



Brent Cross Cricklewood

Area Wide Walking and
Cycling Study

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Revision 3

Prepared for:
Brent Cross Cricklewood
Development Partners

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KINGDOM &
IRELAND



Area Wide Walking and Cycling Study

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1 INTRODUCTION

1.1 Background to the Study

Planning Permission Ref No. C/17559/08 for the comprehensive redevelopment of the Brent Cross Cricklewood ("BXC") Regeneration Area was granted in October 2010 (the "2010 Permission"). A Section 73 (S73) planning permission (2014 Permission) Ref No. F/04687/13 to develop land without complying with conditions attached to permission Ref No. C/17559/08 was granted by London Borough of Barnet (LBB) on 23-July-2014.

LBB has imposed a series of controls through the planning conditions attached to the 2014 Permission and the obligations within the Section 106 (S106) Agreement.

The purpose of this report is to discharge planning condition 1.20 (of the 2014 Permission) which states the following:

'Not to submit the first Reserved Matters Application for any Phase or Sub-Phase of the Development without first submitting for the LPA's approval to the Area Wide Walking and Cycling Study and thereafter all relevant Reserved Matters Applications shall include details to ensure that the walking and cycling routes and facilities are provided and integrated with the walking and cycling network within and around the Site and around the relevant Phase or Sub-Phase in accordance with the approved Walking and Cycling Study and the Pedestrian and Cycle Strategy.'

The reason provided for the condition is as follows:

'To ensure that the Development (and each and every Phase or Sub-Phase of it) is fully accessible by walkers and cyclists and that it is fully integrated with the surrounding pedestrian and cycle network in the interests of encouraging sustainable non-car modes of transport'.

In addition to the above condition, the following Schedules of the S106 agreement relate to the Area Wide Walking and Cycling (AWWC) Study:

Schedule 1 (page 35) provides a definition for the AWWC Study, which is as follows: *"Area Wide Walking and Cycling Study" means a walking and cycling study to be carried out by and at the cost of the Developers in accordance with the principles and parameters set out in the Matrix and Transport Reports Schedule to be submitted and approved in accordance with Condition 1.20 of the Permission. This should include provisions to ensure that a good network of walking and cycling routes is maintained during the construction phase.'*

Schedule 1 (page 43) provides a definition for the CERS Study, which is as follows: *"CERS Study" means a study using the Transport Research Laboratory Cycle Environment Review System or other comparable method acceptable to TfL and the LPA to assess the level of service and quality provided for cyclists across a range of cycle environments and routes reasonably related to the Development within the Site and making connections to surrounding networks having regard to (i) the principles and parameters set out in the Matrix and Transport Report Schedule for the Area Wide Walking and Cycling Study and (ii) the London Cycle Design Standards Mayor of London's Cycle Superhighways programme and the requirements of TfL Streetscape Guidance in relation to the Transport for London Road Network and/or any subsequent revisions or updates to such standards or guidelines adopted by TfL'*

Schedule 1 (page 82) provides a definition for the PERS Study, as follows: *"PERS Study" means a study using the Transport Research Laboratory Pedestrian Environment Review System to assess the level of service and quality provided for pedestrians across a range of pedestrian environments reasonably related to the Development within the Site and making*

connections to surrounding networks having regard to (i) the principles and parameters set out in the Matrix and Transport Report Schedule for the Area Wide Walking and Cycling Study (ii) the guidance "Improving Walkability: Good practice guidance on improving pedestrian conditions as part of development opportunities" (September 2005) and the requirements of TfL Streetscape Guidance in relation to the Transport for London Road Network and/or any subsequent revisions or updates to such guidelines adopted by TfL and (iii) in accordance with the scope of the proposal prepared by the Transport Research Laboratory and annexed to this Deed as Schedule 221'

Schedule 3 (1.3.10) states: 'The Transport Contingency Fund, which is intended to provide for transport measures and other additional transport works or costs (and associated environmental improvements) which are not expressly provided for in other identified obligations and express provisions (including those relating to Supplementary Transport Measures) contained in this Agreement and the further transport measures payable out of the Transport Contingency Fund under this paragraph 1.3.10 may include (inter alia):

- (c) (save to the extent that these are covered by the Developers' obligations to carry out or fund specific works or mitigation measures including those required under paragraph 12 of this Schedule) carrying out additional works **fairly and reasonably related in scale and kind to the Development** and identified as a result of the Area Wide Walking and Cycling Study'

Schedule 3 (section 12.1) 'Pedestrian and Cycle Links' states the following: 'With effect from the date when the Permission is granted (if and to the extent that they shall intend or decide to make an application for any Reserved Matters Approval and/or any Other Matters Approval pursuant to the Permission) the Developers (the Brent Cross Partners in relation to the Northern Development and CRL in relation to the Southern Development) shall on a Phase by Phase basis:

12.1.1 arrange for PERS and CERS Studies to be undertaken prior to submission of each Phase Transport Report and to submit the results of such studies to the LPA and TfL as part of the Phased Transport Report for approval; and

12.1.2 (subject to the Commencement of the Development or the Northern Development or the Southern Development in any Phase) provide (or fund outside the Consolidated Transport Fund) the reasonable and proper costs of construction and delivery of:

- (a) the new and/or improved pedestrian and cycle links within the Site and making connections to surrounding networks as identified by the PERS and CERS Studies and approved by the LPA (and TfL where appropriate in accordance with paragraph 3 of this Schedule 3) or on appeal in accordance with the details and programme approved under Conditions 1.20 and 2.8 of the Permission and shall not Occupy any part of the Development beyond the quanta specified in the approved programme before the links specified in that trigger have been provided unless and to the extent that either (a) the LPA (and where appropriate TfL) shall agree otherwise (subject to Clause 4.7) or (b) there is a Force Majeure resulting in delay; and
- (b) any Supplementary Transport Measures identified in the Area Wide Walking and Cycling Study.'

