

## 7. Traffic and Transport

### 7.1 Introduction

- 7.1.1 This Chapter, which has been prepared by URS, provides a statement of conformity with regard to the potential traffic and transport impacts arising from the Scheme with Phase 1A (North) in place (hereafter referred to as the 'Development'). This statement of conformity is provided pursuant to the s.73 ES to confirm that the overall findings of the s.73 ES with respect to traffic and transport remain valid. Impacts associated with traffic and transport including noise and air quality are addressed separately within **Chapters 9** and **14** respectively.
- 7.1.2 Since the s.73 ES was prepared, the detailed design of highway improvements, bridges and other elements of Phase 1A (North) previously approved with full planning permission for the Gateway Junctions in outline for the remainder have been developed in more detail in consultation with LBB and Transport for London (TfL). Further studies have also been undertaken to inform the detailed design development and technical approvals process including traffic modelling which is reported in this Chapter.
- 7.1.3 This Chapter is supported by:
- **Appendix 7.1:** Reserved Matters Transport Report (RMTR): Phase 1A (North);
  - **Appendix 7.2:** BXC05 Consolidated Transport Assessment (Volumes 1 & 5) as presented in the s.73 Application;
  - **Appendix 7.3:** BXC-DDM Traffic Survey Report;
  - **Appendix 7.4:** Highway Forecasting Report;
  - **Appendix 7.5:** RMA Junction Assessment Report;
  - **Appendix 7.6:** Phase 1A (North) Pedestrian and Cycle Strategy;
  - **Appendix 2.1:** General arrangements of the Phase 1A (North) highways; and
  - **Appendix 2.2:** Construction Impact Assessment Addendum (BXC21).

### 7.2 Policy, Legislation and Guidance

- 7.2.1 There have been no significant changes to policy, legislation or guidance since the s.73 ES was prepared which have a material effect on the approach to or findings of the assessment. A review of material published or amended since October 2013 is set out below for reference.

#### National Planning Practice Guidance

- 7.2.2 The above guidance was published in 2014, comprising a web-based resource which provides further details relating to the policies set out within the National Planning Policy Framework (NPPF) published in 2012<sup>ii</sup>. This guidance provides advice on when transport assessments and transport statements are required and what they should contain.

#### Draft Further Alterations to the London Plan (FALP), 2014

- 7.2.3 On 15 January 2014 the Mayor published for a twelve week period of consultation. A schedule of suggested changes was then published on 7 July 2014 following a review of the consultation

responses. An Examination in Public commenced (September 2014) on the draft FALP which has therefore yet to be adopted.

7.2.4 Whilst the FALP makes some specific reference to the London Boroughs, policy within the publications which relates to the location and sustainable nature of the new development and its level of transport accessibility are especially relevant. These are outlined below:

- a) Policy 6.1 'Strategic Approach' states that "*The Mayor will work with all relevant partners to encourage the closer integration of transport and development by encouraging patterns of development that reduce the need to travel, especially by car*". In addition, those developments that generate high levels of trips will only be supported in locations with high levels of public transport accessibility.
- b) Policy 6.13 'Parking' seeks to strike an appropriate balance between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use. FALP also provides guidance on the provision of, and maximum parking and cycle parking standards in line with best practise.

### Travel Plan Guidance

7.2.5 TfL released new guidance on the requirements for travel plans for new developments in London in November 2013<sup>1</sup>. This guidance supersedes the previous TfL guidance, '*Travel Planning for New development in London: incorporating Deliveries and Servicing (2012)*'.

7.2.6 The changes outlined in this section do not have any material effect on the approach to, or findings of, the full assessment.

## 7.3 Relevant Phase 1A (North) RMAs Details

7.3.1 This section provides some background with regard to previous Transport Assessment work which is of relevance to the Chapter and sets out the principle features of Phase 1A (North) RMAs of particular relevance to the assessment. Further details can be found in **Chapter 2: Description of Phase 1A (North) RMAs** and **Appendix 7.1**, whilst **Figure 2.3** illustrates the areas of highways infrastructure included in these RMAs.

### Transport Assessment

7.3.2 A full Transport Assessment (TA) for the original BXC planning application was approved in October 2010 with a subsequent s.73 Application submitted in October 2013 which gained approval in July 2014 (2014 Permission). The S106 Agreement was updated and amended to reflect the TA updates provided with the s.73 Application. The Consolidated Transport Assessment (TA) main report issued in support of the s.73 Application is found in **Appendix 7.2** (main report for Volume 1 and 5 excluding appendices). All other appendices and Volumes 2 – 4 of the Consolidated TA as issued with the s.73 Application can be accessed at <http://www.brentcrosscricklewood.com>. In addition to the above documents, a Phase Transport Report (PTR) for Phase 1 has recently been completed and submitted to discharge pre-RMA Planning Condition 37.2 of the 2014 Permission. A Reserved Matters Transport Report (RMTR) has also been developed to address the detailed transport issues relating specifically to Phase 1A (North) RMAs (**Appendix 7.1**).

7.3.3 The Phase and Sub-Phase specific Transport Reports provide additional detail on proposed transport infrastructure works and management strategies of the Development within the framework set out in the Consolidated TA submitted with the s.73 Application. As such, the description of the proposed works and transport impacts remain consistent with the consented scheme as presented in the s.73 Application, however additional detail on the Phase 1A (North) roads and junctions is now available for assessment herein.

### Integrated Transport Strategy

7.3.4 The multi-modal Integrated Transport Strategy (ITS) as developed for the s.73 Application remains applicable for the provision of infrastructure within Phase 1A (North). The ITS represents a comprehensive plan for delivering the overarching transport vision for the whole Brent Cross Development area, and Phase 1A (North) has been designed within the parameters and principles set out within the approved ITS.

### Highways Strategy and Detailed Design

7.3.5 Phase 1A (North) infrastructure elements of particular relevance to the traffic and transport assessment are set out below. Further details can be found at **Chapter 2** and **Appendix 7.1**.

7.3.6 The proposed delivery of infrastructure improvements will ensure that the majority of critical highways infrastructure elements within the Scheme are completed within Phase 1A (North) ahead of the delivery of the development quanta for Phase 1. Plans showing the proposed infrastructure improvements are provided within **Appendix 2.1: General Arrangements of Phase 1A (North) Highways Infrastructure** (URS) and **Figure 2.3** showing the End State of the highways network for the Development with Phase 1A (North) roads, junctions and bridges highlighted for reference alongside this Chapter.

7.3.7 The 2014 Permission provides full planning consent in respect of nine junctions, referred to as the Gateway Junctions for which reserved matters approval does not need to be sought. Of these nine Gateway Junctions, the following highway improvements / alterations would be delivered as part of Phase 1A (North):

- M1/A406 and A5/A406 (Staples Corner);
- A41/A406 Junction;
- A5/A407 Cricklewood Lane;
- A407 Cricklewood Lane/Claremont Road; and
- A406 Brent Cross Access/Egress Junction.

7.3.8 The detailed design for the following roads and junctions are included in the Phase 1A (North) RMAs:

- A406 North Circular Road;
- A41 Southbound On-Slip;
- Tempelhof Avenue and Link Road;
- Diversion of Prince Charles Drive;
- Claremont Avenue;

- Claremont Avenue Junction with Tilling Road;
- Claremont Road North Junction;
- Tilling Road West Realignment;
- High Street South;
- Orchard Lane; and
- Modifications to BXSC Perimeter Road.

7.3.9 The following bridge structures will also be delivered as part of Phase 1A (North):

- Living Bridge (B7);
- Replacement Tempelhof Bridge A406 (B1);
- M1 pedestrian and cycle bridge (B6); and
- River Brent Bridges.

7.3.10 Key features of the open spaces and Development Plot RMAs are defined below. In addition to the highway improvements above, the following areas will see improved transport links, access and circulation facilities as part of Phase 1A (North).

#### Claremont Park Improvements

7.3.11 Access will be provided by gateway entrances on Brent Terrace and Claremont Road with additional footpaths and cycle routes provided within the park. To aid access to the park, all ramps and barriers will be removed and the park will be graded to ensure access for all users is achievable. A total of 20 cycle stands will be provided.

#### Clitterhouse Playing Fields Improvements (Part 1)

7.3.12 A number of facilities and improvements will be made to improve the accessibility of the playing fields as follows:

- 60 cycle parking stands including 10 at each of the entrances and distributed at the entrances, the pavilion and play areas;
- A network of new paths and cycle routes linking the playing fields together and providing access for all; and
- 21 parking spaces including six parking bays allocated to blue badge holders (accessed via Claremont Road).

7.3.13 Bus routes 102, 189, 113, N113, 226 and C11 with frequent bus stops within walking distance of the playing fields allow visitors to access the area by public transport. **Figure 7.1** provides details on how various user types will be able to access the Clitterhouse Playing Fields and shows the locations of various facilities.

7.3.14 **Figure 7.1** also illustrates that the playing fields will be accessible by various modes of transport with suitable facilities provided to support numerous user types.

### Central Brent Riverside Park, including River Brent Nature Park

- 7.3.15 A footway and cycleway will also be provided along the north bank of the River Brent within the park and access will be provided via stairs from the Living Bridge. A ramp will be provided at the western end of the park during later phases of the redevelopment and a number of overhead bridges will also be provided across the park. A total of eight cycle stands will be provided within the Central Brent Riverside Park.

