data collection has been agreed with TfL.

Method of Assessment

7.50 This section outlines the methodologies applied to identify and assess the range of potential Transport and Access effects that may result from the proposed development. The assessment has been undertaken in line with TfL's Transport Assessment Best Practice guidelines[9] and IEMA Guidelines.

Demolition and Construction Trip Generation

7.51 An assessment of the potential effects of demolition and construction traffic from the proposed development has been undertaken based upon professional judgement and experience of such analysis at other comparable schemes within London and in the RBG. Detailed consideration of the demolition and construction activities for the proposed development is set out within Chapter 5 of this ES. For the purposes of providing a robust, worst case assessment of the demolition and construction activities, the peak construction period has been used, and traffic control measures that will be developed post planning secured through a Construction Logistics Plan (CLP) and Environmental Management Plan (EMP) have not been included within the main assessment (pre-mitigation).

7.52 When considering construction vehicle types, a balance needs to be maintained between the size of vehicles and the number of vehicle trips to be carried out, (i.e. as the size of the vehicle increases the number of trips decreases). Generally, the larger the vehicle used, the fewer trips would be made. Therefore, provided that strict health and safety and environmental arrangements are in place, it is

[9] https://tfl.gov.uk/info-for/urban-planning-and-construction/transport-assessment-guidance

more appropriate to use larger vehicles where possible to limit the total number of vehicular movements.

7.53 From previous experience it has been found that the most intensive period for construction vehicle activity is during the substructure works, which comprise primarily excavation and basement construction stages of works on-site.

Development Operational Trip Generation

7.54 A detailed multi-modal trip generation for the different land uses within the proposed development is set out in the TA and summarised below.

7.55 Weekday morning and evening peak hour trip rates for the residential (C3) units within the proposed development have been based on an agreed methodology with TfL. This approach to trip generation is wholly consistent with guidance produced by TfL on Transport Assessments and these trip rates have been agreed as suitable to be used along with the mode distribution of development trips, derived from the 2011 Census method of travel to work by the residential population.

7.56 Trip generation for the non-residential uses (Use Class A1, A3, B1, D1 and D2) within the proposed development are based on the likely number of staff travelling to and from the application site during the peak hours and travel to work mode share data is based on the local area.

Assessment of Impact

7.57 Based on the trip generation from the proposed development, the magnitude of the potential impacts was initially be identified on each mode of transport, in the absence of mitigation, and assessed in accordance with the significance criteria. In most instances, both quantitative and qualitative assessments were undertaken.

7.58 Following this, proposed mitigation and enhancement measures to be implemented as part of the scheme were taken into account and the residual effects were assessed and set out in accordance with the significance criteria.

Assessment and Baseline Scenarios

7.59 The following scenarios have been considered within the assessment:

- Baseline 2015;
- Baseline 2015 + Proposed Development (without existing site traffic); and
- Cumulative Baseline 2023 + Proposed Development.

7.60 No background traffic growth has been applied for the future baseline as surveys over the last 16 years have determined that traffic flows in the local area have reduced or remained broadly constant.

7.61 The cumulative assessment considers those consented developments in the vicinity of the application site which have been agreed with the RBG. These cumulative schemes are identified in Chapter 2: EIA Process and Methodology of this ES and the cumulative transport effects are discussed at the end of this chapter.

Significance Criteria

7.62 Guidance provided by the Institute of Environmental Management and Assessment (IEMA)[10] and Department for Transport (DfT)[11] has been consulted in order to identify significance criteria applicable to the assessment of walking, cycling, public transport and vehicle trips associated with the proposed development.

[10] Institute of Environmental Management and Assessment (1993); Guideline for the Environmental Assessment of Road Traffic
[11] Department for Transport (2007): Guidance on Transport Assessment.

7.63 For a number of effects there are no readily available thresholds of significance, in which case interpretation and judgement has been applied based on knowledge of the application site or quantitative data where available.

Characterisation of Effects

7.64 All effects have been characterised as being either:

- **Beneficial**: meaning that the changes produce positive benefits in terms of transportation and access (such as reduction of traffic, travel time or patronage, or provision of a new service, access or facility);
- **Negligible**: meaning that their bearing is too small to measure meaningfully; or
- **Adverse**: meaning that changes produce negative effects in terms of transportation and access (such as increase of traffic, travel time, patronage or loss of service or facility).

7.65 Beneficial and adverse effects have been further characterised as:

- **Minor**: slight, very short or highly localised effect of no significant consequence (where the data is available/applicable, 10% to 30% change);
- **Moderate**: limited effect (by extent, duration or magnitude) which may be considered significant, (where the data is available/applicable, 30% to 60% change); or
- **Major**: considerable effect (by extent, duration or magnitude) of more than local significance or breach of recognised acceptability, legislation, policy or standards (where the data is available/applicable greater than 60% change).

Traffic Flows

Receptor Sensitivity

7.66 In order to help define the value and sensitivity of receptors, the following guidance has been obtained from the IEMA Guidelines as shown in Table 7.6.

Table 7.6: Guidelines for the Assessment of Receptor Value and Sensitivity

Receptor Type	Receptor Sensitivity
Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident clusters, retirement homes, roads without footways that are used by pedestrians.	High
Traffic flow sensitive receptors: congested junctions/links, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, recreation facilities.	Medium
Receptors with some sensitivity to traffic flow: places of worship, public open space, tourist attractions and residential areas with adequate footway provision.	Low

Impact Magnitude

7.67 To assist with the definition of impact magnitude, reference has been made to the IEMA Guidelines. This guidance sets out considerations and, in some cases, thresholds, in respect to changes in the volume and composition of traffic to facilitate a judgement of traffic impact and significance. The relevant guidelines are included in Table 7.7.

Table 7.7: Guidelines for the Assessment of Impact Magnitude				
Impact	**Magnitude of Impact**			
	Very Low	**Low**	**Medium**	**High**
Severance	Change in total traffic or HGV flows of less than 30%	Change in the total traffic or HGV flows of 30-60%	Change in the total traffic or HGV flows of 60-90%	Change in the total traffic or HGV flows of over 90%
Pedestrian Delay	A judgement based on the routes with two way traffic flow exceeding 1,400 vehicles per hour in context of their individual characteristics			
Pedestrian Amenity	Change in total traffic or HGV flows < 100%		A judgement based on the routes with >100% change in context of their individual characteristics	
Accidents and Safety	A judgement based on change in collision numbers over a route under consideration			
Dust and Dirt	A judgement taking into account baseline construction management processes			

Significance of Effects

Pedestrian Severance

7.68 Pedestrian severance can be described as the perceived divisions that can occur within a community when it becomes separated by a traffic route. Thresholds for assessing severance are based on changes in traffic flows as set out in the Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3, Part 8[12]. This document suggests changes in traffic flow of 30%, 60% and 90% are considered equivalent to 'minor', 'moderate' and 'major' changes in severance respectively, as set out in paragraph 7.65.

Pedestrian Delay

7.69 Increases in traffic flows can lead to increases in delay to pedestrians seeking to cross roads. The IEMA Guidelines do not prescribe any quantitative significance criteria for the assessment of pedestrian delay. Instead, professional judgement has been used to determine whether pedestrian delays on the local footpaths, if any, would be significant.