Schedule 15 (6.1.5) states the following: 'An Area -Wide Walking and Cycling Study will be undertaken by the Development Partners prior to implementation of works. This will provide the baseline conditions for cyclists and pedestrians and will inform the necessary hard and soft measures to be provided across the site and at linkages to the wider surrounding adjacent networks.'

Schedule 15 (Appendix B.3) states the following: ‘*Surveys of the Pedestrian and Cyclist networks, including PERS audits of pedestrian facilities on and around the boundaries of the site where the proposed networks integrate and connect with the wider surrounding adjacent networks.*’

Schedule 17 (1.2) states: ‘*a means of ensuring that full account is taken of transport issues and a comprehensive pedestrian and cycle network is provided within the site and connecting to adjacent areas as the development progresses.*’

Schedule 17(4.12) states the following: ‘*The Area Wide Walking and Cycling Study will examine pedestrian and cycle routes in accordance with the following scope:*

- examine pedestrian routes connecting the site with key destinations (i.e. Cricklewood town centre, Brent Cross and Hendon Central Underground stations and Hendon Thameslink) and local residential area (i.e. Dollis Hill, Cricklewood, Childs Hill, Golders Green, Hendon and West Hendon) to the BXC site;
- examine cycle routes connecting the site with key destinations, nearby existing local or strategic cycle routes (i.e. LCN routes and the A5) and local residential areas;
- the study would need to be conducted in close liaison with the TAG and consult local cycle groups and other key stakeholders;
- the study area will be defined in agreement with LBB and TfL in relation to key destinations;
- the study is expected to deliver a programme of potential schemes for improvements to pedestrian and cycle facilities adjacent to or beyond the site boundary, providing improved access to and/ or from the BXC site.

Any necessary supplementary mitigation will be funded by the Development Partners, with other costs funded by the Consolidated Transport Fund.

1.2 Area Wide Walking and Cycling (AWWC) Study

1.2.1 Scoping

A scoping exercise was carried out with TfL and LBB to establish the requirements of the AWWC study and the specific outputs required following its completion. A scoping report was submitted and approved by TfL and LBB in August 2013. The scoping document is held in **Appendix A**.

1.2.2 AWWC Study Purpose and Objectives

The purpose of this report is to discharge planning condition 1.20 and to take into account the requirements raised in the schedules outlined above.

Therefore the objectives of the AWWC Study are to:

- define the study area in agreement with LBB and TfL in relation to key destinations
- examine specific pedestrian and cycle routes connecting the site with key destinations, transport hubs and local residential areas (i.e. Cricklewood town centre, Brent Cross and Hendon Central Underground stations and Hendon Thameslink) to identify shortfalls in provision and areas for improvement on these routes
- identify a set of identified improvements which could be provided along the above routes

- identify for delivery a programme of potential schemes, to be funded by the BXC development partners (BXCDP) for improvements to pedestrian and cycle facilities adjacent to or beyond the site boundary, providing improved access to and/ or from the BXC site. The potential schemes are to be ***‘fairly and reasonably related in scale and kind to the Development’*** and will *‘ensure that the Development is fully accessible by walkers and cyclists and that it is fully integrated with the surrounding pedestrian and cycle network in the interests of encouraging sustainable non-car modes of transport.’*

In addition, this study has provided a baseline framework for the local boroughs and TfL to advise any future improvements outside of the scope of the BXC development. The measures that are to be funded by the Development will be discussed within the Transport Advisory Group (TAG) and recommendations made to the Transport Strategy Group (TSG) for expenditure of the Consolidated Transport Fund (CTF).

1.3 Structure of the report

This report presents the findings of the Area Wide Walking and Cycling (AWWC) Study for the Brent Cross Cricklewood Redevelopment. The report includes the following:

- Section 1 contains the introduction, background and scope of the study;
- Section 2 outlines the policy considerations for walking and cycling within London;
- Section 3 presents the strategy employed as part of the AWWC study including the identification of key routes as well as the usage of quality assessment and auditing tools for their review;
- Section 4 refers to the ‘PERS and CERS Findings Report’ which presents the methodology used for the PERS and CERS audits along with the key results/findings and full audit outputs
- Section 5 presents potential walking and cycling environment improvement measures that could be implemented within the wider Brent Cross area
- Section 6 presents proposed walking and cycling environment improvement measures which will be provided to ensure the development will be integrated with the surrounding networks
- Section 7 presents the order of prioritisation for the route improvement measures
- Section 8 provides details with regards to the consultation findings for the AWWC Study
- Section 9 provides a summary of the Area Wide Walking and Cycling Study.

2 POLICY DOCUMENTS REVIEW

In this section the relevant planning documents are reviewed below to provide an easy to use reference document.

A number of policy documents have been identified which directly address the provision, design, availability and quality of pedestrian and cycling infrastructure for new developments and existing urban areas.

Policy relevant to the BXC proposals and the AWWC study is held predominantly at the regional level and contains guidance on optimum provision and design of pedestrian and cycling facilities across London. It also contains general guiding principles for the implementation of new facilities and outlines wider transport policy aims and objectives.

A review of these policies has been undertaken in the sections below.

2.1 Policy Documents and Guidance

Policy documents and guidance reviewed as part of this study include the following:

- The Mayors Transport Strategy (May 2010);
- The Mayor's Vision for Cycling in London (March 2013);
- TfL's Walking Good Practice (April 2012);
- Legible London;
- Pedestrian Environment Reviews System Fact Sheet;
- Pedestrian Comfort Level Guidance (2010);
- Delivering the Benefits of Cycling in Outer London (February 2010);
- London Cycling Design Standards (2005); and
- London Cycling Design Standards (Draft for Consultation, June 2014)

2.1.1 *The Mayor's Transport Strategy, May 2010*

The Mayor's Transport Strategy sets the policy framework for transport in London. Its integrated policies and proposals have a broad horizon of the next ten years, and more for major projects, covering all means of transport and the management of the Capital's road system. It provides the context for the more detailed plans of the various implementation agencies particularly TfL, the London Boroughs and the Strategic Rail Authority (SRA) (now DfT) and sets the priorities that these plans need to address.