### Plots 53 and 54

- 7.3.16 Each residential unit will be provided with a car parking space (total of 47) and appropriate levels of cycle parking will also be provided (further details below) and the plots will be easily accessible for various user types including pedestrians, cyclists and vehicles.
- 7.3.17 Pedestrians and cyclists will be able to access the development plots via Claremont Park and Brent Terrace North which both provide access to the frontage of the plots on Brent Terrace South. Cyclists will also be able to access the development plots from the A41 Hendon Way to the east by travelling along The Vale and then Brent Terrace South from the southern end. Pedestrians will be able to access the development plots from Clarefield Road to the north and east via Clitterhouse Road and Clitterhouse Crescent.
- 7.3.18 Two areas of cycle parking will be provided for Plot 53 and one area of cycle parking will be provided for Plot 54 to accommodate residents who wish to cycle to / from the development. One cycle space will be provided for each two bedroom flat and two cycle spaces will be provided for each three bedroom flat / houses. It is therefore intended that a total of 73 cycle spaces will be provided including 21 spaces for the 21 two bedroom flats and 52 spaces for the 26 three bedroom flats / houses.

### Public Transport Provision

- 7.3.19 The public transport strategy for Phase 1A (North) follows the principal components of the overarching strategy set out in the s.73 Application. The strategy aims to provide substantial provision for alternative modes of travel, primarily delivered through a comprehensive strategy for public transport. Phase 1A (North) would deliver infrastructure to enable the development of the new Brent Cross Bus Station, and a series of bus lane measures at key gateway junctions as part of the highway mitigation measures. During the construction of Phase 1A (North) and subsequent Phase 1 infrastructure and plots, a number of bus services will be re-routed, extended and altered.
- 7.3.20 In order to facilitate the construction of the plots in the Brent Cross East Development Zones in Phase 1B (North), it will be necessary to relocate the existing bus station for a period of approximately four years, until such time as the town centre is open and the new bus station and associated pedestrian connections become available.
- 7.3.21 A temporary bus station will be provided in the South West Car Park of the Brent Cross Shopping Centre, with capacity (e.g. drop-off, pick-up and layover stands) and supporting facilities commensurate (at a minimum) to the provision at the existing bus station. Bus stops will additionally be provided in Plot 113 to the west of the Brent Cross Shopping Centre to enable drop off and pick up of shoppers in close proximity to the shops.

### Temporary Bus Station

- 7.3.22 Construction of Phase 1A (North) necessitates the closure of the existing Brent Cross bus station which currently operates 24 hours. A Temporary Bus Station will be located within the South West car park of the Brent Cross Shopping Centre, with capacity (e.g. drop-off, pick-up and layover stands) and supporting facilities commensurate (at a minimum) to the provision at the existing bus station. Bus stops would additionally be provided in Plot 113 to the west of the Shopping Centre to enable drop off and pick up of shoppers in close proximity to the shops. It is proposed that buses would drop passengers at Plot 113 bus stops during the core trading hours (plus approximately half an hour either side) of the Shopping Centre to facilitate ease of access for employees and visitors.
- 7.3.23 The Temporary Bus Station would be operational for Q1 2017 until the opening of the redeveloped Shopping Centre and permanent Bus Station which is estimated to be Q1/2 2021 (approximately four years of operation). Construction of the temporary bus station and bus stops is likely to commence in Q3 2016 and have a six month duration.
- 7.3.24 The Temporary Bus Station will include provision for 18 layover stands, four drop off and four pick up spaces to accommodate the anticipated demand. The bus stops at Plot 113 will include provision for three drop off and four pick up spaces. There would be a dedicated pedestrian walkway from the Temporary Bus Station to the Shopping Centre.

### Pedestrians and Cyclists

- 7.3.25 The principals for the provision of pedestrian and cycling facilities set out in the s.73 ES remain applicable to Phase 1A (North) RMAs. A Phase 1A (North) Pedestrian and Cycle Strategy has been developed to support the RMTR's. The strategy sets out the details of the pedestrian and cycle links and facilities within Phase 1A (North) in accordance with the 2014 Permission.
- 7.3.26 Phase 1A (North) includes a comprehensive walking and cycling network (see **Figure 7.2**) which will ensure that connectivity is maintained with the surrounding pedestrian and cycle networks whilst remaining adaptable for future phases throughout the construction of Phase 1A (North).
- 7.3.27 The key pedestrian and cycle links within Phase 1A (North) as reported within the Pedestrian and Cycle Strategy (**Appendix 7.6**) include:
- Around the Brent Cross Shopping Centre connecting with surrounding networks at Shirehall lane roundabout, eastern roundabout, Sturgess Avenue, Layfield Road, western roundabout, Tempelhof Bridge and Living Bridge;
  - Pedestrian and cycle link alongside the River Brent between A41 and the western roundabout;
  - Pedestrian only link alongside River Brent Corridor from west of western roundabout to M1 underpass;
  - Brentfield Gardens towards Brent Cross London Underground station (including link over A406 Brent Cross flyover);
  - Tempelhof Bridge;
  - Claremont Avenue and Claremont Road;
  - Links onto Brent Terrace North and Brent Terrace South;
  - Pedestrian and cycle links on northern and southern side of Staples Corner/M1/A406 junction;

- Cycle and pedestrian link through Claremont Park;
- Cycle and pedestrian link through Clitterhouse Playing Fields; and
- Cycle and pedestrian link through Sturgess Park.

### Car Parking

- 7.3.28 The Phase 1A (North) RMAs include car parking for residential Plots 53 and 54 and for Clitterhouse Playing Fields (detailed above). A total of 47 parking spaces will be provided across the two plots (53 and 54), whilst a minimum of 15 parking spaces will be provided at Clitterhouse Playing Fields.
- 7.3.29 There will be no permanent parking associated with the Phase 1A (North) infrastructure works. In addition, there will be no car parking provided for Claremont Park or the Central Brent Riverside Park.

### Travel Planning

- 7.3.30 The Framework Travel Plan (FTP) and Construction Worker Travel Plan (CWTP) as set out within the Consolidated TA (**Appendix 2.2**) remain applicable at the time of writing. The overall objective of these Travel Plan frameworks is to reduce the impact of daily travel needs associated with the Scheme, on the transport network and on the environment. The content and mechanisms for delivering travel behaviour changes and the agreed travel outcomes through a hierarchy of travel planning has been refined in discussion with LBB and TfL and details will be set out in Individual Travel Plans (ITPs) for specific development plots.
- 7.3.31 In addition to the frameworks, a Framework Servicing and Delivery Strategy (FSDS) has been developed that sets out the agreements and commitments made at the outline planning stage and provides a structure for the consideration of servicing and delivery issues at subsequent stages in the planning consents process and during the operation of the Development. This strategy will influence the volume and pattern of servicing and delivery activity associated with the Development area. In addition to the FSDS, a Servicing and Delivery Strategy (SDS) is required for each phase or sub phase of development. The SDS for Phase 1A (North) has been developed (47065005-TP-RPT-056).
- 7.3.32 The overarching aim of the FSDS and the SDSs prepared for each Phase or Sub-Phase is to reduce the potential impacts of delivery and servicing activity generated by the Development during the operation of the Site on the human and physical environment. These will be produced pre-commencement when further detailed design of construction activities is known.
- 7.3.33 For the Phase 1A (North) RMAs, the only elements which have servicing and refuse collection requirements are Plots 53 and 54. Refuse collection at the plots is proposed to be undertaken by local authority waste collection services as per those currently existing at Brent Terrace. A turning circle is proposed at the end of Brent Terrace to enable waste and servicing vehicles to more easily exit the street rather than reversing its whole length. The servicing and waste collection requirements have been assessed in regards to traffic and are incorporated into the detailed design.

## 7.4 Assessment Methodology

### Baseline Data

- 7.4.1 Since the preparation of the Consolidated TA, some further baseline data has been obtained to inform the detailed design and further studies. The context of the data collection exercise was the need to obtain up-to-date information on traffic conditions that would in turn be used to update and refine the highway traffic modelling work undertaken. This data collection exercise was undertaken in the summer of 2013 and further details are provided in the DDM Traffic Survey Report (47065005-TP-RPT-019) (**Appendix 7.3**).
- 7.4.2 The baseline data includes the following existing data sources:
- TfL Count Sites;
  - Traffic Master Data; and
  - West Hendon Data.
- 7.4.3 In addition to the existing data sources a series of on-site data collection were undertaken between 17<sup>th</sup> June and 8<sup>th</sup> July 2013, including:
- Automatic Traffic Counts;
  - Manual Classified Counts;
  - Journey Time Surveys;
  - Automatic Number Plate Recognition; and
  - Car Parking Surveys.

### Construction Impacts

- 7.4.4 The Construction Impact Assessment Addendum (BXC21) (**Appendix 2.2**) accompanied the s.73 ES and identified the traffic impacts during construction of the Development on the basis of worst case flows. Chapter 7: Traffic and Transport of the s.73 ES identified the impacts, as assessed in the TA, of cumulative traffic (including operational and construction traffic). Chapter 20: Interim Years Assessment of the s.73 ES also provided a summary of the assessment of interim years as presented in the TA. The assumptions presented in the CIA Addendum and s.73 ES have been revisited by URS and Mace, the project construction consultants, now that the detailed design of Phase 1A (North) is known to confirm whether the assessment remains valid or whether further information is now available. Further commentary is also provided in respect of likely significant impacts in light of the details of Phase 1A (North) which are now available.

### Traffic and Transport Modelling

- 7.4.5 For the s.73 Application, the modelling reported in the Consolidated TA (**Appendix 7.2**) was based on a 2005 validation, using a bespoke SATURN (Simulation and Assignment of Traffic to Urban Road Networks) model derived from the Highways Agency's traffic flow model for London known as 'NAOMI' (M25 Corridor study area). Impacts of the Scheme on public transport were modelled based on the TfL's London-wide public transport model known as 'Railplan' which was validated by TfL in 2006.