Pedestrian Amenity

7.70 The IEMA Guidelines describe pedestrian amenity as the relative pleasantness of a journey. It is affected by traffic flow, traffic composition, footway width and separation from traffic. The Guidelines suggest that the threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow is doubled. Significance of such an increase beyond that would be based on professional judgement.

Accidents and Safety

7.71 The significance of the change to accidents and safety likely to be introduced by the proposed development was assessed by means of professional judgement based on the projected changes to daily vehicle flows and proposed development trips.

[12] Department for Transport (1993); Design Manual for Roads and Bridges – Volume 11, Section 3, Part 8: Pedestrians, Cyclists, Equestrians and Community Effects.

Dust and Dirt

7.72 The significance of the change to dust and dirt likely to be introduced during the construction activities for the proposed development was assessed by means of professional judgement.

Pedestrian Footway Movement and Capacity

7.73 The significance of the change to pedestrian footway movement and capacity likely to be introduced by the proposed development was assessed by means of professional judgement.

Pedestrian Fear and Intimidation

7.74 Pedestrian fear and intimidation is caused by a number of factors, including a combination of volume of traffic, its Heavy Goods Vehicle (HGV) composition, its proximity to people and the lack of protection caused by such factors as narrow footway widths. The criteria for assessing fear and intimidation in the IEMA Guidelines are presented in Table 7.8. The significance is determined from the change of the classification of the degree of hazard for a particular road.

Table 7.8: IEMA Thresholds for Pedestrian Fear and Intimidation			
Degree of Hazard	**Average Traffic Flow over 18 Hour Day (vehicles/hour)**	**Total 18 Hour Goods Vehicle Flow**	**Average Speed over 18 Hour Day (miles/hour)**
Extreme	1,800+	3,000+	20+
Great	1,200 – 1,800	2,000 – 3,000	15 – 20
Moderate	600 – 1,200	1,000 – 2,000	10 – 15

Demolition and construction related effects

7.75 The demolition and construction related effects have been assessed based on the temporary changes in traffic flows during the demolition and construction period.

Public transport

7.76 The effects on the capacity of public transport services have been assessed based on the increase in trips in relation to the capacity of the services and the significance criteria set out in paragraphs 7.66 and 7.67 are applied.

Walking and cycling

7.77 In addition to the effects of traffic flows on pedestrians, the effects of the proposed development, including increase in walking and cycling trips and provision of pedestrian and cycle facilities, have also been assessed by means of professional judgement, using the significance criteria set out in paragraphs 7.66 and 7.67.

Assumptions and Limitations

7.78 The modal split of the trips undertaken by the future residents have been derived from the 2011 Census Method of Travel to Work – Resident Population dataset for Greenwich 004B Lower Layer Super Output Area. The modal split of the trips undertaken by the future staff have been derived from the 2011 Census Method of Travel to Work – Workday Population dataset for Greenwich 004 Super Output Area, with adjustments made to reflect no car parking.

7.79 The proposed development lies within these areas, and therefore it is reasonable to assume that the travel characteristics of existing residents and staff in this area would be representative of those which would be generated at the proposed development.

7.80 A proportion of residents and staff will use the London Underground Limited (LUL) / Dockland Light Railway (DLR) services as their principal mode of transport to travel to work. As the nearest stations

for these services are further than a convenient walking distance some way from the application site, to assess the first / final modes of transport from the application site, this proportion of residents and staff have been redistributed to bus and rail based on the predicted origin and destination of these trips which would use the bus to access the Jubilee Line from North Greenwich Station or use rail to interchange with LUL/DLR services.

7.81 Crossrail is expected to be open prior to the completion of the proposed development and the nearest station will be Woolwich. This is expected to have a moderate positive impact on the existing transport services, such as bus routes and rail capacity. However, at this stage, there are no other known committed public transport changes in the area. TfL has confirmed that they are currently undertaking a review of the bus network to compliment Crossrail services but this will not be completed until early 2017. Therefore given the limited information available, the impact of the proposed development can only be assessed on the existing public transport services and this would represent a robust worst case assessment.

Baseline Conditions

7.82 In order to assess the potential effects of the proposed development, it is necessary to determine the environmental conditions, resources and sensitive receptors that currently exist on the application site and in the surrounding area.

Existing Site

7.83 The application site is located within the Charlton Riverside Opportunity Area and is approximately bounded by Anchor and Hope Lane and the residential properties at Atlas Gardens to the west, and industrial units to the east and south. The River Thames is located to the north of the application site. Existing access to the application site is from Anchor and Hope Lane.

7.84 The existing site currently contains a number of light industrial units. This includes a scaffolding hire company and a vehicle hire company. With the exception of two residential areas known as Atlas Gardens and Derrick Gardens, the application site is surrounded by industrial and retail uses.

Pedestrian Network and Facilities

7.85 The main access to the application site is from Anchor and Hope Lane from the application site's western edge. Footways, dropped kerbs and tactile paving are provided along Anchor and Hope Lane. At the roundabout with Bugsby's Way to the south of the application site, uncontrolled crossing facilities are provided on one of the arms (the northern Anchor and Hope Lane arm).

7.86 Signal controlled pedestrian crossings are provided at the Anchor and Hope Lane/Woolwich Road/Charlton Church Lane junction and Bugsby's Way/Gallions Road junction.

Cycling Network and Facilities

7.87 Designated cycle routes are provided within close proximity of the application site which connect to the wider network across London. These cycle routes provide good access to and from local residential areas and other local facilities. Generally there is a good standard of provision for cyclists with many sections of cycle routes free of vehicular traffic. All sections of the routes have adequate street lighting, signing to various local destinations and are well surfaced.

7.88 The A206 Woolwich Road to the south of the application site is a signed cycle route with marked on-street cycle routes in both directions. The Thames Path is located to the north of the application site and forms part of the National Cycle Network (NCN) Route 1. This is an off-road route which provides access to North Greenwich to the north-west and towards Royal Arsenal to the east.

7.89 Jubilee line services are available from North Greenwich Station and the cycle time is approximately eight minutes. A new cycle hub is being provided by TfL at North Greenwich Station which will have 350 cycle spaces.

7.90 The existing local cycle routes can be accessed from Anchor and Hope Lane which provide good access to and from local residential areas and other local facilities. The local routes have adequate street lighting and signage to various local destinations.

7.91 The RBG and Sustrans are currently working up the details of the Thames Path Quietway scheme which will provide a quieter route to North Greenwich alongside the River Thames. This can be accessed at the northern end of Anchor and Hope Lane. Construction of the scheme is planned to start by September 2016 and is expected to be completed prior to occupation of the proposed development.

7.92 In addition, Cycle Superhighway 4 is planned to be implemented between Woolwich and London Bridge, travelling along Woolwich Road. Phase 3 is between Greenwich and Woolwich, however TfL are unable to confirm the delivery dates for this section at present.

Bus Network and Services

7.93 The nearest bus stop to the application site is on the northern side of Bugsby's Way, to the west of the roundabout with Anchor and Hope Lane (85m from the application site boundary). This bus stop is served by bus routes 472 and 486 travelling south on Anchor and Hope Lane towards Queen Elizabeth Hospital or Woolwich. For services in the opposite direction, there are bus stops on the western side of Anchor and Hope Lane (170m) and on the southern site of Bugsby's Way (250m).

7.94 Both the 472 and 486 provide access to North Greenwich Station where interchange can be made with the Jubilee Line. The bus journey time is approximately 10 minutes.