The strategy's objectives, policies and proposals are integrated with The London Plan so that London's transport and development are planned in harmony. The strategy is developed in response to the same vision as articulated in The London Plan, and has six overarching goals which will contribute to making London:

- Support economic development and population growth
- Enhance the quality of life for all Londoners;
- Improve the safety and security of all Londoners;
- Improve transport opportunities for all Londoners;
- Reduce transport's contribution to climate change and improve its resilience; and
- Support delivery of the London 2012 Olympic and Paralympic Games and its legacy.

These goals match the objectives set out for the London Plan. The strategy identifies a number of key priorities and challenges for the transport network, aimed at meeting the overarching objectives.

The Mayors Transport Strategy also outlines a number of transport policies, which are directly relevant to walking and cycling. These are set out below.

Policy 1 - Develop London's transport system in order to accommodate sustainable population and employment growth.

Policy 3 - Improve public transport accessibility and conditions for cycling and walking in areas of lower PTAL, where there is an identified need for improving accessibility; and to improve access to economic and social opportunities and services for all Londoners.

Policy 5 - Ensure efficient and effective access for people and goods within central London through providing improved central London connectivity and appropriate capacity. This will include improving access to major public transport interchanges for pedestrians, cyclists and by public transport.

Policy 8 - Support a range of transport improvements within metropolitan town centres for people and freight that help improve connectivity and promote the vitality and viability of town centres, and that provide enhanced travel facilities for pedestrians and cyclists.

Policy 9 - Use the local and strategic development control processes to seek to ensure that (amongst other things):

- All high trip generating developments are located in areas of high public transport accessibility, connectivity and capacity (either currently or where new transport schemes are committed);
- The design and layout of development sites maximise access on foot, cycle and to public transport facilities, for example, via safe walking and cycling routes and provision of secure cycle parking;

Policy 11 - Reduce the need to travel, encourage the use of more sustainable, less congesting modes of transport (public transport, cycling, walking and the Blue Ribbon Network), set appropriate parking standards, and through investment in infrastructure, service improvements, promotion of smarter travel initiatives and further demand management measures as appropriate, aim to increase public transport, walking and cycling mode share.

Policy 14 - Improve transport's contribution to the built and natural environment.

Policy 15 - Reduce emissions of air pollutants from transport.

Policy 16 - Reduce noise impacts from transport.

Policy 17 - Promote healthy travel options such as walking and cycling.

A number of proposals have additionally been put forward within the document. Those directly relevant to walking and cycling are set out below.

Proposal 51 - Provide support, including sharing best practice, to enable and empower employers, schools, community groups, other organisations and individuals to deliver the improvements necessary to create a cycling revolution in London.

Proposal 53 - The Mayor, through TfL, will work with the DfT, London boroughs and stakeholders to raise the profile of cycling, using information and behavioural change measures, including smarter travel initiatives and major events.

Proposal 54 - Deliver improvements to cycling infrastructure and training to support the cycling revolution, including:

- The launch of the central London Cycle Hire scheme in 2010;
- Twelve Cycle Superhighways will be developed for commuters and others to cycle to central London, improving the capacity of the radial network;
- Enhanced cycle links to the Olympic Park by 2012, and the development of a wider network of Greenways across London;
- Further phases of the Cycle Hire scheme introduced in Inner and Outer London subject to sufficient demand and feasibility;
- Increased provision of secure bicycle parking facilities, particularly at stations, workplaces, schools, retail and leisure sites;
- Improving permeability for cycling by further integrating the road network and open spaces;
- Delivering road enhancements to make cycling easier and safer, including managing car access to residential areas, through physical or design measures, to create pleasant and safer cycling environments; and
- Offering cycle training for people of all ages.

Proposal 55 - Encourage changes to be made to the Highway Code and road traffic regulations, where necessary, to make cycling more convenient and to encourage a culture of mutual respect between all road users.

Proposal 57 - Encourage cycling by supporting development that:

- Provides cycle parking to an appropriate standard;
- Integrates the needs of cyclists into the design; and
- Promotes the co-location of key trip attractors to make cycling a more viable and attractive travel option
- Provides cycle hire docking stations dependent on sufficient demand and feasibility studies.

Proposal 58 - Review cycle parking standards and aim to implement 'best-practice' levels of cycle parking provision at any new station or as part of any comprehensive station redevelopment works. Additional cycle parking provision will also be provided at other stations to meet demand, wherever possible.

Proposal 59 - Bring about a step change in the walking experience in London to make walking count.

Proposal 60 - Improve the walking experience by enhancing the urban realm and taking focused action to ensure safe, comfortable and attractive walking conditions, including:

- Development of the 'key walking route' approach, to encourage walking and improve corridors between local destinations where people want to travel, encapsulating squares and open spaces where appropriate (for example, London parks);
- Providing direct, convenient pedestrian access (for example, with surface crossings) where appropriate;
- Street audits to identify pedestrian needs and guidance (such as pedestrian comfort levels);

- Delivery of the seven Strategic Walk Network routes, separate from, but alongside the development of, Greenways;
- Training for those involved in the design and delivery of schemes that impact walking conditions;
- Enhancing pavement space for pedestrians and removing guardrails and other obstacles;
- Seeking to manage car access to residential areas, through physical or design measures, to create pleasant and safer walking environments;
- Tackling the fear of crime and feeling unsafe on the streets;
- Supporting major projects such as high street revitalisation through good quality public realm designed to support regeneration of small businesses and encourage local shopping and activity;
- Improving access, safety and security between the station and surrounding areas for pedestrians (and cyclists) to encourage active and smarter travel;
- Encouraging the extension of a network of linked green spaces; and
- Supporting developments that emphasise the quality and permeability of the pedestrian environment.