- 7.4.6 The NAOMI, Railplan and traffic (SATURN) models underwent local improvements to the network to represent the s.73 Application in more detail. A bespoke model was also developed to estimate a number of different demand responses using travel costs from the assignment models. These models are collectively referred to as the 'BXC-Traffic Model' (BXC – TM).
- 7.4.7 Following approval of the s.73 Application and through discussions with LBB and TfL it was agreed that further highway modelling would be undertaken for the purposes of detailed design checks and to inform the Technical Approvals process for the Highways Authorities' functions. Technical Approval for highway works relates to the approval of detailed design by the Highway Authority and under Section 278 of the Highways Act 1980.
- 7.4.8 Subsequent to the s.73 Application the Brent Cross Cricklewood Detailed Design Model (BXC-DDM) was therefore produced to enable the extraction of traffic forecasts to inform the detailed highways design layout for the Development. The BXC-DDM model is based on an enhancement to the latest release version of TfL's NoLHAM model of North London and to Railplan v.6 to represent the Development. The specific purpose of developing this new multi-modal model was to inform the detailed design process associated with the transport infrastructure for the Technical Approvals process for the Highways Authorities' functions (i.e. s.278 process).
- 7.4.9 The BXC-DDM is being used in conjunction with local VISSIM modelling and detailed highway junction models, to assess people and traffic movements to, from and within the Development for the purposes of detailed design of the new transport infrastructure relating to the Development. A summary of the basis of the modelling is provided below.
- 7.4.10 The BXC-DDM was calibrated and validated to 2012 as the 'Baseline Year' as a locally-enhanced version of TfL's NoLHAM model of North London. Its purpose was to provide the starting point to estimating future traffic in order to check the highway layout designs and to assess the impact on the network in the area of the A5 in 2021 and 2031. It has also been used to derive traffic data for the purposes of updated noise and air quality assessments within this Report. The BXC-DDM has not been used to revisit the transport impacts of the Development set out in the s.73 Approval. The BXC-DDM has been developed to advise the detailed design and technical approvals process. BXC-DDM outputs have been used to inform a Junction Assessment Report for all highway works in Phase 1A (North) in the RMTR. The Junction Assessment Report identifies and assess any significant changes in traffic flows through the refined detailed design.
- 7.4.11 A Highway Forecasting Report has been prepared by URS (**Appendix 7.4**) that describes the work done to adapt the calibrated and validated enhanced base year highway models to represent the future scenarios, and the results of the highway assignments undertaken, including:
- Demonstrating the integrity of the modelling according to TfL's guidance;
  - Assessing the effect of the 'Do Nothing' and 'Do Something' scenarios in 2021 and 2031;
  - Supplying forecast flows to the junction models and to the A5 Area Study; and
  - Checking the operation of modified bus services.
- 7.4.12 The BXC-DDM models the network area, and therefore the Development as a whole. The BXC-DDM does not model specific sub-phases of the Development.

## Public Transport Modelling and Impacts

- 7.4.13 The Public Transport modelling included within the BXC-DDM was based on a revised version of TfL's Railplan, with demand coming from their London Transportation Studies (LTS) model. This together with the above traffic modelling formed the elements of the BXC-DDM.
- 7.4.14 Changes in supply to create the future year scenarios from the calibrated base year model consisted of updating the base year networks with committed schemes (cumulative) expected to be operational by the forecast years in question (2021 for end of Phase 1 and 2031 for the End State). These schemes were obtained directly from TfL and have been reviewed to ensure that the cumulative schemes identified within this Report for assessment are consistent with the TfL list (at least including all those of a large-scale or notable in transport generation terms). The resulting 'Do Minimum' networks have then incorporated the Development mitigation measures to create the corresponding 'Do Something' networks.
- 7.4.15 For demand changes in the future, TfL's guidance specifies the use of their LTS model to produce matrices of highway trips and public transport trips (bus, rail and underground) separately, using scheme-specific inputs to modify LTS's GLA-based 'Reference Case' assumptions about future land use and demographic projections. The 'Do Minimum' matrices excluded the Development, while the 'Do Something' matrices included it.
- 7.4.16 The public transport modelling covers the network area, and therefore the Development as a whole. The modelling does not reflect specific Sub-Phases of the Development.

## Significance Criteria

- 7.4.17 The identification of any likely significant effects involves the exercise of judgement as to the significance of effects based on the quantitative data available. Therefore, the quantitative data has been considered and professional judgement applied to determine whether the impacts identified in the s.73 ES and Consolidated TA remain valid in terms of the likely significant effects and any necessary mitigation and/or where new information has been considered necessary.

## Limitations and Constraints

- 7.4.18 As outlined above, the BXC-DDM modelling works are currently ongoing to inform the detailed design for technical highways approval. The Highways Forecasting Report (**Appendix 7.4**) sets out the results of the future year model scenarios as reported by the BXC-DDM, and discusses the results in terms of the proposed highway design concluding that the proposed infrastructure accommodates the additional traffic generated by the Development.

## 7.5 Consultation

- 7.5.1 The development of the transport modelling assessment and methodologies have been developed through extensive consultation with both LBB and TfL. The discussions with LBB and TfL informed the development of both the BXC-TM and BXC-DDM, including with respect to the modelling assumptions and forecasting details.
- 7.5.2 In its informal scoping review, LBB requested that the Pedestrian and Cycle Strategy which has been submitted as a pre-RMA planning condition under the 2014 Permission is considered within the Traffic and Transport Chapter. In undertaking its review of the Pre-RMA planning conditions,

Waterman determined that no further environmental information is necessary to support the determination of this planning condition because there are no new or difference likely significant effects identified, although commentary is provided on the Pedestrian and Cycle Strategy, where appropriate in this Chapter.

- 7.5.3 TfL provided comments on the EIA Scoping Report which form part of LBB's Scoping Opinion (**Appendix 4.2**). The key comments raised and the responses to each are presented in **Table 4.1** in **Chapter 4: Approach to the ES Further Information Report**.

## 7.6 Baseline Conditions

- 7.6.1 An extensive baseline description of traffic and transport conditions was included in Volume 1 of the Consolidated TA Main Report which accompanied the s.73 Application (now appended at **Appendix 7.2**).
- 7.6.2 Since the preparation of the Consolidated TA, some further baseline data has been obtained to inform the detailed design and further studies as described under 'Assessment Methodology'.
- 7.6.3 This baseline is presented in the BXC-DDM Traffic Survey Report. The data collection exercise was undertaken principally to provide input to the validation of the BXC-DDM providing calibration input counts and independent validation counts for the three one-hour periods modelled (weekday AM and PM peak and Saturday peak). This data is not reproduced in full within this Chapter due to the size and complexity of the data. However, the data does not materially affect the findings of the Consolidated TA or Chapter 7 of the s.73 ES in that it does not result in new or different likely significant effects or mitigation and therefore the baseline of the s.73 ES remains valid.
- 7.6.4 Chapter 2 of the RMTR (**Appendix 7.1**) contains information on the baseline transport environment at the Site. This baseline is summarised below to provide context on the existing network and transport provision against the Development proposals contained within Phase 1A (North).

### Public Transport Accessibility Level (PTAL)

- 7.6.5 PTALs are a detailed and accurate measure of the accessibility to the public transport network of a locational point, which takes into account the walk access time and the service availability. The method is a way of measuring the density of the public transport network at a particular point. The PTAL levels are divided into bands from 1 (Very poor) to 6b (Excellent). The PTAL levels of the Site are shown on Figure 2.1 of **Appendix 7.1** illustrating the most up to date PTAL heat map derived by TfL for the whole Borough, as well as the neighbouring boroughs of Brent and Camden. This map utilises LUL/DLR, National Rail, London Overground and London Buses data from 2011. The areas of highest existing accessibility are clustered around Brent Cross Bus Station, one of London's largest bus stations, Brent Cross LUL Station and Cricklewood Rail Station. Clitterhouse Playing Fields and Brent Terrace are observed to currently have poor PTAL scores.

### Pedestrian and Cyclist Amenities

- 7.6.6 The existing cycle and pedestrian provisions in the area are very limited with access restricted by the Site location and the significant severance resulting from the A406, A5, A41 and the railway line (Midland Main Line) transport corridors. **Figure 7.3** shows the shows the existing pedestrian and cycle network.

- 7.6.7 The key pedestrian amenities include the Capital Ring strategic walking network sections 10 and 11 which pass 100m north of the Site along Beaufort Gardens, providing a good walking link between Brent Reservoir and Hendon Park as well as Hendon rail station and Hendon Central LUL station.
- 7.6.8 Pedestrian provision within the development area is primarily via footways adjacent to the existing access roads. There are footpath links through the open space of the Clitterhouse playing fields, to the north of the Shopping Centre, footpath links with Brent Terrace and footpath links between Brent Cross LUL station and the Shopping Centre. There is also a footpath along the whole length of the western side of the residential properties in Brent Terrace. In general the pedestrian environment is poor.
- 7.6.9 There are a number of constraints to pedestrians in the area, formed by the A406, the River Brent, the A41 Hendon Way, the A5 Edgware Road, Midland Main Line (MML) railway and the M1 junction at Staples Corner as identified in section 2.4.1 of **Appendix 7.1**.
- 7.6.10 Cycle facilities are currently poor with little connectivity across the development area. There are several designated cycle routes and combined cycle/pedestrian routes in the area, some of which form part of the London Cycle Network (LCN and LCN+) and the National Cycle Network, but they are very hard to identify on the ground and are not considered safe routes for inexperienced riders. In general provision between the Site and the adjacent residential areas is constrained by the existing major transport corridors and the River Brent (as described above), which together form a barrier around much of the Site. Details of the available cycle routes in and around the Site are provided in **Appendix 7.1** along with a review of cycle parking facilities identified by means of cycle parking surveys undertaken at the Site by URS in 2013.
- 7.6.11 As required by Condition 1.20 of the 2014 Permission and S.106 agreement, an Area Wide Walking and Cycling Study (AWWCS) is required to be submitted to and approved by LBB. As a precursor to this document Pedestrian Environment Review System (PERS) and Cycling Environment Review System (CERS) audits were carried out along a number of agreed pedestrian and cycle routes from the red line boundary to a number of agreed key destinations in the vicinity. These are summarised in the BXC PERS and CERS Audit Findings Report (47065005-TP-RPT-033 Rev 02), dated August 2014. In addition at TfL's request, the walking and cycling links alongside the A406 and A41 were assessed and existing links along the A5 were reviewed as part of the A5 Corridor Study (also required Condition).
- 7.6.12 The key pedestrian and cycle links within Phase 1A (North) are summarised as follows:
- Around Brent Cross Shopping Centre connecting with surrounding networks at Shirehall lane roundabout, eastern roundabout, Sturgess Avenue, Layfield Road, western roundabout, Tempelhof Bridge, Living Bridge;
  - Pedestrian and cycle link alongside the River Brent between the A41 and the western roundabout;
  - Pedestrian only link alongside River Brent Corridor from west of western roundabout to M1 underpass;
  - Brentfield Gardens towards Brent Cross London Underground station (including link over A406 at Brent Cross Flyover);
  - Tempelhof Bridge;