7.95 Three additional bus routes (161, 177 and 180) are available on Woolwich Road. The nearest set of bus stops is located to the east of the junction with Anchor and Hope Lane, approximately 330m (a 3 to 4 minute walk) from the application site.

7.96 Bus route 161 also serves North Greenwich Station and routes 177 and 180 provide further interchange opportunities with DLR services at Cutty Sark and Greenwich. The bus journey time is approximately 15 minutes.

7.97 Table 7.9 provides a summary of the baseline bus services.

Table 7.9: Summary of Bus Routes (Hourly Frequency in Each Direction)

Bus route	Route	AM peak	PM peak	Sat	Sun
472	North Greenwich – Bugsby's Way – Woolwich - Thamesmead	9	9	8	6
486	North Greenwich – Bugsby's Way – Charlton – Eltham – Welling - Bexleyheath	7	7	7	5
161	North Greenwich – Woolwich Road – Woolwich – Eltham – Chislehurst	6	6	5	5
177	Peckham – Greenwich – Woolwich Road – Woolwich - Thamesmead	6	6	5	5
180	Lewisham – Greenwich – Woolwich Road – Woolwich – Abbey Wood – Belvedere	6	6	6	4
	Total	**34**	**34**	**31**	**25**

7.98 The above shows that there are up to 34 buses per hour in each direction accessible from the application site. This is on average one bus every two minutes in each direction.

7.99 In addition to the above services, the Woolwich Road bus stops are served by nightbus N1 which operates between Thamesmead and Central London, with a frequency of two to three buses per hour in each direction.

Rail Network and Services

7.100 Charlton Station is located approximately 350m (a three to four minute walk) south of the application site. Trains serving this station run between London and Kent and are operated by Southeastern. There are around eight trains per hour in each direction during weekday peak times.

7.101 The trains serve the London terminals of London Bridge (journey time of 17 minutes), London Waterloo East (26 minutes), London Charing Cross (33 minutes) and Cannon Street (24 minutes).

7.102 Interchange opportunities are available at the London terminals for bus services, London Underground services and further rail services. In addition, the passengers can interchange for DLR services at Lewisham and Greenwich stations, both have a journey of around seven minutes from Charlton.

7.103 Construction is currently underway for Crossrail which will provide a direct rail connection between all of London's main business centres, linking Heathrow, with Paddington, the West End, the City and Canary Wharf.

7.104 The nearest Crossrail station to the application site will be Woolwich, approximately 3km from the application site. Woolwich Station will able to be accessed from the site using local bus services or rail services from Charlton. Crossrail services on this section of the route are expected to operate in 2018, prior to the opening of the proposed development in 2023.

7.105 Crossrail is expected to provide significantly reduced journey times to many Central London destinations. From Woolwich Station, it is expected to take eight minutes to Canary Wharf, 14 minutes to Liverpool Street and 22 minutes to Bond Street.

Public Transport Accessibility Level (PTAL)

7.106 The Public Transport Accessibility Level (PTAL) methodology has been adopted by the GLA and TfL as a means of quantifying and comparing the accessibility of a point of interest by public transport. The application site is within walking distance of five bus services and Charlton Rail Station.

7.107 The existing site ranges from PTAL 4 in the southern end to PTAL 3 at the north end, with an average PTAL across the application site of 4 which indicates good accessibility. This has been agreed with TfL. When future public transport provisions associated with the implementation of Charlton Riverside Opportunity Area masterplan are introduced, the application site has the potential of achieving a PTAL of 5.

Highway Network

Local Road Network

7.108 Site access is provided off Anchor and Hope Lane, via a private access road which can provide for two-way vehicle movements. The private access road falls largely within the control of the applicant, albeit a short section owned by the adjacent landowner and there is a right of access across this section.

7.109 Anchor and Hope Lane is a wide, two-way carriageway, with sections of marked on-street parking on both sides. It meets Bugsby's Way to the south at a roundabout and continues south towards a signal controlled junction with the A206 Woolwich Road.

7.110 Bugsby's Way has two lanes in each direction and provides access to the west to Greenwich Shopping Park, Millennium Leisure Park, The O_2 as well as the Blackwall Tunnel. The A206 Woolwich Road is aligned approximately east-west. It provides access to Woolwich to the east and the Greenwich Market to the west. It also provides an alternative route to the A102 Blackwall Tunnel Southern Approach. The A206 Woolwich Road forms part of the Strategic Road Network (SRN).

7.111 There is a dedicated, segregated southbound bus lane on Anchor and Hope Lane to the south of the roundabout with Bugsby's Way. There are also other bus priority measures in the local area.

7.112 Uncontrolled, marked on-street parking bays are provided on both sides of Anchor and Hope Lane to the north of the application site. There is no on-street parking to the south on Anchor and Hope Lane or Bugsby's Way.

Baseline Traffic Flows

7.113 Traffic data has been obtained for roads and junctions surrounding the application site which is summarised the table below for the AM and PM peak hour.

Table 7.10: Baseline Traffic Flows

Link	AM Peak	PM Peak
Anchor and Hope Lane North of Bugsby's Way	251	249
Anchor and Hope Lane North of Site Access	192	135
Anchor and Hope Lane South of Bugsby's Way	1,286	1,569
Bugby's Way West of Gallions Road	1,327	1,700
Bugby's Way East of Gallions Road	1,362	1,995
Charlton Church Lane North of Delafield Way	404	450
A206 East of Anchor and Hope Lane	2,137	2,587
A206 West of Anchor and Hope Lane	1,201	1,234
Site Access	107	120
Gallions Road	202	390

7.114 During the pre-application discussions, it was agreed that it would not be necessary to apply any background traffic growth to the existing traffic surveys as the traffic predictions for other committed developments are considered to be a more accurate means of examining traffic growth in this area. This has been agreed with TfL.

Car Clubs

7.115 There are two Car Club vehicles located to the south of Charlton Station, approximately 550m (a 5 to 7 minute walk) from the application site on Sundorne Road. The next nearest Car Club vehicles are located on Peartree Way (two vehicles 1.1km from the application site) and on Fairthorn Road (two vehicles 1.2m from the application site). These additional vehicles are operated by Zipcar.

Accident Data

7.116 Personal Injury Accident (PIA) data for the local area has been obtained and analysed for the past three years up to April 2016. Within the study area, a total of 29 accidents were recorded of which 27 resulted in slight injuries and two resulted in serious injuries. There were no fatalities. The accidents, including the two serious accidents, occurred mainly at the Anchor and Hope Lane/Woolwich Road junction and the Stone Lake Roundabout.

7.117 All the accidents were caused by human error and failure to look properly was attributed to 22 of the accidents. Other causes included carelessness, wrong use of pedestrian crossing facility, cyclist disobeying a red light and following too closely. Two of the accidents were due to defective brakes.

7.118 No accidents were recorded at the Site Access and one accident was recorded on Anchor and Hope Lane to the south at the junction with Atlas Gardens. A car turned left onto Anchor and Hope Lane and collided with a motorcyclist. The causes were identified to be poor manoeuvre and failure to look properly.

7.119 The PIA data shows no common causal factor as all of the accidents were caused by human error and were not due to the design of the local highway infrastructure.

Sensitive Receptors

Existing Sensitive Receptors

7.120 The existing site and the surrounding area are industrial in nature and are not considered to be sensitive receptors. No accident clusters nor particularly congested junctions/links have been identified in the immediate area which would otherwise be identified as a sensitive receptor.