Proposal 61 - Improve the quality and provision of information and resources for walking, especially at stations, interchanges and in town centres by measures, including:

- Extending Legible London to other areas;
- Creating an online one-stop walking resource to facilitate walking, linked to an enhanced Journey Planner with advanced walking options; and
- Developing consistent wayfinding formats and making use of new wayfinding technologies.

Proposal 62 - Promote walking and its benefits through information campaigns, events to raise the profile of walking, and smarter travel initiatives such as school and workplace travel plans.

Proposal 83 - Use the principles of 'better streets' to seek to improve town centres, in particular: removing clutter and improving the layout and design of streets; enhancing and protecting the built and historic environment; increasing the permeability of streets; and creating clear and easily understandable routes and spaces to make it easier for cyclists, pedestrians and disabled people to get about.

Proposal 84 - Introduce accessible for all, 'better streets' initiatives. Consideration will be given to trialling the removal of traffic signals where safe and appropriate.

Proposal 85 - Implement integrated and complementary improvements to town centres, streets and pedestrian and cycling routes directly adjacent to where major public transport investment projects are being delivered, using sustainable materials.

Proposal 116 - Use smarter travel initiatives across London to facilitate more efficient use of the transport system, achieve mode shift to cycling, walking and public transport and encourage the take-up of healthier travel options.

2.1.2

The Mayor's Vision for Cycling in London, March 2013

The Mayor's Vision for Cycling in London document outlines objectives aimed at encouraging cycling within the capital. The key objectives are outlined as follows:

- A Tube network for the bike. A network of direct, high-capacity, joined-up cycle routes. Many running parallel with key London Underground, rail and bus routes, radial and orbital. A 'bike Crossrail', substantially segregated, from west to east London. Local routes will link with them. In addition, more, fully-segregated lanes and junctions, more mandatory cycle lanes, and a network of direct back-street Quiet ways;
- Safer streets for the bike. London's streets and spaces to become places where cyclists feel they belong and are safe. Spending on junction review will be significantly increased, and it will be recast to prioritise major and substantial improvements to the worst junctions. A range of radical measures will improve the safety of cyclists around large vehicles;
- More people travelling by bike. 'Normalise' cycling, making it something anyone feels comfortable doing. Hundreds of thousands more people, of all ages, races and backgrounds, and in all parts of London, will discover that the bike has changed their lives; and
- Better places for everyone. Improvements will benefit all, including the non-cycling population. The new bike routes will create green corridors, even linear parks, with more tree-planting, more space for pedestrians and less traffic. Cycling will promote community safety, bringing new life and vitality to underused streets. Routes will specifically target parts of the Tube and bus network which are over capacity, promoting transfers to the bike and relieving overcrowding and reduce the dominance of motor traffic.

Central to the vision is the belief that more cycling will benefit everyone, not just cyclists.

2.1.3

TfL's Walking Good Practice Guide, April 2012

TfL's Walking Good Practice guide is designed to assist in planning, designing and implementing walking schemes across London. It promotes the introduction and route and corridor based walking schemes whilst considering the need for cross-modal improvements to provide an equitable balance based on local transport needs and priorities. The guidance emphasises that successful walking schemes should:

- Encourage more people to walk;
- Increase the numbers of walking trips undertaken;
- Make walking in London easier, more convenient and enjoyable;
- Bring about a change in people's travel patterns by raising awareness of walking as a transport choice; and
- Improve the level of service offered to those who are already walking.

The key themes of the guidance focus on infrastructure, information and promotion of walking in the capital:

- **Infrastructure.** Key Walking Routes have been identified as a means to improve walking infrastructure in London, increase the number of trips made on foot, increase the safety and security of those using the walking routes and support local businesses by facilitating pedestrian access. The Key Walking Routes scheme allows for linking together key destinations within a town centre such as shops, leisure facilities, schools and community centres, addresses poor infrastructure such as vandalised streets or lack of pedestrian routes and delivers route makeovers along defined corridors. Key Walking Routes should be implemented in areas that are currently used by large volumes of people or places with a known pedestrian demand that is not being met. They should be based on an understanding of pedestrian needs and behaviour;

- **Information.** Lack of information is considered a key barrier to walking. The Legible London scheme is a wayfinding system for London designed to provide useful information for people moving around the capital on foot. Legible London signage is consistent, easy to read and easily available - provided on street, at stations, bus stops and at Cycle Hire docking stations. TfL is keen to support the implementation of Legible London more widely across London. In addition, audit tools such as the Pedestrian Environment Review System (PERS) or Streetaudit should be used to assess and plan improvements to the pedestrian environment; and
- **Promotion.** Schemes promoting walking include pedestrian road safety campaigns, events for Key Walking Route launches, publicity materials, walking promotions and information leaflets as well as posters. Of particular focus is the encouragement of short-distance trips to be made on foot, where they are currently made by car or by public transport.

2.1.4 *Legible London, 2010*

Legible London is a wayfinding project designed to provide better information throughout the Capital for people who want to walk. Existing pedestrian sign systems in central London are ineffective and confusing, with an over-reliance on the London Underground map for navigation above ground. Legible London provides coordinated walking information across the capital, offering benefits for the transport system, public health, the economy, tourism and the environment.

Legible London is based on a set of design principles derived from end user research and wayfinding best practice. It uses accessible maps of different scales to convey quickly not only the immediate surroundings, but to show how the area connects to those around it. A clear, easily understood hierarchy of place names has been developed with a 3D depiction of local landmarks. In addition, the key item considered was the strategic placement of the information points, based on route hierarchy, decision points, arrival points and destinations/areas of interest.

The Mayor's Transport Strategy states that the Mayor, through TfL, and working with the London boroughs, developers and other stakeholders, will improve the quality and provision of information and resources for walking, especially at stations, interchanges and in town centres by measures including extending Legible London to other areas. The implementation of the scheme is encouraged through the use of Scheme Coordinators whose role is to raise funding, implement and deliver the scheme in line with guidelines and standards defined by TfL. Design Standards have been identified in order to maintain consistency between areas and thus facilitate the use of the scheme by pedestrians.