- Claremont Avenue and Claremont Road;
- Links onto Brent Terrace North and Brent Terrace South;
- Pedestrian and cycle links on northern and southern sides of Staples Corner/M1/A406 junction and pedestrian/cycle bridge across junction;
- Pedestrian links/ bridges at western extents of Staples Corner/M1/A406 junction;
- Cycle and pedestrian link through Claremont Park;
- Cycle and pedestrian links through Clitterhouse Playing Fields; and
- Cycle and pedestrian link through Sturgess Park.

7.6.13 The identification of key destinations and desire lines is held in Section 4 of the Phase 1A (North) Pedestrian and Cycle Strategy.

### Highway Network

7.6.14 The following local roads are identified as of importance to the Site (as identified on **Figure 7.4**):

- Prince Charles Drive;
- Claremont Road;
- Tilling Road;
- Tempelhof Avenue;
- The Vale;
- Chichele Road;
- Humber Road;
- Geron Way;
- Edgware Road (A5);
- Cricklewood Lane;
- Brentfield Gardens;
- Pennine Drive; and
- Lichfield Road

7.6.15 A description of these each of these roads is provided in Section 3.1 of the RMTR.

### Baseline Traffic Flows

7.6.16 Baseline traffic flow data for the highway network surrounding the Site, which was reviewed as part of the s.73 Approval, is set out in the Consolidated TA at **Appendix 7.2**.

### Future Baseline

7.6.17 Background traffic growth to the future assessment year of 2031 was used in the BXC-TM. Further details of future baseline flows are provided in the Consolidated TA at **Appendix 7.2**.

### Existing Road Personal Injury Collisions and Safety

7.6.18 The review of Personal Injury Accident (PIA) data is contained within Appendix C of the PTR:P1.

### Buses and Coaches

7.6.19 A range of bus services, operated on behalf of TfL London Buses pass through or close to the Site. The majority of the bus services start from or pass through the existing bus station at Brent Cross Shopping Centre. This bus station serves the Brent Cross Shopping Centre and also operates as a local bus hub. Other bus hubs in the vicinity are located at North Finchley and Golders Green.

7.6.20 Bus stops are located approximately every 350m along each road in the area which carries bus routes. The bus station adjacent to the Shopping Centre has four stops for bus services and space for approximately 15 buses to stand away from the stops. The area is well served by the bus route network, with frequent services to a variety of destinations in London. The bus route network in the area is centred on Brent Cross Bus Station, which is the terminus for a number of services. A plan showing the existing bus routes in and around the Site is contained in Appendix D of Appendix 7.1. Cricklewood Bus Garage is located to the west of the Site on the Western side of the A5 Edgware Road.

7.6.21 Bus lanes are provided at a number of locations in the vicinity of the Site. A significant proportion (approximately 30% by length) of the A5 Cricklewood Broadway and Edgware Road between the A406 and A407 is specified as bus lane. This reduces single and dual carriageway 2-lane operation to a single lane of general traffic over the relevant sections. There are no bus lanes on the immediately adjacent sections of the A41 Hendon Way. Detailed bus data showing the number of passengers boarding and alighting key services and including Bus Origin and Destination Survey (BODS) data and key point data collected by TfL London buses is contained within Section 3 of the PTR:P1.

7.6.22 Coach parking for one vehicle is provided at Brent Cross Shopping Centre, for shopping trips to the centre by organised coach parties. There are currently no express or limited-stop coaches that stop in Brent Cross Bus Station. However, there are a number of Greenline express coach services (as well as other services) that stop on the A406 North Circular Road at stops J1 and J2 which provide 24 hour connections to a number of destinations including airports. Details of these services are provided within Section 3 of the PTR:P1.

### Rail

7.6.23 The National Rail lines in the vicinity of the Site are shown in Figure 2.7 in Volume 1 of BXC05 (**Appendix 7.2**) and remain unchanged. The Midland Mainline (MML) railway corridor passes through the western edge of the Site and comprises three pairs of railway lines:

- The slow lines (on the east side);
- The fast lines (in the centre); and
- The Hendon freight lines (on the west side).

7.6.24 The Site is served at the southern end by the existing Cricklewood Railway Station. Hendon station is around 3km to the north outside of the Site boundary. The existing station at Cricklewood has some 1.07m passengers per annum (ORR data for 2011/12) a decrease in the 1.54m passengers per annum quoted from the 2006/07 ORR data in BXC05.

7.6.25 'Thameslink' services are currently operated by Govia Thameslink Railway (GTR) serving Cricklewood Station and Hendon Station and provide four stopping 4-car trains per hour on the slow lines in each direction for the majority of the weekday from Luton/St Albans to the north through Kings Cross/St Pancras and beyond to the south. Other Thameslink services pass non-stop, serving stations as far as Bedford to the north and Gatwick and Brighton to the south. During the peak periods up to 15 Thameslink trains per hour pass each way on the slow and fast lines. A plan showing the existing railway network is contained in **Appendix E of Appendix 7.1**. Details of passenger numbers are found in **Appendix 7.1**.

#### London Underground

7.6.26 The Edgware branch of the Northern line passes to the east of the Site and the Jubilee Line passes to the southwest through Willesden Green and West Hampstead. The nearest LUL station to the Site is Brent Cross Underground Station, which is located to the southeast of the A406/A41 junction. The station is isolated from the development area by the A41, and the pedestrian links through the A406/A41 junction to Brent Cross Shopping Centre and the A41 underpass to the eastern lands of Site are tortuous and not especially user friendly. The LUL station to the north of Brent Cross is Hendon Central, which is approximately 750m from the Shopping Centre. The route to the Shopping Centre from Hendon Central is more legible, experiences less severance and is considered to feel safer than the route from Brent Cross station. Details of passenger numbers for the London Underground at Hendon Central and Brent Cross stations are provided in **Appendix 7.1**.

#### Taxis

7.6.27 There are currently two informal and one formal taxi pick-up/drop-off points in the vicinity of the Brent Cross Shopping Centre. The formal Hackney Carriage rank is located immediately outside and along the southern boundary of the Bus Station, on Prince Charles Drive. It is a one-way system accessed and egressed via Prince Charles Drive eastbound carriageway. The rank can accommodate up to nine waiting taxis. The taxi rank is currently located in an area affording poor visibility and accessibility to passengers from the Shopping Centre.

7.6.28 The two informal taxi pick-up/drop-off locations tend to be used by minicabs and other private hire vehicle pre-booked taxi services. One is located at the John Lewis Customer Collection Point is on the western perimeter of the Shopping Centre, within the car park outside the John Lewis store. The pick-up/drop-off area within the car park for John Lewis Customer Collection contains 14 bays allocated for waiting vehicles. However taxis in general park directly outside the entrance doors when picking up/setting down.

7.6.29 The second informal pick-up/drop-off is situated at Service Area W, located in the north-east corner of the shopping centre site along an access road outside the Waitrose store entrance. It is accessible from a mini-roundabout at the north-eastern corner of the shopping centre's internal road network. The area reserved for drop-offs/pick-ups is not formally marked.

7.6.30 A survey of taxi facilities was undertaken on 27th July 2013 (Saturday) and 31st July 2013 (Wednesday) between the hours of 09:00 – 21:00 to establish the level of usage of the taxi ranks by passengers and taxis alike, the resulting details of which are contained in **Appendix 7.1**.

## 7.7 Assessment and Mitigation

### Construction

#### Potential Impacts

- 7.7.1 The Construction Impact Assessment Addendum (CIA) (BXC 21) formed the basis of the assessment of construction traffic impacts in the s.73 ES (**Appendix 2.2**). Section 18 of the s.73 Transport Report (BXC05) also provided an assessment of the construction impacts.
- 7.7.2 The Indicative Construction Programme (ICP) set out in the s.73 Application remain unchanged. Therefore, the construction activities presented within the s.73 Application remain applicable.
- 7.7.3 The Applicant has brought forward the delivery of Plots 53 and 54 from Sub-Phase 1C to 1A (North) through an application that was made under Planning Condition 4.2 of the 2014 Permission. The earlier delivery of these plots is considered necessary to ensure completion prior to the need for demolition works at Whitefield Estate for the Living Bridge. Following a review of the sub-phasing change it was deemed that there were no significant changes to the traffic and transport impacts as an outcome of the plots being delivered earlier in the programme. The RTMR (**Appendix 7.1**) provides further detail on the transport impacts for this sub-phase including Plots 53 and 54.
- 7.7.4 Further commentary with regard to the potential construction impacts related to Phase 1A (North) traffic and transport issues is provided below. This commentary has been prepared following a review of the CIA Addendum by Mace.