7.121 There are residential developments at Atlas Gardens and Derrick Gardens which are considered to have low receptor sensitivities based on IEMA guidelines.

7.122 Riverside at the northern end of Anchor and Hope Lane is a quiet road without kerbed footways and forms part of National Cycle Network Route 1. This is considered to have a high receptor sensitivity to changes in traffic flows, but is not considered within this assessment as we do not have any impact on it and it falls outside the study are based on our assessment criteria.

New Sensitive Receptors

7.123 It is not considered that there will be any future new sensitive receptors resulting from the proposed development which would be relevant to this assessment as all of the transport effects are encountered beyond the boundaries of the application site.

Potential Effects

Demolition and Construction

7.124 Information related to the construction phase has been provided within Chapter 5: Demolition and Construction of this ES which includes an indicative construction programme, predicted construction traffic flows, vehicle routing and the proposed hours of working.

Demolition and Construction Vehicle Movements

7.125 Enabling works, demolition and construction would generate short-term increases in vehicle movements on the highway in the vicinity of the application site. It should also be noted that these increases would not be constant throughout the construction period and consideration has only been given to the highest peak frequency of vehicle movements.

7.126 An assessment of the anticipated impacts of demolition/construction traffic has been based upon experience of such analysis undertaken for similar schemes within London.

7.127 It is considered that there would be a maximum of six Heavy Goods Vehicles (HGVs) attributed to the construction works serving the application site during any given daytime hour. This is based upon the knowledge that it takes on average 10 minutes to load a lorry with spoil. As such, the two-way HGV traffic would be highly unlikely to exceed a peak of 12 movements per hour at any point of the day. Based on a ten hour day; a 5.5 day week; and an average of 12 vehicle movements per hour (two-way, i.e. 6 in, 6 out) this would equate to 660 movements construction related per week. This represents a worst case assessment as it looked at only the peak operational periods, at other times of construction traffic movements would be less.

7.128 The impact of construction traffic has taken into account the traffic generated by the existing site, which would cease prior to construction of the scheme.

Construction Vehicle Distribution

7.129 All construction vehicles would enter and exit the application site via Anchor and Hope Lane. This provides direct access A206 Woolwich Road and the strategic arterial routes, thereby avoiding any other local roads where the impact of construction vehicle movements would be more noticeable.

7.130 The existing access currently accommodates HGV movements and would therefore be a suitable access point for construction traffic. The assessment of the distribution of construction generated traffic took into account the anticipated forms of construction material and their source locations. Consideration has also been given to the relative location of the application site to the Strategic Road Network (SRN) and the Transport for London Road Network (TLRN) which are more suitable for construction vehicles.

7.131 The construction traffic distribution used was as follows:

- 10% east on the A206 Woolwich Road;
- 25% north on the A102 Blackwall Tunnel Southern Approach;
- 55% south on the A102 Blackwall Tunnel Southern Approach; and
- 10% west on the A206 Woolwich Road.

7.132 It is therefore expected that 90% of the construction traffic would access the strategic road network from the A1020/A102/A206 junction to the west, and 10% would travel south on Anchor and Hope Lane to access A206 to the east. It is assumed that construction vehicles to/from the A206 west would enter from Anchor and Hope Lane and exit using the A1020/A102/A206 junction.

Impact of Construction Vehicles

7.133 The predicted increases in traffic flows during construction based on baseline traffic are shown in Tables 7.11, 7.12 and 7.13 for the AM peak, PM peak and 24 hours respectively. The net increases reflect the removal of the existing site traffic and the additional traffic generated by the construction works.

Table 7.11: AM Peak Percentage on Local Roads Attributed to Construction Traffic

Link	Baseline Flows		Baseline + Net Construction Traffic		Percentage Increase	
	All vehs	HGV	All vehs	HGV	All vehs	HGV
Anchor & Hope Lane North of Bugsby's Way	251	43	226	51	-10%	18%
Anchor & Hope Lane North of Site Access	192	21	185	20	-4%	-4%
Anchor & Hope Lane South of Bugsby's Way	1,286	229	1,270	229	-1%	0%
Bugby's Way West of Gallions Road	1,327	295	1,321	303	0%	3%
Bugby's Way East of Gallions Road	1,362	213	1,356	221	0%	4%
Charlton Church Lane North of Delafield Way	404	37	400	37	-1%	-1%
A206 East of Anchor & Hope Lane	2,137	451	2,124	451	-1%	0%
A206 West of Anchor & Hope Lane	1,201	291	1,201	292	0%	0%
Site Access (Private Road)	107	10	75	17	-30%	70%
Gallions Road	202	2	200	2	-1%	-8%

Table 7.12: PM Peak Percentage on Local Roads Attributed to Construction Traffic

Link	Baseline Flows		Baseline + Net Construction Traffic		Percentage Increase	
	All vehs	HGV	All vehs	HGV	All vehs	HGV
Anchor & Hope Lane North of Bugsby's Way	249	25	223	32	-10%	30%
Anchor & Hope Lane North of Site Access	135	7	134	7	-1%	-6%
Anchor & Hope Lane South of Bugsby's Way	1,569	166	1,550	165	-1%	0%
Bugby's Way West of Gallions Road	1,700	188	1,694	196	0%	5%
Bugby's Way East of Gallions Road	1,995	106	1,989	114	0%	8%
Charlton Church Lane North of Delafield Way	450	26	446	25	-1%	-2%
A206 East of Anchor & Hope Lane	2,587	306	2,566	305	-1%	0%
A206 West of Anchor & Hope Lane	1,234	159	1,234	160	0%	0%
Site Access (Private Road)	120	6	93	13	-23%	117%
Gallions Road	390	1	389	1	0%	-24%

Table 7.13: 24 Hour Percentage on Local Roads Attributed to Construction Traffic

Link	Baseline Flows		Baseline + Net Construction Traffic		Percentage Increase	
	All vehs	HGV	All vehs	HGV	All vehs	HGV
Anchor & Hope Lane North of Bugsby's Way	3,293	481	2,863	494	-13%	3%
Anchor & Hope Lane North of Site Access	2,019	336	1,983	330	-2%	-2%
Anchor & Hope Lane South of Bugsby's Way	20,809	2,840	20,543	2,810	-1%	-1%
Bugby's Way West of Gallions Road	23,832	3,735	23,679	3,780	-1%	1%
Bugby's Way East of Gallions Road	21,854	3,679	21,701	3,724	-1%	1%
Charlton Church Lane North of Delafield Way	6,581	553	6,522	543	-1%	-2%
A206 East of Anchor & Hope Lane	39,527	6,017	39,293	5,989	-1%	0%
A206 West of Anchor & Hope Lane	23,558	3,542	23,552	3,545	0%	0%
Site Access (Private Road)	1,385	148	919	156	-34%	5%
Gallions Road	5,172	17	5,161	15	0%	-11%

7.134 The above table shows that the level of construction traffic would be less than the overall traffic levels already generated by the application site. When distributed across the highway network, all key links would experience a reduction in overall traffic, but there would be small increases in HGV traffic across the day.