2.1.5 *Pedestrian Environment Reviews System (PERS) Fact Sheet*

PERS is a walking audit tool, used to assess the level of service and quality provided for pedestrians across a range of pedestrian environments. It does so by way of two elements - checksheets for use in the field to score environments and software used to produce graphs and reports. Qualitative and quantitative methods of assessment are required with a scoring system where a score of -3 denotes a poor standard and +3 identifies a good standard. Weighting factors are used for prioritising certain parameters as necessary.

The elements of the pedestrian environment that require an audit include:

- Links such as footways, footpaths or highways;
- Crossings;
- Routes;

- Public Spaces
- Public Transport Waiting Areas; and
- Interchange Spaces.

TfL request that organisations planning new developments undertake a PERS walking audit as part of the planning application to demonstrate that the needs of pedestrians have been considered from the outset of the proposed development.

2.1.6 ***Pedestrian Comfort Level Guidance, 2010***

The key objective of this guidance is to assist in creating excellent pedestrian environments through a clear, consistent process during the planning and implementation of transport improvement projects. For proposed developments, a comfort assessment will identify any potential problems at an early stage leading to an early identification of mitigation measures.

The Pedestrian Comfort Level (PCL) for London should be considered when assessing the pedestrian environment. Pedestrian comfort levels classify the level of comfort based on the level of crowding and pedestrian experiences on the street. Guidance is provided for different area types and times of day. The Pedestrian Comfort Level Guidance caters for both footways and pedestrian crossing points to ensure that the full pedestrian environment is assessed and reviewed.

The guidance offers step-by-step instructions on carrying out a pedestrian comfort assessment. This includes site selection, area type categorisation, measurements and spreadsheet assessment and the identification of mitigation measures, with results rated between PCL of A (comfortable) to E (uncomfortable). Guidance on recommended footway widths is included as per the existing or anticipated pedestrian flow and advice is given on the interrelationship between pedestrian flow and footway obstructions such as benches, bus stops, cycle parking and cash machines.

2.1.7 ***Delivering the Benefits for Cycling to Outer London, February 2010***

The document focuses on barriers to cycling with a particular focus on Outer London Boroughs. It aims to achieve a modal shift to cycling through:

- Setting the context and examining the importance of cycling in Outer London;
- Identifying the barriers to cycling in Outer London;
- Considering methods by which these barriers can be overcome;
- Providing practical advice on breaking down the barriers to cycling in Outer London; and
- Identifying how to build on this work and create a legacy of cycling in Outer London.

Attitudinal barriers, physical barriers and barriers to delivery have been identified as the three main types of barriers to cycling in Outer London, with solutions such as cycle training, travel planning, way finding, parking provision, improved permeability, political commitment and improved evaluation and monitoring of cycling initiatives out forward as ways of mitigating against those.

In order to successfully overcome the barriers to cycling in Outer London an integrated approach is required. The underlying principles of this approach are:

- Delivering a variety of smarter travel interventions;
- Using innovative infrastructure measures;

- Demonstrating political commitment in the borough; and
- Creating partnership working opportunities and mainstreaming cycling.

There is significant potential to increase cycling in Outer London if the barriers can be overcome, with initial findings showing a high percentage of short car trips that could easily be cycled in Outer London and some concentrated pockets of high demand around metropolitan centres.

In order to realise this potential, a combination of locally-led measures are required to encourage and facilitate cycling. These measures are likely to include both infrastructure improvements and marketing and promotional activities. They will also require political commitment and partnership working to achieve success. Boroughs who adopt this approach can aspire to achieve a step-change in levels of cycling with the potential for other benefits. These include a reduction in health inequalities, thriving local town centres, and a reduction in local congestion and carbon emissions.

2.1.8 ***London Cycling Design Standards (2005)***

The London Cycling Design Standards (2005) include guidance on best practice for cycle-friendly design. The elements covered by the guidance include all aspects of cycling infrastructure, which need to be addressed to encourage cycle use in London and to ensure that cycling is safe and accessible for cyclists as well as all other road users. The relevant aspects include information signs relating to cycle-friendly routes, speed restrictions on cycle-friendly road sections, road markings denoting cycling priority, junction and crossing design, cycle lane design, cycle parking standards, cycle route connectivity, route maintenance, lighting, and surfacing. Overall, it is hoped that routing will be attractive to cyclists in London, help them maintain a steady speed without obstruction and ensure their personal safety by ensuring they are easily seen by road users and pedestrians. These standards should help promote a modal shift towards sustainable modes and allow cycling targets to be met within London. The guide also aims to promote considerate behaviour and allow cyclists to integrate safely into the transport network, whilst managing any risks.

2.1.9 ***London Cycling Design Standards (Draft for Consultation, June 2014)***

The London Cycling Design Standard (Draft for Consultation, June 2014) has been published as a draft for consultation in June and July 2014. These revised standards provide technical information to inform design options and promote an integrated approach to delivering high quality infrastructure for cycling in London. These standards have been updated to reflect established and emerging best practice to aid meet the aspirations of the Mayor's Vision for Cycling. This document provides detail on design requirements, tools and techniques, cycle lanes and tracks, junctions and crossings, cycle-friendly street design, signs and markings, construction (including surfacing) as well as cycle parking. Overall, it is hoped the measures proposed will make cycling safer, allow for logical and continuous routes as well as ensure cycling surfacing is fit for purpose, smooth and well maintained. The measures should also allow routes to be legible, attractive and adaptable to an increase in cyclists using the infrastructure provision. These best practices for cycling design are intended to be used by planners and designers meet the required standards.

3 THE AWWC STUDY PROCESS

The AWWC study has been carried out in a sequence of stages, which are outlined below:

3.1 Scoping Process

As previously detailed, a scoping exercise was initially carried out with TfL and LBB to establish the requirements of the AWWC study and the specific outputs required following its completion.