#### Construction Consolidation Centre

- 7.7.5 The CIA Addendum (BXC 21) identifies the use of a Construction Consolidation Centre or Logistics Centre as a mitigation measure to reduce the number of vehicles using the already saturated infrastructure adjacent to the Site. A Construction Consolidation Centre (CCC) is a distribution facility through which material deliveries are channelled to construction sites. Specialist material handling, storage and consolidated delivery combine to improve the overall resource efficiency of a construction project.
- 7.7.6 Condition 1.9 of the 2014 Permission requires the submission of a CCC Feasibility Study for each phase or sub phase of the development and this Study has already been submitted to LBB for approval. The CCC Feasibility Study is defined in the 2014 Permission and also the Section 106 (“S106”) Agreement as follows:
- “CCC Feasibility Study” means the detailed report in respect of a study for the respective Phase or Sub-Phase (as the case may be) into the feasibility of providing a Construction Consolidation Centre or Centres on the Site to be prepared and submitted by the developer(s) of the Northern Development and / or Southern Development (as the case may be) to the LPA for approval in accordance with Condition 1.9 of this Permission (which study and report should appropriately address the issues and opportunities for a Construction Consolidation Centre as outlined in Section 8 of the Addendum to Construction Impact Assessment (Planning Application document BXC 21) and the consideration of rail operational issues”.*
- 7.7.7 The construction traffic impacts of the CCC are not considered in detail within this Report as the final option has not yet been confirmed. It is intended that the final selection of sites would be

incorporated into the CTMP. This will therefore provide a further opportunity for consideration of these matters, within the context of the CCC Feasibility Study. In terms of construction traffic however, the s.73 ES presented a worst-case since it did not assume a CCC was in place. According to the WRAP's website ([www.wrap.org.uk](http://www.wrap.org.uk)) while data varies from project to project, use of a CCC can reduce freight traffic to construction sites by up to 70%.

#### Planning Condition Requirements

- 7.7.8 Pre-commencement Planning Condition 12.1 states that a Construction Transport Management Plan (CTMP) must be completed and approved by the local authority (LB) prior to construction of the first phase of Development. This will be developed in 2015 as construction details are finalised by the contractors and construction transport route, CCC locations and volumes of import and export materials from the Site are agreed. This condition will therefore manage the construction transport impacts to limit potential impacts.

#### Road Closures

- 7.7.9 Section 5.2 of the CIA Addendum describes the indicative road closures and lane restrictions schedule for the Development as a whole. The following list of potential road closures and lane restrictions are likely to be required in order to allow for the delivery of construction works for this Phase 1A (North) (shown on **Figure 7.5**). Further details of the road closures and diversions either permanent or temporary will be developed along with detailed traffic management plans in line with the programme to discharge pre-commencement conditions for Phase 1A (North). The key permanent and temporary road closures in relation to Phase 1A (North) are likely to include:
- Permanent closure of Etheridge Road at the start of the infrastructure works for Brent Cross Western roundabout and the construction of Templehof Bridge north of the A406;
  - Temporary closure of Templehof Avenue during its re-alignment with the new Templehof Bridge;
  - Full overnight weekend closure of A406 for the construction of A406 / A41 junction improvement works to form new deck;
  - Overnight closure of Tiling Road underpass to enable the construction of new slip road from A41 to A406 West;
  - A41 / A406 temporary single lane closures to allow construction of piers for the A41 / A406 Junction works;
  - Overnight and full weekend closure of A406 / Tiling Road to erect the sections of the new Templehof Bridge including demolition of the existing Bridge during overnight closure;
  - A406 / Tiling Road lane closure to construction piers of the new Templehof Bridge and the Living Bridge; and
  - Full weekend closure of A406 and Tiling Road to launch the Living Bridge.
- 7.7.10 In considering the scale and temporary nature of the road closures and that in most circumstances this will be of a very short duration at times of lowest traffic volumes (i.e. overnight) to ensure minimal disturbance, it is considered that the impacts on road users will be temporary, **minor adverse** to **negligible**.

### Construction Access Routes

- 7.7.11 The CIA Addendum presented an indicative layout of construction access routes per Phase. Details of construction access will be subject to approval under relevant planning conditions relating to the CTMP. The CIA Addendum proposed mitigation measures that “*will avoid any unnecessary reduction in the network capacity so general traffic is not significantly affected*” and identified the forecast period of maximum traffic impact due to the construction traffic flows.
- 7.7.12 Access to vehicles for the construction of Phase 1A (North) are described in **Table 7.1** and are shown on **Figure 7.6** (extract from Appendix 8 of the Construction Method Statement which formed Annex D of the s.73 ES).

Table 7.1: Phase 1A (North) Construction Access Alterations

| Access to the north of the A406:   |
|--|
| <ul style="list-style-type: none"> <li>• Modified accesses to the Shopping Centre, including the A406 ingress/egress and the new junction off the A406 adjacent to the A41.</li> <li>• Access to the east of Fenwick car park will be modified and a retaining wall of the A41 will be constructed. Simultaneously, a new roundabout at the southern part of the Site will be constructed. The roundabouts will maintain traffic flows around the Shopping Centre and past the Fenwick car park to the north car parks.</li> <li>• The access road around the new John Lewis Partnership Store will be kept open for the duration of Phase 1.</li> <li>• To facilitate the construction of the underground car park beneath the John Lewis Partnership Store, Prince Charles Drive will be closed and access diverted to the south of Brent Cross East, adjacent to the A406.</li> </ul> |
| Access to the south of the A406:   |
| <ul style="list-style-type: none"> <li>• Construction traffic will access the Site of building 25 from the existing access to the retail outlet after the new route into the retail outlet has been constructed.</li> <li>• A haul road for construction vehicles and plant, materials and operatives will lead onto the plot of building 18.</li> <li>• Construction traffic will only be allowed on designated routes during certain times whilst construction of the Primary School (building 46) is ongoing.</li> </ul>  |

Note: Extract from Appendix 2.2 CIA

- 7.7.13 **Figure 7.6** illustrates the likely Phase 1 (North) access routes during construction as shown within the CIA Addendum. The access and egress routes are predominantly through the Western roundabout entering and existing from and to the A406, and the Eastern roundabout entering the Site from the A406 and exiting onto the A41 northbound. It should be noted that details of temporary roads, bridge structures and roundabouts for construction will form part of a separate Temporary Works RMA to be submitted to LBB for approval in due course.
- 7.7.14 The construction routes for Phase 1A (North) therefore remain valid as identified in the s.73 ES. The routing of construction-related trips to and from the Site would be controlled by the CTMP to appropriate routes only, to be agreed with the authorities.

### Construction effects on Pedestrians and Cycles

- 7.7.15 Maintaining connectivity of the Site throughout construction works for pedestrians, cyclists and public transport buses has been a primary consideration in developing the programme and delivery of the construction works.
- 7.7.16 During Phase 1A (North) some of the key pedestrian, cyclist and vehicular bridges will be replaced within the Development, therefore ensuring connectivity for these users is maintained during construction will be paramount.
- 7.7.17 The Templehof Bridge works will be carried out in stages with a temporary pedestrian and road bridge proposed for a period of the construction works. It is likely that the new Templehof Bridge will be constructed on Site in two halves, one on the northern side and one of the southern side of the A406. Pedestrian, cyclist and vehicular access will be maintained throughout. It should be noted that details of the temporary pedestrian and road bridge will form part of a future RMA and is therefore not considered in detail in this Report.
- 7.7.18 Alterations to the M1 / A406 Junction at Staples Corner will result in the need to realign the existing footbridges and as such replace with the newly proposed pedestrian and cyclist bridge B6. The CIA Addendum states that the works at Staples Corner will not commence until the new Templehof Bridge is established, therefore providing a north to south connection for pedestrians and cyclists over the A406 during the remainder of the construction period. A temporary bridge is likely to be required in the vicinity of this junction prior to the removal of the existing bridges and until the new bridge is established, the details of which will form part of a separate Temporary Works RMA.
- 7.7.19 Where any construction works restrict pedestrian or cyclist route access through closed sections of local roads, alternative route arrangements will be provided to allow a path around the site of works providing a segregated area to protect pedestrians and cyclists from equipment movement or operations when passing. Details of pedestrian routings during construction will form part of the CTMP.
- 7.7.20 As indicated in the CIA Addendum (**Appendix 2.2**) communications programmes are to be used to work with TfL and local resident groups to develop solutions as and when needed for any potential issues caused by the construction works throughout the Site. This would include steering groups for each of the primary user groups. Pre-RMA Planning Condition 1.18 has now been discharged in relation to the establishment of a Consultative Access Forum.
- 7.7.21 In line with Pre-RMA Condition 1.26 which has now been discharged, an Inclusive Access Strategy and Wayfinding Strategy have been prepared in consultation with the Consultative Access Forum.
- 7.7.22 The mitigation measures previously reported which include the establishment of communication programmes during construction works and access strategies, have now largely been produced and discharged as Pre-RMA Conditions of the 2014 Permission. As such, these measures are now considered inherent to the Development and are considered under this potential impacts section. The potential disruption to pedestrians and cyclists during the construction period of Phase 1A (North) would therefore be mitigated through the design of access strategies and communication forums to enable a formal group for the local residents to feedback to the Applicants on any construction related issues to enable a quick resolution. There would however remain some potential impacts during the construction programme of Phase 1A (North) which are considered further below.