7.135 From the above analysis, it can be seen that construction vehicle activity would have a negligible effect on the majority of the surrounding roads (i.e. resulting in an increase or reduction of less than 10%). The greatest changes in traffic would occur at the Site Access and Anchor and Hope Lane between Bugsby's Way and the application site which have existing low flows. There would be an overall traffic reduction of 34% and 13% in 24-hour traffic for the Site Access and Anchor and Hope Lane respectively. These represent moderate beneficial and minor beneficial effects respectively.

7.136 The proportion of HGVs would however be higher, in that there would be an increase of 5% in HGVs at the Site Access and 3% in HGVs at Anchor and Hope Lane over a 24-hour period. These effects are negligible. The increase in HGVs would be up to 117% for the Site Access in the PM peak. This equates to major adverse but this is only as a result of a low baseline HGV movements on the road. In real terms, there would be an increase of 7 HGV movements (which is the equivalent of 3.5 HGVs) in the PM peak which averages an additional 1 HGV vehicle every 9 minutes and an overall traffic flow reduction of 23%.

7.137 The overall daily effects of construction traffic on the local highway network can therefore be assessed as being Minor to Moderate Beneficial for general traffic and Minor Adverse for HGV traffic.

7.138 The projected overall daily vehicle increase generated by the construction of the proposed development on the wider road network is expected to be of Negligible significance in terms of total vehicles and would be within the daily variation of traffic.

Pedestrian Movement, Capacity, Severance, Delay, Fear and Intimidation, Amenity

7.139 Potential traffic and transportation related effects could arise causing temporary disruption to road users and pedestrians from vehicles (particularly HGVs) entering and leaving the application site. These could include temporary footway closures and diversion of pedestrian and cyclist movements. These effects are considered to be local to immediately outside the application site, of a temporary nature and of Moderate Adverse significance in the absence of mitigation based on professional judgement and the traffic flow changes predicted.

7.140 Another potential effect as a result of construction would be mud and dirt on road surfaces. This effect is considered to be temporary and of Minor Adverse significance in the absence of mitigation.

7.141 Given the low number of construction vehicles associated with the application site, the effects on pedestrian movement would be of Negligible significance.

Cycling

7.142 Given the low number of construction vehicles associated with the proposed development, the effects on cycling as a result of construction activities would be Negligible. In addition, the key cycle routes in the area are along the Thames Path (no impact) and Woolwich Road A206 (no impact).

Public Transport

7.143 During the construction period there would be an increased number of workers in the local area who would use the public transport network. However, based on the proposed working hours stated in Chapter 5: Demolition and Construction which would be from 8am – 6pm, the majority of the construction workers would be travelling outside of the peak periods. Therefore, the significance of effects on the bus, rail and underground network would be Negligible, particularly when account has been taken of the of the existing site employees who would be removed from the transport network.

Completed Development

Land Uses within the Proposed Development

7.144 The proposed development comprises 975 residential apartments (Use Class C3), 1,957m^2 (GEA) B1 office and 1,490m^2 (GEA) flexible A1/A3/D1/D2 use.

Pedestrian and Cycle Improvements

7.145 The design of the proposed development would maximise the permeability for pedestrians and cyclists. There will be two additional pedestrian/cycle only links to Anchor and Hope Lane and the Thames Path to the north. There will also be improvements to crossing points at Anchor and Hope Lane, including a Toucan Crossing to the south of the roundabout with Bugsby's Way. This would allow pedestrians to access the northbound bus stop on Anchor and Hope Lane.

Proposed Parking Provision

7.146 The proposed development will provide a total of 198 car parking spaces, including 59 accessible bays suitable for Blue Badge holders. The commercial use will be allocated two Blue Badge holder bays (one on each plot) and no general car parking provision.

7.147 Cycle parking at the proposed development will be provided in accordance with the London Plan's standard which is consistent with RBG's requirements. For residents, a minimum of 1,556 long stay cycle parking spaces will be provided in secure stores at basement level accessed via the ramped access. The non-residential uses will provide a minimum 42 long stay cycle parking spaces within each of the units to be fitted by the occupier within their individual demise. The public realm will contain a minimum of 54 short-stay cycle parking spaces for visitors to the residential and non-residential uses in accordance with the London Plan standards and allow for shared use.

Proposed Access and Servicing

7.148 Vehicular access to the application site will take place from the private road off Anchor and Hope Lane.

7.149 All of the servicing and waste collection activities will take place within the application site, away from the public highway. Turning areas are provided within the development so that vehicles can enter and exit the public highway in forward gear.

7.150 Dedicated refuse storages are provided within each plot and concierge services will be provided to manage waste collections and deliveries for residents.

Proposed Development Trips

7.151 Table 7.14 provides the multi-modal trip generation for the proposed development for the weekday AM and PM peak hour. Trip generation figures for the individual land uses along with the trip generation methodology are set out in greater details within the Transport Assessment[13].

Table 7.14: Proposed Development Multi-modal Trip Generation

Mode	AM peak (0800 – 0900)			PM peak (1800 – 1900)		
	In	Out	Total	In	Out	Total
LUL/DLR (via bus)	14	77	91	48	23	71
LUL/DLR (via rail)	10	21	31	14	11	25
Rail	26	78	103	51	33	84
Bus	55	131	186	88	64	152
Taxi	0	1	1	1	0	1
Motorcycle	3	3	6	2	3	5
Car driver	13	137	150	84	31	115
Car passenger	0	5	5	3	1	4

[13] Environmental Assessment Volume 3 – Transport Assessment – Transport Planning Practice Ltd

Table 7.14: Proposed Development Multi-modal Trip Generation

Mode	AM peak (0800 – 0900)			PM peak (1800 – 1900)		
	In	Out	Total	In	Out	Total
Cycling	5	10	15	7	5	13
Walking	164	112	276	100	167	267
Other	1	3	4	2	1	3
Total	291	578	869	401	339	740

Effect on Pedestrian Movement and Capacity

7.152 Walking trips to/from the application site comprises those making dedicated walking trips to the local area as well as walking to bus stops and Charlton rail station for public transport services. The total two-way walking trips to and from the proposed development would be 687 and 599 in the AM and PM peak hours respectively. Of these, 411 and 332 two-way person trips during the AM and the PM peak hours respectively would be walking trips and trips between the application site and transport access points.

7.153 The walking trips are expected to dissipate across the existing network. The main pedestrian desire lines are anticipated to be towards Charlton Station and bus stops located along Anchor and Hope Lane, Bugsby's Way and Woolwich Road.

7.154 There are existing public footways and cycleways provided within the vicinity of the application site. Further enhancements will be implemented as part of the proposed development, including the provision of a Toucan crossing on Anchor and Hope Lane and additional dedicated walking/cycling routes to the Thames Path within the application site. The existing and proposed infrastructure is therefore considered sufficient to meet the additional pedestrian and cyclists demand and bring benefits to the local area. Hence the proposed development would have a Moderate Beneficial effect on pedestrian movement and available pedestrian facility capacity in the local area.

Effect on Pedestrian Severance, Delay, Fear and Intimidation, Amenity

7.155 The pedestrian environment within the application site would be of high quality with the provision of an attractive open space, well maintained and with legible illuminated pedestrian routes, natural/passive surveillance provided by the commercial elements and residential lobbies of the application site. The proposed development would also contribute to the perception of pedestrian safety by significantly enhancing the public realm and increasing natural surveillance of pedestrian routes.