The scoping study was submitted and approved by LBB and TfL in August 2013 and during the scoping exercise, key areas were identified in the vicinity of the proposed BXC site as attractors and/or generators for the routes which would be assessed as part of the AWWC Study.

The key areas include high-density residential zones, key transport nodes including London Underground (LU) and National Rail (NR) stations and commercial high streets, which are likely to attract and/or generate large numbers of walking and cycling trips to and from the BXC site. The agreed final locations are set out below:

3.2 Defining Key Origins/Destinations

As part of the scoping process a total of 14 key origins/destinations were identified as directly relevant to the BXC development location. These are:

- Cricklewood town centre and First Capital Connect (FCC) station
- Brent Cross LU Station
- Hendon Central LU station
- West Hendon/Hendon FCC station
- Willesden Green town centre and LU station
- Golders Green town centre and LU station
- Dollis Hill town centre and LU station
- Childs Hill town centre
- Hendon town centre
- Colindale town centre and LU station
- Kilburn town centre and Kilburn High Road London Overground (LO) station
- Neasden town centre and LU station
- Temple Fortune town centre
- West Hampstead

3.3 Route Selection

Pedestrian and cycle routes to and from the key areas outlined above were identified by a desktop assessment. The TfL online journey planner was used to identify the most direct, appropriate and convenient routes for both pedestrian and cycle traffic.

Cycle routes were also defined using TfL 'Local Cycling Guide' maps. Where possible, proposed cycle routes between the 14 key origins/destinations and the BXC site followed

existing cycle routes or routes recommended for use by cyclists as part of the TfL cycle network. A plot of the current TfL cycle routes is shown in **Appendix B**.

A meeting was held in October 2013 with LBB and TfL officers to finalise and agree the routes. During this meeting a number of routes were amended from those identified and some additional alternative routes were also included in order to provide comprehensive coverage of walking and cycling route options to some destinations. The result of this exercise was an agreed final set of routes to be taken forward into the study. Details of the final routes selected were provided to LBC and LBB for information.

A total of 16 walking and 17 cycling routes were identified. In addition, links alongside the A41 and A406 were identified. **Table 3.1** below outlines the routes identified to each key area and the links identified alongside the A41 and A406 corridors. The A5 corridor was audited as part of the A5 Corridor Study and pedestrian and cycle facilities on the A5 are discussed in that report. The plan held in **Appendix C** shows the routes audited.

Table 3.1 Pedestrian and Cycle Routes Audited

Key Areas	Route Name	Pedestrian Route	Cycle Route
Neasden (Town Centre and LU Station)	Neasden (LU Station)	Layfield Road - Edgware Road - Oxgate Lane - Crest Road - Tanfield Avenue - Neasden Lane	Edgware Road -Oxgate Lane - Crest Road - Tanfield Avenue - Kenwyn Drive - Avondale Avenue - Ballogie Avenue - Lansdowne Grove - Neasden Lane
Dollis Hill (Town Centre and LU Station)	Dollis Hill	Layfield Road - Edgware Road - Oxgate Gardens - Dollis Hill Lane - Gladstone Park - Hamilton Road	-
	Dollis Hill (Signed Route via Crest Road)	-	Edgware Road - Oxgate Lane - Crest Road - Tanfield Avenue - Tanfield Avenue - Dudden Hill Lane - Burnley Road
	Dollis Hill (Off-Road Route)	-	Oxgate Gardens - Dollis Hill Lane - Park Side - Gladstone Park - Kendal Road - Hamilton Road
	Dollis Hill (Recommended Route)	-	Brent Terrace - Claremont Road - Cricklewood Lane - Depot Approach - Ashford Lane - Olive Road - Kendal Road - Hamilton Road
Colindale (Town Centre and LU Station)	Colindale (Town Centre Route)	Sturgess Park - Sturgess Avenue - Park Road -Cheyne Walk - Hendon Park - West View - Church End - Greyhound Hill - Aerodrome Road	-
	Colindale (LU Station Route)	Sturgess Park - Sturgess Avenue - Dallas Road - Station Road - Herbert Road - Edgware Road (A5) - Rookery Way - Rushgrove Park - Colindeep Lane - Sheaveshill Avenue - Colindale Park	-

	Colindale (Town Centre / LU Station Route)	–	Prince Charles Drive - Shirehall Lane - Hendon Park - West View - Church End - Greyhound Hill - Aerodrome Road - Colindale Avenue
West Hendon/Hendon FCC Station	West Hendon	Sturgess Park - Sturgess Avenue - Dallas Road - Mount Road - Algernon Road - Station Road	Sturgess Park - Sturgess Avenue - Dallas Road - Mount Road - Algernon Road - Station Road
Hendon Central LU Station	Hendon Central (LU Station)	Sturgess Park - Sturgess Avenue - Allington Road	Prince Charles Drive - Renters Avenue - Cheyne Walk - Hendon Road
Hendon Town Centre	Hendon Town Centre (Residential Road Route)	Sturgess Park - Sturgess Avenue - Allington Road - Vivian Avenue - Queen's Road - Wykeham Road - Brampton Grove - Brent Street	–
	Hendon (Main Road Route)	Sturgess Park - Sturgess Avenue - Hendon Way - Queen's Road - Brent Street	–
	Hendon	–	Prince Charles Drive - Hendon Park - West View - Church Road
Temple Fortune Town Centre	Temple Fortune	Prince Charles Road- Under A406/A41 - Highfield Avenue - Golders Green Road - Highfield Road - Oakfield Roads - Hallswelle Road - Finchley Road	–
	Temple Fortune (Signed Route)	–	Prince Charles Drive - Under A406 - Shirehall Lane - Green Lane - Bell Lane/Bridge Lane - Hallswelle Road - Finchley Road
	Temple Fortune (Recommended Route)	–	Prince Charles Drive - Under A406 - Highfield Avenue - Golders Green Road - Highfield Road - Oakfields Road - Hallswelle Road - Finchley Road
Brent Cross LU Station	Brent Cross (LU Station)	Prince Charles Drive - Under A406/A41 - Highfield Avenue	Prince Charles Drive - Under A406/A41 - Highfield Avenue
Childs Hill Town Centre	Childs Hill (Town Centre)	Cotswold Gardens- Pennine Drive - Basing Hill Park - Wayside - Granville Road - Nant Road - Crewys Road - Cricklewood Lane	Purbeck Road - Cheviot Gardens - Mendip Drive - The Vale - Granville Road - Nant Road - Crewys Road - Cricklewood Lane
Golders Green (Town Centre and LU Station)	Golders Green (LU Station)	Cotswold Gardens- Pennine Drive - Basing Hill Park - Wayside - The Vale - Hodford Road - Golders Green Road	Ridge Hill - The Ridgeway - Hodford Road - Golders Green Road