- **Pedestrian and cycle delay** – delays to these road users could arise during construction from increases in HGV traffic flows and/or road closures (full or partial). Pedestrian and cycle access to Clitterhouse Playing Fields and the River Brent would also be disrupted during the planned improvement works to this area;
- **Pedestrian and cycle amenity** – amenity relates to the pleasantness of a journey and can be affected by increases in traffic as well as factors such as noise, dust, visual impacts. A number of roads would be subject to construction works during the Phase 1A (North) development period. Whilst appropriate facilities would be available and the CEMP would minimise impact such as noise and dust etc. as far as practicable, it is likely that pedestrians and cyclists would experience some amenity impacts during construction of Phase 1A (North);
- **Fear and Intimidation** – fear and intimidation are associated with increases in traffic movements, the impact of which is dependent upon the volume of traffic, its Heavy Vehicle composition, proximity to people and/or the lack of protection caused by such factors as narrow pavement widths. The interaction between construction traffic, pedestrians and cyclists will be addressed through the CTMP.
- **Accidents and Safety** – the potential impact of construction traffic upon pedestrians and cyclists will be dependent upon localised circumstances and factors, which may elevate or lessen risks of accidents, e.g. junction conflicts. The interaction between construction traffic, pedestrians and cyclists will be addressed through the CTMP.

7.7.23 Taking into account the measures which have already been committed to by the Applicant, including the CMTP, CEMP and also proposals for a CCC, the impacts of construction effects on pedestrians and cyclists are considered to be at worst, **minor adverse** when considered in the context of the Development as a whole. It is important to note that construction of Phase 1A (North) would not proceed independently and work would also be progressed on other Phases of the Development in parallel.

#### Construction effects on public transport (bus routes)

7.7.24 As reported within the CIA Addendum, the level of construction works proposed to infrastructure will result in disruption to existing bus routes and bus stops within the local area. A review was undertaken to identify the impacts likely to result from the programmed works. Section 7.0 of **Appendix 2.2** provides an indicative schedule of bus routes affected and possible mitigation measures. The list below summarises those key routes:

- Brent Cross Shopping Centre and Bus Station – the temporary bus station would be provided as part of Phase 1A (North) as detailed in Section 7.2.23 – 7.3.25 ;
- Mapledown School – temporary bus stops during Claremont Road works;
- Claremont Way – temporary bus stop during Claremont Road / Templehof Avenue Junction works;
- Etheridge Road – temporary bus stop to be established by the Western roundabout during construction;
- Prince Charles Drive – bus stop will close to allow construction works, commuters to use alternative stops nearby;
- Staples Corner – bus stop closed during A5 works, commuters to use alternative stops nearby;

- Claremont Road – temporary bus stop during Tiling Road works;
  - Brent Cross Tesco - temporary bus stop during Tiling Road works;
  - North Circular Road (A406) – temporary bus stops northbound.
- 7.7.25 With the temporary relocation of the bus station to the south west car park and the provision of additional passenger facilities to the west of the shopping centre at Plot 113, the local routing of services will change, as follows:
- Buses terminating at Brent Cross Bus Station will be required to travel to Plot 113 to drop off passengers before continuing to the bus station to drop off any remaining passengers and layover;
  - Buses starting at Brent Cross Bus Station will travel to Plot 113 to pick up passengers before continuing on the scheduled route; and
  - Buses serving as through routes will stop off at the bus station and then Plot 113 to pick-up and drop off passengers.
- 7.7.26 As well as generating additional movements on the western estate road, the provision of bus stop facilities at Plot 113, in order to maintain good accessibility to the shopping centre, will extend journey distances for each bus route, estimated that the change in routing could add up to an additional 80km per hour in bus mileage. TfL forecast the requirement for an additional bus per route, with the exception of route 232, in order to maintain existing bus journey time frequencies and reliability.
- 7.7.27 The distance for shoppers walking between the shopping centre and bus stop facilities will be approximately 225m. Once the department store to the west of the shopping centre is constructed and opened (assumed Q1 2019), this distance will reduce to circa 165m. Entrances to the south (Mall 2) and south west (Mall 1) of the Shopping Centre are likely to be closed at Q1 2017 and Q2 2016 respectively. Detailed information in respect of the Temporary Bus Station will be provided in the Temporary Bus Station Strategy (**Appendix 2.3**).
- 7.7.28 In consideration of the potential public transport disruption during the construction phase and the proposed temporary bus stops and bus route diversions, it is considered that the necessary measures are established to result in **negligible** impacts to local residents and visitors.
- 7.7.29 Construction of Phase 1A (North) would have no significant impacts on rail or other forms of public transport.

#### Construction effects on traffic flows, congestion and delays

- 7.7.30 **Figure 7.7** illustrates the estimated volumes of heavy good vehicles (HGVs) during the construction period of Phase 1 delivery for the Development, as taken from the CIA Addendum (**Appendix 7.4**). The estimated volumes show approximately 3,000 Heavy Goods Vehicles (HGVs) per quarter in the first year of construction (stated as 2016), building up to a maximum of 9,000 HGVs in quarter 3 of 2020, then decreasing back to 5,000 HGVs in quarter 1 2023 and dropping significantly to 500 HGVs in quarter 2 2023 when Phase 1 is due for completion. The CIA Addendum also reports predicted volumes of light good vehicles (LGVs) (**Figure 7.8**) commencing around 10,000 vehicles in 2016 up to a maximum of approximately 38,000 vehicles related to construction in quarter 3 2020 (peak construction for Phase 1).

- 7.7.31 The s.73 ES Chapter 7 reported on the construction traffic AM and PM peak hours across the whole Site and for all development phases together. As such, it was concluded that the predicted change of up to 2.61% on the road network would not be significant and therefore that *“the magnitude of change and actual number of additional vehicles is not anticipated to give rise to a significant transport or environmental impact at these or any other junction”*.
- 7.7.32 In light of the information contained within the CIA Addendum and Consolidated TA still remaining valid and applicable to this reserved matters application for Phase 1A (North), with no additional information on construction traffic or transport related impacts, the conclusions of the s.73 ES with regards to construction traffic is deemed to remain valid.
- 7.7.33 Further construction logistics design and planning will be undertaken prior to the start of construction works for Phase 1A (North) which will provide further information on the exact arrangements for transport and access during the construction period. The following pre-commencement Planning Conditions of the 2014 Permission will be submitted to LBB for approval prior to the start of construction (in 2016):
- Condition 12.1: Construction Transport Management Plan (Site Wide); and
  - Condition 12.2: Construction Worker Travel Plan.
- 7.7.34 In light of the HGV and LGV predicted volumes throughout the construction period it is noted that the impacts are variable over the programme with the highest volumes in 2020 when Phase 1 is completed, whilst other periods are significantly lower. The s.73 ES concluded that the magnitude of change, and the actual number of vehicles is not anticipated to give rise to a significant transport or environmental impact at the junctions assessed (M1/A406, A5/A406, and A41/A406) or any other junctions.

### Mitigation

- 7.7.35 No new or different mitigation measures over and above that identified in the s.73 ES, CIA Addendum and Consolidated TA have been identified as being necessary as part of the Phase 1A (North) RMAs or wider Development in relation to construction traffic. Pre-commencement Planning Conditions 12.1 Site-Wide CTMP and Condition 12.2 Construction Worker Travel Plan of the 2014 Permission will form the main mitigation measures for the construction period in relation to transport and are considered to remain valid and appropriate. No further mitigation measures are considered necessary.
- 7.7.36 As stated at Section 7.7.7, the construction traffic flows presented in the s.73 ES did not assume use of a CCC which could significantly reduce construction traffic to and from the Site. Use of a CCC therefore could potentially further reduce the significant of impacts associated with construction traffic impacts and associated impacts on pedestrian and cycle amenity. Further details of the selected CCC option and construction traffic would be provided as part of the CTMP.

### Residual Impacts

- 7.7.37 Following further consideration of the scale and period of the construction works, temporary bus station proposals and the assessment in regards to construction traffic and the short term nature of the disruption during the construction period along with conditioned transport plan measures, the residual impacts are deemed to remain as stated under Potential Impacts. Effective application of

the CTMP and Construction Worker Travel Plan, and potentially use of the CCC, could further improve construction traffic related impacts. These documents would be produced and discharged as required with LBB prior to commencement of works to ensure potential impacts are mitigated as far as practicable.