7.156 The application site would benefit from well-designed pedestrian facilities which would prioritise direct connectivity along desire lines. There will be permeable shared use and traffic free routes provided through the application site to Anchor and Hope Lane and the Thames Path as well as pedestrian crossing enhancements on Anchor and Hope Lane. The proposed development would therefore offer attractive pedestrian facilities both for users of the application site and for any through pedestrian traffic for the wide Charlton Riverside Opportunity Area developments in the future.

7.157 The effects local to the application site would be:

- Moderate Beneficial on pedestrian severance given the level of change in traffic flows and the proposed development would facilitate improved pedestrian crossings on Anchor and Hope Lane which would provide access to the northbound bus stop;
- Minor Beneficial on pedestrian delay due to increased connectivity and permeability which is not considered significant;

- Minor Beneficial on pedestrian fear and intimidation due to provision of active frontages and improvements to and creation of public amenity spaces which is considered significant. The proposed development would allow for natural surveillance, provision of lighting and CCTV to provide security coverage within public and private areas; and
- Major Beneficial on pedestrian amenity due to public realm enhancements, provision of active frontages, seating, landscaping and improvements to open spaces which is considered significant.

Effect on Cycling Movement and Capacity

7.158 The proposed development is expected to generate 15 and 14 cycle trips in the AM and PM peak respectively. For a robust assessment of public transport services, it has been assumed that passengers would use bus services to North Greenwich Station but in practice, cycling to North Greenwich Station for the Jubilee line will also be actively promoted through the Travel Plan.

7.159 The proposed development would provide links to the existing cycle routes in the local area and the number of cycle trips generated by the proposed development is expected to have a Negligible/Neutral effect on the capacity of the local cycle network.

Effect on Bus Services

7.160 The proposed development is predicted to generate 277 two-way bus trips during the AM peak and 223 two-way bus trips during the PM peak. Of these, 91 and 71 are expected to interchange with Jubilee Line services at North Greenwich Station in the AM and PM peak respectively.

7.161 Based on an average bus operational capacity of 63 persons and a weekday AM and PM peak bus frequency of 34 buses in each direction, the planning bus capacity was calculated as 2,142 passengers per direction per hour. On this basis, the effect of the additional bus trips associated with the proposed development on the bus network is set out in Table 7.15.

Table 7.15: Bus Network Impact Assessment

Time and direction		Bus trips	Bus network capacity (hr)	% of bus network capacity
AM Peak	In	69	2,142	3.2%
	Out	208	2,142	9.7%
PM Peak	In	136	2,142	6.3%
	Out	87	2,142	4.1%

7.162 Table 7.16 shows that the greatest impact on the bus network as a result of the proposed development would be 9.7% which would occur as a result of the departure trips in the AM peak and equates to on average one to two additional passengers per bus. This level of increase in passengers is considered to have a Negligible effect as it could be adequately accommodated on the existing bus network.

Effect on Rail Services

7.163 The proposed development is predicted to generate 134 two-way rail trips during the AM peak and 109 two-way bus trips during the PM peak. Of these, 31 and 25 in the AM and PM peak respectively are expected to interchange at Greenwich or Lewisham for DLR services or at the London terminals for London Underground services.

7.164 Southeastern was unable to confirm the peak hour capacity which serve Charlton Station during the peak hours. Based on the seating and standing capacity of typical Southeastern Metro trains, the capacity of each train has been taken as 940 passengers per train. There are currently eight timetabled trains per hour in each direction serving Charlton Station and this equates to a capacity of 7,520 passengers in each direction.

7.165 Therefore based on the proposed development rail trips, the impact of on the rail network has been calculated in Table 7.16. This assumes a worst case scenario with all additional passengers travelling in one direction.

Table 7.16: Rail Network Impact Assessment

Time and direction		Rail trips	Rail network capacity (hr)	% of rail network capacity
AM Peak	In	35	7,520	0.5%
	Out	89	7,520	1.2%
PM Peak	In	65	7,520	0.9%
	Out	44	7,520	0.6%

7.166 The above shows that the largest impact on the current rail network is expected to be 1.2% which would occur in the weekday AM peak hour with 89 outbound trips. This is equivalent to an average of 11 passengers per train in one direction. This represents a Negligible effect on rail services.

7.167 It should be noted that the above assessment did not take into account the impact of Crossrail, which could reduce the demand on rail trips from Charlton Station into London as Crossrail services from Woolwich would provide faster journeys.

Effect on Traffic Flows

7.168 The proposed development is predicted to generate 150 two-way car trips during the AM peak and 115 two-way car trips during the PM peak. The distribution of these trips onto the highway network has been based on the turning movements from the traffic surveys. This takes into account turning restrictions at the local junctions. Table 7.17 shows the predicted effect these trips would have on the local highway network during the AM and PM peak.

Table 7.17: Effect of Proposed Development Trips on Traffic Flows – AM and PM Peak Hours

Link	Baseline flows		Baseline + Proposed Development		Percentage Difference	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Anchor & Hope Lane North of Bugsby's Way	251	249	371	327	48%	31%
Anchor & Hope Lane North of Site Access	192	135	185	134	-4%	-1%
Anchor & Hope Lane South of Bugsby's Way	1,286	1,569	1,339	1,615	4%	3%
Bugby's Way West of Gallions Road	1,327	1,700	1,396	1,728	5%	2%
Bugby's Way East of Gallions Road	1,362	1,995	1,431	2,027	5%	2%
Charlton Church Lane North of Delafield Way	404	450	412	462	2%	3%
A206 East of Anchor & Hope Lane	2,137	2,587	2,200	2,617	3%	1%
A206 West of Anchor & Hope Lane	1,201	1,234	1,202	1,238	0%	0%
Site Access (Private Road)	107	120	220	197	106%	64%
Gallions Road	202	390	201	394	-1%	1%

7.169 The above table shows that the largest increase in traffic flows during the peak hours would take place at the Site Access (+106%) and Anchor and Hope Lane to the south, between Bugsby's Way and the Site Access (+48%). These two links exceed the Rule 1 threshold for consideration. None of the other links exceed this threshold.

7.170 The application site access currently has very low traffic flows and the proposed development will broadly double the existing traffic in the morning peak hour on site access. Whilst this would be considered to be Major Adverse on site access, this level of additional traffic is considered to be well within the environmental capacity of the road of 300 to 600 vehicles per hour for a residential road[14] as the traffic flows would remain below this level. The Site Access junction has also been designed to accommodate this level of traffic.

7.171 The effect on Anchor and Hope Lane can be considered as Moderate Adverse. However, it is wide to the south of the Site Access, with two lanes on the approach to the roundabout. The proposed trips are not expected to have a significant impact on the environmental capacity of the road and the flows would remain within the 300 to 600 vehicles per hour threshold for a residential road.

7.172 On the wider network, none of the other links would exceed the Rule 1 threshold and the highest increase would be 5% on Bugsby's Way in the AM peak. This level of increase is not expected to have a significant impact on the highway network. Both Anchor and Hope Lane north of the Site Access and Gallions Road are expected to have a reduction in traffic. There are residential frontages on Anchor and Hope Lane to the north of the application site which are considered to be sensitive receptors and the reduction in traffic is expected to improve conditions.

7.173 The number of additional vehicular trips associated with the proposed development is expected to have a Major Adverse effect on the Site Access and Moderate Adverse when compared against the existing low flows. However, the traffic flows would remain within the environmental capacity thresholds for residential streets and the proposed development would improve the pedestrian environment along Anchor and Hope Lane and within the application site. There would be a Negligible effect on all the other routes and no detrimental effect on highway capacity.