Cricklewood (Town Centre and First Capital Connect (FCC) Station)	Cricklewood	Claremont Road - Cricklewood Lane	Brent Terrace - Claremont Road - Cricklewood Lane
Kilburn (Town Centre and Kilburn High Road London Overground (LO) Station)	Kilburn High Road	Claremont Road - Cricklewood Lane - A5	Claremont Road - Lichfield Road - Minster Road - Fordwych Road - Mill Lane - A5
Willesden Green (Town Centre and LU Station)	Willesden Green (LU Station)	Claremont Road - Cricklewood Lane - Chichelle Road - Walm Lane	Brent Terrace - Claremont Road - Cricklewood Lane - Chichelle Road - Walm Lane
West Hampstead	West Hampstead	Claremont Road - Cricklewood Lane - A5 - Maygrove Road - Mill Lane - Sumatra Road	Claremont Road - Lichfield Road - Westbere Road - Mill Lane - Sumatra Road
A406	Between Brent Cross Flyover and A5	Footbridges under A406 – links between footbridges (under rail line) – M1 footbridge – Tilling Road / Etheridge Road – Templehof Avenue – A406 footways – A406 footbridge at Shirehall Park	Footbridges under A406 – links between footbridges (under rail line) – M1 footbridge – Tilling Road / Etheridge Road – Templehof Avenue - A406 footways
A41	Between A41/Queens Road/Vivian Avenue junction and superstore underpass	A41 footways – Haley Road / Spalding Road – A41 subway connecting Haley Road/ Spalding Road – Brent Cross Flyover footbridge / subways – Brentfield Gardens – Footways alongside A41 – subway to superstore under A41	-
A5	Between A406 and Minster Road	Footbridges under A406 - footways alongside A5 between A5/A406 junction and Minster Road	Footbridges under A406 / carriageway under A406 – A5 carriageway between A5/A406 junction and Minster Road

3.4 Route Reviews and PERS/ CERS audits

Following agreement of the routes each route was assessed using the Streetaudit Pedestrian Environment Review System (PERS) and Cycling Environment Review System (CERS) guidance and software.

The accompanying document 'Brent Cross Cricklewood PERS and CERS Audit Findings Report' Revision 02 (document reference: 47065005-TP-RPT-033) held in **Appendix D** provides further details on the following:

- Routes audited
- PERS and CERS methodology
- Details of the on-site evaluation
- Data analysis
- Key audit findings (RAG ratings, PERS/CERS scores, and key issues for each parameter audited (i.e. link, junction, crossing, public transport waiting area, public transport interchange etc.))
- Full PERS and CERS outputs

The PERS and CERS Audit Findings Report provides the detail listed above both for the routes within this AWWC Study and also for a number of other routes within the BXC study area for other elements of work (i.e. the A5 Corridor Study walking and cycling review).

Further detail with regards to the PERS and CERS audit findings is held in Section 4.

3.5 Identify Route Constraints, Opportunities and Improvements

The PERS and CERS information was then examined by URS to identify improvements which could be put forward for each route. These included a range of infrastructure improvements as well as measures to address maintenance and enforcement issues. For the cycle routes, improvements were considered between the BXC red line boundary and the destination of each route. Walking routes become very dispersed at distances greater than about 1km away from the site. Therefore measures to improve walking routes to the development were only been considered within 1km of the site boundary.

A plan detailing the suggested 'wider route improvements' which included both the 'proposed improvements to integrate the development into the existing networks' and 'potential improvements for consideration by local authorities' was then produced (plan reference: 47066786/AWWCS/001 Rev C). The information in this drawing was also provided in an alternative form, this being the specific route schedules.

3.6 Local Authority Review

The draft AWWC Study report and the associated drawing (47066786/AWWCS/001 Rev C) were submitted to and reviewed by TfL, the London Borough of Barnet (LBB), the London Borough of Brent (LBB) and the London Borough of Camden (LBC). Each local authority responded with suggested comments, amendments and additions to the plan which, where considered appropriate to the study, were included within the drawing 47066786/AWWCS/003 Rev B (held in **Appendix E**). As well as improvements, minor route additions and diversions suggested by the local authorities were also included where considered relevant.

The suggested 'wider route improvements' which include both the 'proposed improvements to integrate the development into the existing networks' and 'potential improvements for consideration by local authorities' are considered in Section 5 of this report whilst the 'proposed improvements to integrate the development into the existing networks' alone are considered in more detail in Section 6.

3.7 Priority

The proposed wider improvement schemes (excluding the proposed improvements to integrate the development into the existing network) were then graded in order to identify the forecast need for the implementation of the improvement measures in order to enable prioritisation in the future where necessary. Further detail of the prioritisation is held in Section 7.

3.8 Consultation Process

Schedule 17 of the S106 requires consultation on the proposed improvements to take place with key local stakeholders. A consultation workshop was held on Thursday 6 November 2014 with key local stakeholders to present the proposals. Further detail is held in Section 8.