## Operation

### Potential Impacts

#### Background

7.7.38 The impacts of the Development on traffic and transport were set out in detail in the Consolidated TA and a summary was provided in the s.73 ES. The Consolidated TA provides the following useful commentary in relation to the impacts of the Development:

*“The development proposals and the expected number of new trips by people in this area of northwest London are substantial although this is a location alongside major rail and road corridors which are highly accessible. The infrastructure proposals capitalise on this opportunity with additional and improved public transport interchanges and new road junctions. In addition, the increase in trips resulting from a development of this magnitude and mix of land uses will promote changes in terms of the type of transport people choose to use. This is predicted to rebalance and mitigate the impact on the transport network as a whole. This approach to the preparation of an ITS [Integrated Transport Strategy] is described in Chapter 5 [of the Consolidated TA].*

*The proposed improvements to the existing highways are directly related to access into the development areas. These include substantial upgrading of:*

- *Staples Corner M1 Junction 1*
- *North Circular Road/Hendon Way*
- *Cricklewood Broadway/ Cricklewood Lane*
- *Cricklewood Lane/Claremont Road Junctions*

7.7.39 *There are also new junctions on the A41 (to the south of the A406/A41 Junction) and on the A5 (at the location of Oxgate Gardens) where a new bridge over the main line railway will provide a direct link into the heart of the development. These highway improvements will reduce delays and queuing that are forecast in this area for the year 2026. The detailed assessment is summarised in Chapter 6.*

7.7.40 *The scale of private sector investment in public transport and road improvements is a unique element of the transport proposals for this scheme. In addition to improvements to the existing railway station at Cricklewood (which will be retained), a new railway station is to be constructed to serve the development. The new railway station will accommodate the upgraded Thameslink services, with longer trains, which cannot presently stop at the existing station. There will be a much improved new bus station, with additional buses and enhanced quality of service. This will cater for a very high proportion of all people coming to this development. The resulting Public Transport Accessibility Levels (PTALS) for all parts of the site will consequently be extremely good at PTAL level 5 or better. This is comparable with Central London, and this represents a very significant improvement over the current conditions. Chapter 7 describes the proposals in detail. Extensive*

*facilities are specifically designed to provide safe and convenient routes for pedestrians and cyclists, both within the site and linked to the existing networks in the surrounding communities. These are described in Chapter 8.”*

- 7.7.41 Integral to the Development is therefore the creation of new strategic accesses, a new internal road layout, infrastructure and associated facilities together with any required temporary works or structures and associated utilities / services required by the Development. The Development also includes for the provision of the Living Bridge over the A406 North Circular Road to improve pedestrian and cycle connectivity across the Site and provide better integration between the northern and southern components of the Development. These elements form a critical part of the overall Development to ensure it provides appropriate and improved transport infrastructure and facilities.
- 7.7.42 The development of the Scheme has included the iterative design of the transport and infrastructure proposals in line with the forecast movement of vehicles and people through the area of influence. Traffic modelling (both the BXC-TM and BXC-DDM) has been used to ensure that the Development accommodates the forecast traffic volumes. Measures to mitigate potential impacts on the Development on traffic and transport have therefore been incorporated within the highway design of Phase 1A (North) and forms an inherent part of the wider ITS.
- 7.7.43 Most major infrastructure elements within the Development will be completed within Phase 1A (North) ahead of the delivery of the development quanta for Phase 1. Detailed highway layout plans showing the proposed highway infrastructure for Phase 1AN are contained within **Appendix 2.1**. The areas of highway and junctions which will be completed during Phase 1A (North) are as listed at 7.3.8 and 7.3.9. The items listed at 7.3.8 however already have full approval and therefore do not form part of the Phase 1A (North) RMA. A description of the works to each highway/junction is provided in Section 4 of the RTMR.

#### Highway Impact and Junction Assessment

- 7.7.44 The Consolidated TA provided detailed analysis of the impact of the Development on the highway and junction capacity. This analysis presented in the s.73 Application was based on the outputs of the BXC-TM. Since the BXC-TM has been prepared, further modelling has been undertaken using the BXC-DDM for the purposes of informing detailed design. Further details of the background to the BXC-TM and BXC-DDM are provided in **Section 7.4**.
- 7.7.45 The Junction Assessment Report (**Appendix 7.5**) provides traffic modelling evidence to support the proposed highway layout at the following junctions that form part of the Phase 1A (North). The Junction Assessment Report provides a description of the changes to the s.73 scheme that have been necessary to more efficiently manage the traffic demand as forecast by BXC-DDM which are summarised below. Capacity assessments from initial BXC - DDM forecast assignments suggested that minor modifications were required to the s.73 proposals for certain junctions.
- 7.7.46 The design modifications in the Phase 1A (North) RMA submission (compared to the illustrative scheme submitted with the s.73 Application) required as a result of the BXC – DDM are minor modifications to the designs identified within the s.73 Application and remain within the approved Parameter Plans (except to the extent that any minor modifications are made to parameters in accompanying submissions under the conditions of the s.73 Permission).

7.7.47 The modifications incorporated to the junctions previously submitted in outline as a result of the BXC-DDM and detailed design are summarised in **Table 7.2**. It is important to note that these are designed-in mitigation and therefore form part of the Phase 1A (North) RMA.

Table 7.2: Modifications to Junctions (Inherent Mitigation) incorporated into the Phase 1A (North) RMAs

| Junction  | Modifications to Junctions defined in s.73 Application   |
|---|--|
| Eastern Roundabout                                  | <ul style="list-style-type: none"> <li>The western arm of Prince Charles Drive has been signalised together with its opposing circulatory arm. All other arms on the roundabout remain signalised.</li> <li>An additional circulatory arm has been provided to facilitate movement from the eastern arm of Prince Charles Drive to the western arm.</li> <li>The bus station egress onto Prince Charles Drive has been signalised.</li> </ul>  |
| Western Roundabout                                  | <ul style="list-style-type: none"> <li>Amendment from a standard non-signalised roundabout to fully signalised ‘hamburger’ junction with centralised cut through.</li> <li>Key changes include an addition road to cut through the middle of the roundabout from Tempelhof Avenue to the western side of the roundabout, all arms to be signalised, additional circulatory capacity from 2 to 3 lanes, additional capacity from Stadium Road from one flared approach to three full lanes and a segregated left turn only lane extending from Prince Charles Drive to Stadium Road.</li> </ul> |
| A5 Edgware Road/Humber Road/Geron Way               | <ul style="list-style-type: none"> <li>Introduction of a controlled pedestrian crossing on the southern arm of A5.</li> <li>Advanced cycle stop lines on all arms.</li> </ul>  |
| A5 Edgware Road/Dollis Hill Lane/Residential Access | <ul style="list-style-type: none"> <li>Advanced cycle stop lines on all arms.</li> </ul>   |
| Claremont Road/Orchard Lane/Claremont Park Road     | <ul style="list-style-type: none"> <li>Orchard Road alignment has been revised to align more with its opposite arm.</li> <li>Pedestrian islands and pedestrian crossing points have been rationalised to reduce crossing lengths.</li> <li>Stop lines have been revised to make the junction more ‘compact’ reducing intergreens and improving junction capacity.</li> </ul>   |
| Spine Road North/High Street South                  | <ul style="list-style-type: none"> <li>Pedestrian crossing staggers on Spine Road.</li> <li>Internal stop line added on southbound arm of Spine Road.</li> </ul>   |
| Tiling Road Junction Cluster                        | <ul style="list-style-type: none"> <li>Controlled crossing of Tiling Road at the Claremont Road junction has been removed following conclusion of the Area Wide Walking and Cycling Study.</li> </ul>  |

| Junction | Modifications to Junctions defined in s.73 Application   |
|----------|--|
|          | <ul style="list-style-type: none"> <li>• Rationalised island configuration at Tempelhof Link Road/Claremont Road.</li> <li>• The left turn into the Tesco access arm is signal controlled, rather than give-way.</li> <li>• A controlled pedestrian crossing across the Tesco access arm is proposed, in line with the pedestrian network outlined in the Area Wide Walking and Cycling Study.</li> <li>• The left turn into the Whitefield Avenue is signal controlled, rather than give-way.</li> <li>• A controlled pedestrian crossing across the Whitefield Avenue is proposed, in line with the pedestrian network outlined in the Area Wide Walking and Cycling Study.</li> </ul> |

- 7.7.48 Full details of the modifications, together with the full junction modelling assessments, results and detailed drawings can be found in the Junction Assessment Report (**Appendix 7.5**). The Report also provides commentary of the performance of each junction with the modifications in place.
- 7.7.49 The SATURN results of the BXC - DDM show that the area-wide and local conditions are generally similar in the Do Minimum and Do Something scenarios, but with the improvements to travel on strategic accesses such as the M1, the Development infrastructure accommodates the additional traffic generated by the Development. These improvements are highlighted when the Do Something trips are assigned to the Do Minimum networks, showing very poor local conditions. Full details of the forecast traffic volumes for the operational years of the Development can be found in the Forecasting Report (**Appendix 7.4**).
- 7.7.50 The BXC-DDM modelling shows that the forecast local congestion predicted in the 2021 and 2031 Do Minimum scenarios, particularly the PM peak and Saturday, is consistent with the findings of the BXC-TM.
- 7.7.51 It is anticipated that the infrastructure improvements proposed as part of the Phase 1A (North) development will have a **negligible** impact upon traveller view from the road and a **moderate beneficial** impact upon the factors determining levels of driver stress by providing a more legible route, consistent journey times and reduced fear of potential accidents.

#### Public Transport

- 7.7.52 The Phase 1A (North) RMAs include a number of public transport improvements which will be provided as part of the new infrastructure works, full details of which can be found in the Phase 1A (North) RMTR (Table 5.1 of **Appendix 7.1**). These improvements include a number of replacement bus stops, new bus stops (four) and a new bus stand to the north of Prince Charles Drive. New stops are generally located in places that are no more than 400m from either existing or other proposed stops at locations where there is likely to be a need. The location of the bus stops within the Development is shown in **Appendix 7.1**.