Mitigation and Residual Effects

7.174 As part of the applicant's commitment to ensure an appropriate development response, the Applicant and the design team have developed a number of measures within the development proposals to ensure that the potential for adverse effects are avoided. These are discussed in the following paragraphs.

Demolition and Construction

Construction Traffic Vehicular Movements

7.175 Consideration has been given to the likely numbers of construction vehicles and the routes to and from the application site. The construction vehicles would be managed in accordance with a CLP and an EMP. These documents would be agreed with the RBG prior to the commencement of works.

7.176 Other potential effects as a result of construction would be on road surfaces from mud and dirt, as well as temporary footway closures, if and when required, which would also be actively managed in accordance with measures set out in the EMP and the CLP. These measures would be expected to be incorporated as planning conditions / Section 106 measures and are therefore considered as mitigation measures rather than part of the scheme design, hence their consideration as such within this assessment. These measures are summarised as follows:

- Restricted hours of work;
- Demolition and construction method statements;
- Considerate Constructors Scheme;
- Management of deliveries and trade contractors;
- Management of noise vibration and dust;
- Management of construction waste; and
- CDM regulations.

7.177 The level of construction would be likely to be less than the traffic already generated by the application site. Together with an EMP and CLP, the residual effects of demolition and construction traffic are considered to be **Moderate Beneficial to Minor Beneficial** effects on the surrounding road network but with **Minor Adverse** effects at the Site Access of a temporary nature.

Pedestrian and Cyclist Movement and Amenity

7.178 Given predicted level of hourly volumes of construction vehicles associated with demolition and construction activities on the application site and the control measures within the CLP and EMP that would be implemented, the residual effects of construction traffic on pedestrian movement and capacity would be negligible. Details on the management of walkways, closures and routing would be agreed with the RBG through the EMP post-planning and prior to commencement of the proposed development as part of discharging the expected planning conditions / Section 106 Obligation for the CLP and EMP.

7.179 The residual effects of construction traffic on cycle movement and capacity would be **Negligible**. Details on the management of road closures and routing would be agreed with the RBG through the CLP and EMP post-planning.

7.180 The residual effects of demolition and construction on pedestrians and cyclists are considered to be **Negligible**.

Public Transport (DLR, LUL, Bus Network)

7.181 During the construction period there would be an increased number of workers in the local area that would use the public transport network. As the majority of the construction workers would be travelling outside of the peak periods due to their normal working hours the residual effect would therefore be **Negligible**.

Completed Development

Pedestrian and Cyclist Facilities and Conditions

7.182 The pedestrian environment within the application site will be of high quality with the provision of an attractive open space, well maintained and legible pathways and lighting, thus providing natural/passive surveillance. The pedestrian environment will be further enhanced by providing new crossing points on Anchor and Hope Lane and additional pedestrian/cycle only links to the Thames Path and Anchor and Hope Lane. On-site landscaping details and the entering into a Section 278 highway works agreement would be conditioned as part of any planning permission for the proposed development and therefore the final details will be agreed post-planning as part of the discharge of such a condition.

7.183 Proposed cycle parking facilities would encourage an increase in the use of cycling. Any increases would be monitored as part of the Travel Plan surveys and ongoing monitoring.

7.184 The completed development would provide a well-designed pedestrian and cyclist environment and therefore will result in a residual **Negligible to Moderate Beneficial** effect on pedestrian amenity and a **Negligible** residual effect on cyclists within the study area.

[14] Buchanan C et al (1963) - The Buchanan Report 'Traffic in Towns'

Public Transport Network and Accessibility

7.185 Whilst there is predicted to be an negligible effect on bus and rail service capacities, TfL will require contributions towards improving bus service frequencies as part of the proposed development to accommodate the additional patronage predicted. This will be secured through a financial contribution to bus services. As this would increase service frequencies or the number of services provided it would also benefit the wider public within the area.

7.186 With the provision of funding for a bus service enhancement the residual effect on these services is considered to be **Negligible to Minor Beneficial**. There would be a **Negligible** residual effect on rail services.

Traffic Flows and Highways

7.187 There would be a major adverse effect on the Site Access and moderate adverse effect on traffic flow levels on Anchor and Hope Lane. However, these roads currently have low baseline flows and the increase in traffic is within the threshold of environmental capacity for a residential road. There will also be highway enhancement works at the Site Access and Anchor and Hope Lane and therefore the residual effect is expected to be **Minor Adverse to Negligible** based on the improvements proposed to the local highway in the vicinity of the application site.

7.188 The effects on the wider highway network are however considered to be **Negligible**. Therefore no mitigation is required in respect of traffic flows on the surrounding highway network.

7.189 The completed development will be subject to a Travel Plan, a Car Park Management Plan and a Delivery and Servicing Plan. Each of these will be subject to planning conditions or Section 106 Obligations within any planning consent for discharge post-planning.

- Travel Plan – a Residential Travel Plan will encourage public transport use, walking and cycling amongst occupants of the proposed development with the aim of reducing private car use;
- Car Park Management Plan – this will set out the management and operation of the on-site parking provision. This would be in combination with a permit-free agreement; and
- Delivery and Servicing Plan – this will manage the arrival and departure of delivery and servicing vehicles and their activities when on-site.

7.190 As a result of these measures the residual effects of the proposed development on traffic flows would be **Negligible to Minor Beneficial**.

Summary of Mitigation and Residual Effects

7.191 Table 7.18 and Table 7.19 provide a tabulated summary of the outcomes of the proposed mitigation measures and the residual effects.

Table 7.18: Summary of Proposed Mitigation and Enhancement Measures

Receptor	Description of Potential Effect	Proposed Mitigation & Enhancement Measures
Demolition and Construction		
Highway network	Effects of traffic flows from construction vehicle movements upon the local highway network.	Environmental Management Plan (EMP) and Construction Logistics Plan (CLP) prior to commencement
Pedestrians	Effects of construction activities on pedestrian movement and capacity, severance, delay, fear and intimidation, amenity.	Management of walkways, any temporary closures and routing would be agreed with the RBG through the CLP and EMP post-planning and prior to commencement.
Cyclists	Effects of construction on cyclists.	Management of road closures and routing would be agreed with the RBG through the CLP and EMP post-planning and prior to commencement.
Public transport	Effects of increased number of public transport trips as a result of construction workers' travel.	No mitigation required.
Completed Development		
Pedestrians	Effects of the proposed development on pedestrian movement and capacity, severance, pedestrian delay, pedestrian amenity and pedestrian fear and intimidation.	New crossing points and pedestrian environment enhancements on Anchor and Hope Lane. Additional pedestrian/cycle links to Anchor and Hope Lane and the Thames Path. High quality pedestrian environment within the application site.
Cyclists	Effects of the proposed development cycle trips.	Enhanced cycle environment on Anchor and Hope Lane. Additional pedestrian/cycle links to Anchor and Hope Lane and the Thames Path.
Bus	Effects of the proposed development bus trips.	Financial contributions towards improving /enhancing bus service frequencies through S106 Agreement.
Rail	Effects of the proposed development rail trips.	No mitigation required.
Highway network	Effects of the proposed development traffic flows.	Highway enhancement works to the Site Access and Anchor and Hope Lane. Implementation of Travel Plan, Car Park Management Plan and Delivery and Servicing Plan.

Table 7.19: Summary of Residual Effects

Receptor	Description of Residual Effect	Nature of Residual Effect*					
		Significance **	+ -	D I	P T	R IR	St Mt Lt
Demolition and Construction							
Highway network	Effects of traffic flows from construction vehicle movements upon the local highway network.	**Moderate (beneficial)** to Minor (adverse)	+/-	**D**	**T**	**R**	**St**
	Effects of traffic flows from construction	Minor	-	D	T	R	St

Table 7.19: Summary of Residual Effects							
	vehicle movements upon the Site Access.						
Pedestrians	Effects of construction activities on pedestrian movement and capacity, severance, delay, fear and intimidation, amenity.	Negligible	N/A	D	T	R	St
Cyclists	Effects of construction on cyclists.	Negligible	N/A	D	T	R	St
Public transport	Effects of increased number of public transport trips as a result of construction workers' travel.	Negligible	N/A	D	T	R	St
Completed Development							
Pedestrians	Effects of the proposed development on pedestrian movement and capacity, severance, pedestrian delay, pedestrian amenity and pedestrian fear and intimidation.	**Negligible to Moderate**	**+**	**D**	**P**	**IR**	**Lt**
Cyclists	Effects of the proposed development cycle trips.	Negligible	N/A	D	P	IR	Lt
Bus	Effects of the proposed development bus trips.	Negligible to Minor	+	D	P	IR	Lt
Rail	Effects of the proposed development rail trips.	Negligible	N/A	D	P	IR	Lt
Highway network	Effects of the proposed development Traffic Flows.	Negligible to Minor	-	D	P	IR	Lt

Notes:
* - = Adverse/ + = Beneficial; D = Direct/ I = Indirect; P = Permanent/ T = Temporary; R=Reversible/ IR= Irreversible; St- Short term/ Mt –Medium term/ Lt –Long term.
**Negligible/Minor/Moderate/Major

Likely Significant Environmental Effects

7.192 Based on the assessment set out in this chapter, there would be no significant adverse residual environmental effects. There would be likely significant beneficial effects of traffic flows from construction vehicle movements upon the local highway network and pedestrian effects within the application site and immediate pedestrian network.

Cumulative Effects

7.193 In order to assess the cumulative effects of the proposed development and 'other developments' on the road network, public transport, pedestrians and cycling facilities surrounding the application site, a cumulative assessment has been undertaken. As described within Chapter 2: EIA Process and Methodology of this ES, there are 15 developments in the vicinity of the proposed development with the potential to result in cumulative effects. The transport effects of each of these schemes have been assessed as part of this section of the chapter.

Demolition and Construction

7.194 Given that there is an uncertainty over when the various 'other developments' would come forward in the area, the methods of construction that would be employed; the management measures that would be adopted at each site; and the periods of peak construction, it is difficult to predict the cumulative impacts of construction activities, particularly where the intensive operations are of short duration.

7.195 It is anticipated that each site coming forward would be required to develop their own EMP and therefore agree vehicular numbers and vehicular routes with the RGB and TfL. It is therefore considered that on this basis and subject to the implementation of best practice construction traffic management measures, the residual cumulative effects on all modes of transport would be negligible and that the cumulative increase would still leave capacity on the local roads.

Completed Developments

Effect on Pedestrian Movement, Capacity, Severance, Delay, Fear and Intimidation, Amenity

7.196 Each of the 'other developments' would generate their individual number of pedestrian trips, but as with the proposed development, they would be required to deliver schemes that would enable easy pedestrian movement, not restrict capacity, provide high environmental and design quality and improved public realm.

7.197 These would translate as mitigation measures and when considered collectively would be expected to result in negligible to minor beneficial effects on pedestrian movement, capacity, severance, delay, fear and intimidation, and amenity.

Effect on Cycling Movement and Capacity

7.198 Each of the 'other developments' would generate their individual number of cycling trips, but similar to the proposed development, they would be required to deliver schemes of high environmental and design quality, improved public realm provisioning and sufficient cycle parking space provided for occupants and visitors.

7.199 These would translate as mitigation measures and when considered collectively would be expected to result in negligible effects on cycling capacity.

Effect on Bus Services

7.200 As part of current TfL guidance, developers are required to provide the likely bus trip generation associated with their site together with an associated trip purpose and distribution analysis. TfL subsequently undertake their own capacity analysis based on their current and proposed level of services to meet predicted demand levels. The additional demand of the 'other developments' on bus services would be mitigated directly by the proposed development through bus service enhancements secured as S106 Agreement planning contributions. Therefore cumulative effect would be negligible to minor beneficial.

Effect on DLR Services

7.201 Developers are required to provide the likely rail trip generation associated with their site together with an associated trip purpose and distribution analysis. Rail operators subsequently undertake their own capacity analysis based on their current and proposed level of services to meet predicted demand levels. The additional demand of the 'other developments' on rail services would be mitigated directly by the proposed development through service enhancements secured as planning contributions. In addition, in order to provide long term capacity improvements to rail transport, Crossrail is under construction and will be open in 2018/19. This will provide significant additional rail capacity within the area with Woolwich being the closest station. Therefore residual cumulative effect would be negligible to minor beneficial.

Effect on Traffic Flows

7.202 The cumulative baseline traffic flows have been estimated based on the trip generation set out in each of the 'other development's' Transport Assessments which have been obtained from the RBG. Table 7.20 provides details of the future baseline traffic flows based on these calculations.

Table 7.20: Cumulative Assessment of Traffic Flows

Link	Baseline flows		Cumulative Baseline + Proposed Dev		Percentage Difference	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Anchor & Hope Lane North of Bugsby's Way	251	249	371	327	47.8%	31.3%
Anchor & Hope Lane North of Site Access	192	135	185	134	-3.6%	-0.7%
Anchor & Hope Lane South of Bugsby's Way	1,286	1,569	1,438	1,757	11.8%	12.0%
Bugby's Way West of Gallions Road	1,327	1,700	1,494	1,869	12.6%	9.9%
Bugby's Way East of Gallions Road	1,362	1,995	1,530	2,169	12.3%	8.7%
Charlton Church Lane North of Delafield Way	404	450	426	480	5.4%	6.7%
A206 East of Anchor & Hope Lane	2,137	2,587	2,297	2,761	7.5%	6.7%
A206 West of Anchor & Hope Lane	1,201	1,234	1,284	1,291	6.9%	4.6%
Site Access	107	120	220	197	105.6%	64.2%
Gallions Road	202	390	201	394	-0.5%	1.0%

7.203 As can be seen from the above assessment, when the cumulative baseline plus proposed development traffic flows are compared with the baseline, the Site Access and Anchor and Hope Lane between Bugsby's Way and the Site Access would experience increases in traffic flows which exceed the Rule 1 threshold with moderate to major adverse significance. This is as the direct result of the completed development and has been assessed in this chapter with mitigation measures proposed. This assessment showed that these roads would remain within the environmental capacity thresholds for residential streets. Therefore the cumulative effect is expected to be negligible to minor adverse.

7.204 All other links would experience an increase of traffic of less than 30% during both the AM and PM peak. Anchor and Hope Lane north of the Site Access would experience a reduction in traffic. Therefore, the cumulative effect is assessed as being negligible across the wider road network.