- 7.7.53 New bus lanes would be delivered as part of Phase 1A (North) on the western side of the new Tempelhof Avenue, the replacement Tempelhof Bridge as well as the eastern side of the Tempelhof Bridge.
- 7.7.54 The existing Brent Cross Bus Station will be relocated to a temporary location (as discussed under Construction Impacts) for a period of approximately four years until the new bus station (Transport Interchange T2) is complete. The temporary effects on bus routes have been assessed under Construction Impacts and in **Chapter 20: Intermediate Years Assessment** rather than under Operation as they do not relate to the completed Development, since the new bus station would be in use.
- 7.7.55 Phase 1A (North) will deliver key infrastructure improvements in addition to the temporary bus station in preparation for the improved routing of bus services through the Site:
- Dedicated bus only lanes across Tempelhof Bridge along the new Tempelhof Avenue and High Street;
  - New road links in Town Centre South key infrastructure improvements in addition to the temporary bus station in preparation for the improved routing of bus services through the Site;
  - Dedicated bus only lanes across Tempelhof Bridge along the new Tempelhof Avenue and High Street;
  - New road links in Town Centre South;
  - Improved underpass on Tilling Road; and
  - Improved underpass on Tilling Road.
- 7.7.56 The Applicant will not alter bus services directly, although a number of bus services will be re-routed, extended and altered as a result of the infrastructure. The impact of the changes on the bus network is identified in the Transport Report as slightly more significant in the local area with *“Several corridors in the vicinity of Brent Cross Cricklewood are now forecast to have significantly lower patronage than under the previous development assumptions.”*
- 7.7.57 Phase 1A (North) would not result in any direct impacts to rail or London Underground infrastructure and therefore these have not been considered further in this Chapter. In any event, the s.73 scheme was found to have a negligible effect on the predicted flows on London Underground and National Rail networks. This is principally because these modes are high capacity, and the changes in demand between the two scenarios are relatively small.
- 7.7.58 Phase 1A (North) will provide temporary new infrastructure for bus passengers and services during the construction phase. There will be some alterations to service routing resulting from the infrastructure changes although mitigation will maintain existing bus journey time frequencies and reliability. It is anticipated that the impact resulting from the Development, taking into account the details of Phase 1A (North) would be negligible.

#### Taxis and Coaches

- 7.7.59 A new taxi rank will be provided as part of Phase 1A (North) around the northwest corner of the Development to the north of the new western roundabout on Prince Charles Drive (adjacent to the John Lewis department store). The taxi rank will be able to accommodate up to 15 taxis. Further taxi provision is also proposed within the layby to the north of the new eastern roundabout on Prince

Charles Drive where up to seven taxis will be able to be accommodated. The proposed taxi provision represents an increase over the existing provision where nine taxis can currently be accommodated within the formal taxi pick-up / drop-off area on Prince Charles Drive and will also be located in close proximity to the shopping centre (coming forwards as part of sub-phase 1BN). It is therefore considered that the proposed taxi provision offers an improvement over the existing situation and will represent a minor beneficial impact.

- 7.7.60 Coach stops J1 and J2, located in the vicinity of the A406/A41 junction, will be relocated. Coach stop J1 will be relocated into an existing lay-by further down the slip-road which joins the westbound carriageway of the A406 whilst J2 will be relocated on to Haley Road to the east of the A41. The proposed coach stop locations enable existing pedestrian facilities to be maintained and provide safe walking routes to the site and surrounding residential areas and are therefore considered to provide a **Negligible** impact.

#### Pedestrian and Cyclists

- 7.7.61 In line with the 2014 permission, extensive facilities have been designed into Phase 1A (North) to provide safe and convenient routes for pedestrian and cyclists. Further detail on the routes and cycle parking provision is provided within the Pedestrian and Cycling Strategy for Phase 1A (North) (**Appendix 7.6**).
- 7.7.62 The proposed Phase 1A (North) pedestrian and cycle strategy for those elements previously submitted in outline (i.e. excluding the Gateway Junctions which already have detailed permission) is shown on **Figure 7.2** and a summary is provided in below.
- 7.7.63 **Living Bridge** - A new pedestrian and cycle bridge over the A406 (Bridge B7). This bridge will form a key north/south link across the A406 between the Brent Cross Shopping Centre/new bus station and areas to the south including Claremont Avenue and Clitterhouse playing fields. Access to the Living Bridge from Claremont Avenue will be via a wide 16m approach which will connect with the segregated footway/cycleway provided alongside Claremont Avenue. Access to the Living Bridge from the north (bus station) will be via steps/lifts/escalators.
- 7.7.64 **A406 Tempelhof Bridge** - A segregated footway/cycleway will be provided alongside the northbound carriageway of New Tempelhof Avenue linking with a segregated facility and toucan crossing at Claremont Avenue. To the north of the A406 the segregated footway/cycleway will link with a shared footway/cycleway facility connecting with the shopping centre car park access road and the shopping centre cycle parking provision. A toucan crossing will be provided across New Tempelhof Avenue in order to provide access to cycle parking located at the service road and the continued pedestrian/cycle route towards the Brent Cross Shopping Centre car park access road. A pedestrian only footway will be provided alongside the southbound carriageway linking with Tempelhof Link Road and Market Square and a segregated footway/cycleway alongside the northbound carriageway.
- 7.7.65 **River Brent Corridor** - A shared footway/cycleway facility (5m wide) will be provided alongside the River Brent and will form a key east/west traffic-free connection linking the A41/A406 junction and the western roundabout. A pedestrian only link will be provided between the western roundabout and the M1/MML underpass; two river crossings will be provided along this pedestrian-only section.
- 7.7.66 **Parks** - Pedestrian and cycle links will be provided through Claremont Park, Clitterhouse Playing Fields and Sturgess Park.

- 7.7.67 **A406 Crossings** - Within Phase 1A (North) there will be a total of six A406 crossings providing vital north/south connections as shown on **Figure 2.3**.
- 7.7.68 A total of six public cycle parking locations have been identified within Phase 1A (North). These are shown within the planning drawings for each open space and Plots 53 and 54 listed in **Chapter 2**. Cycle parking will be provided for the residential plots (Plots 53 and 54) and for Clitterhouse Playing Fields as well as on the Living Bridge, Claremont Park and the Central Brent Riverside Park. This provision represents a significant improvement in the currently available parking facilities for cycles.
- 7.7.69 The provision of safe, convenient cycle and pedestrian routes, new crossings together with cycle parking provision and improvements to existing bridges/underpasses (lighting/painting) will improve connectivity, safety and amenity of the Site for pedestrians and cyclists, resulting in a **minor to moderate beneficial** impact to pedestrians and cyclists.
- 7.7.70 The pedestrian and cycle infrastructure proposed within the Phase 1A (North) development will increase the opportunities for access to the Site by these modes and is anticipated will have a **moderately beneficial** impact upon journey length for pedestrian and cycle trips. Additionally the proposals are anticipated to provide a **moderately beneficial** relief from existing community severance and improvement in the amenity of pedestrian and cycle routes serving the Site.
- 7.7.71 No new or different impacts are predicted from the Development with the Phase 1A (North) RMA submission.

#### Car Parking

- 7.7.72 The Phase 1A (North) proposals include car parking for residential Plots 53 and 54 and for Clitterhouse Playing Fields. It should be noted that there will be no permanent parking associated with the other Phase 1A (North) infrastructure works. In addition, there will be no car parking provided for Claremont Park or the Central Brent Riverside Park.
- 7.7.73 The profile and level of residential car parking provision has been agreed in the 2008 Permission and again in the s.73 Approval and these details form part of the S106 Agreement.
- 7.7.74 Further details on the parking proposals for Phase 1A (North) proposals are contained within a Car Parking Management Strategy: Phase 1AN which is summarised in the RTMR.

#### Servicing and Delivery

- 7.7.75 Details on the servicing and delivery aspects of Phase 1A (North) are contained within the Servicing and Delivery Strategy: Sub-phase 1AN which has been produced to meet Planning Condition 1.22. This strategy has been reviewed and would not give rise to any significant impacts on traffic or other road users in respect of the Phase 1A (North) RMAs.

#### Conclusion

- 7.7.76 Based on the above information, it is deemed that all significant environmental impacts in relation to operational traffic as identified in the s.73 ES and BXC05 remain valid, taking into account the detailed design of Phase 1A (North).

## Mitigation

- 7.7.77 The proposed delivery of infrastructure improvements within Phase 1A (North) will ensure that most major infrastructure elements within the Development are completed ahead of the delivery of the development quanta for Phase 1. This is in line with the inherent mitigation built into the detailed design of the wider Scheme, providing additional capacity on the transport network in the area of the Development prior to the commencement of any major works.
- 7.7.78 As a hypothetical comparison, the BXC - DDM Do Minimum modelling shows that the prevailing conditions without the highway infrastructure, would already be poor on many of the strategic roads in the vicinity of the Development. The infrastructure that would be delivered as part of Phase 1A (North) therefore has been designed to accommodate the additional traffic generated by the Development and mitigate the impacts of the additional traffic on the network surrounding the Site. In some parts of the network this results in an overall improvement in the operation of the network.
- 7.7.79 No further mitigation measures are required over and above those which are now inherent in the detailed design for the Phase 1A (North) RMAs and those previously identified in the s.73 Approval.
- 7.7.80 The conditions of the planning permission require the monitoring of the transport network on a regular basis. Further details are provided in the Monitoring Strategy report (47065005-TP-RPT-040).

## Residual Impacts

The traffic and transport demands of the Development will be accommodated on the highway, public transport, pedestrian and cycle networks through the provision of appropriate new junction and access arrangements, many of which will be delivered as part of Phase 1A (North). Table 22.1 of the s.73 ES identified a minor adverse residual impact (i.e. the likely impact of the development, taking account of proposed mitigation measures) associated with increased traffic, which will include some congestion on the highway network.

- 7.7.81 This impact is considered to remain valid based on the findings of the BXC – DDM modelling, taking into account the Development with the detailed design of Phase 1A (North). Notwithstanding, the mitigation inherent within the Phase 1A (North) RMAs will also deliver significant improvements to facilities for pedestrians and cyclists, including dedicated links, safe crossing locations and increased accessibility to public transport services / facilities, thereby reinforcing the potential for a shift to more sustainable travel modes.

## Summary

- 7.7.82 No new or different potential impacts, mitigation or residual impacts arising from the Development with the details for Phase 1A (North) in place have been identified in respect of Traffic and Transport, and all of these remain as identified at the outline stage within the Consolidated TA and s.73 ES.

## References

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<sup>i</sup> Transport for London (November 2013), Travel Planning Guidance for New Development in London.