4

PERS AND CERS AUDIT FINDINGS

The PERS and CERS audit findings, together with further information on the process undertaken can be found in the accompanying document 'Brent Cross Cricklewood PERS and CERS Audit Findings Report' Revision 02 (document reference: 47065005-TP-RPT-033 Rev 02) which is held in **Appendix D**.

5 IDENTIFIED WIDER ROUTE IMPROVEMENTS

Details of the suggested 'wider route improvements' are shown in the plan held in **Appendix E** (drawing number: 47066786/AWWCS/003 Rev B). The improvements shown on this plan include the initial proposed improvements along the route proposed by URS and also the amendments and additions suggested by the local authorities where considered appropriate to the study. The 'wider route improvements include both the 'proposed improvements to integrate the development into the existing networks' and 'potential improvements for consideration by local authorities'.

The information in this drawing has also been provided in an alternative form, this being the specific route schedules (held in **Appendix F**) which should be read in conjunction with the route schedule plans 47066786/AWWCS/005 and 47066786/AWWCS/006 (also held in **Appendix F**).

All of the proposed improvements have been devised to improve the PERS and CERS scores along each of the routes considered.

6

PROPOSED IMPROVEMENTS TO INTEGRATE THE DEVELOPMENT INTO THE EXISTING NETWORK

The proposed improvements identified as part of the AWWC Study and considered to be required to integrate the development into the existing networks are shown on the plan held in **Appendix E**.

These improvements are outlined in **Table 6.1** below. As some routes overlap one another, there is some repetition of measures within this table.

Table 6.1 Proposed Improvements to Integrate the Development into Existing Networks

Key Areas	Route	Pedestrian Improvements	Cycle Improvements
Neasden (Town Centre and LU Station)	Neasden (LU Station)	<p>Provide dropped kerbs and tactile paving across the Brent Park Road arm of the Layfield Road/Brent Park Road/Dallas Road junction and across the Oxgate Lane arm of the A5 Edgware Road/Oxgate Lane junction</p> <p>Realign dropped kerbs and install tactile paving at the two Layfield Road/Layfield Close junctions, the two Layfield Road/Layfield Crescent junctions and across the Dallas Road arm of the Layfield Road/Brent Park Road/Dallas Road junction</p> <p>Provide directional signage at the Layfield Road/Brent Park Road/Dallas Road junction, at the toucan crossing to the south of the A5 Edgware Road/A406 North Circular Road junction and at the A5 Edgware Road / Oxgate Lane Junction</p> <p>Improve surfacing, remove on-street furniture causing an obstruction and provide shared use signage along the shared cycle/footway to the east of the A5 Edgware Road/A406 North Circular Road junction</p> <p>Upgrade crossing on A5 to the north of Staples Corner to a toucan crossing</p> <p>Provide a shared footway/cycleway along eastern side of A5 (north of Staples Corner) between Staples Corner and Brent Park Road.</p>	<p>Improve shared facility signage (directing cyclists onto facility and informing users of presence of facility)</p> <p>Install wayfinding signage at toucan crossing and at A5/Oxgate Lane junction</p> <p>Improve surfacing on shared facility</p> <p>Clear street furniture on shared facility</p> <p>Refresh on-road cycle symbol road markings (on A5 northbound off-slip)</p> <p>Improved road surfacing at A5/Oxgate Lane junction</p>
Dollis Hill (Town Centre and LU Station)	Dollis Hill	<p>Provide dropped kerbs and tactile paving across the Brent Park Road arm of the Layfield Road/Brent Park Road/Dallas Road junction, across the Oxgate Lane arm of the A5 Edgware Road/Oxgate Lane junction</p> <p>Realign dropped kerbs and install tactile paving at the two Layfield Road/Layfield Close junctions, the two Layfield</p>	-

		<p>Road/Layfield Crescent junctions and across the Dallas Road arm of the Layfield Road/Brent Park Road/Dallas Road junction</p> <p>Provide directional signage at the Layfield Road/Brent Park Road/Dallas Road junction, at the toucan crossing to the south of the A5 Edgware Road/A406 North Circular Road junction, directional signage at the A5 Edgware Road / Oxgate Lane junction</p> <p>Improve surfacing, remove on-street furniture causing an obstruction and provide shared use signage along the shared cycle/footway to the east of the A5 Edgware Road/A406 North Circular Road junction</p> <p>Upgrade crossing on A5 to the north of Staples Corner to a toucan crossing</p> <p>Provide a shared footway/cycleway along eastern side of A5 (north of Staples Corner) between Staples Corner and Brent Park Road.</p>	
	Dollis Hill (Signed Route via Crest Road)	-	<p>Improve shared facility signage (directing cyclists onto facility and informing users of presence of facility)</p> <p>Install wayfinding signage at toucan crossing and at A5/Oxgate Lane junction</p> <p>Improve surfacing on shared facility</p> <p>Clear street furniture on shared facility</p> <p>Refresh on-road cycle symbol road markings (on A5 northbound off-slip)</p> <p>Improved road surfacing at A5/Oxgate Lane junction</p>
	Dollis Hill (Off-Road Route)	-	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.
	Dollis Hill (Recommended Route)	-	<p>Improve lighting along Depot Approach</p> <p>Provide cycle awareness signs on Depot Approach</p>
Colindale Town Centre and LU Station	Colindale (Town Centre Route)	<p>Reinstate footway surfacing along Renters Avenue</p> <p>Provide dropped kerbs and tactile paving at Renters Avenue</p> <p>Provide CCTV in subway</p> <p>Provide corduroy paving steps and</p>	-

		<p>directional signage on footbridge over railway line</p> <p>Improve surfacing and cut back overgrown foliage present on footbridge over railway line</p> <p>Provide directional signage within Hendon Park and on approach to West View</p> <p>Realign dropped kerbs and widen refuge island at the uncontrolled crossing on Queen's Road</p>	
	Colindale (LU Station Route)	<p>Provide directional signage within Sturgess Park, at the Sturgess Avenue/Dallas Road junction, at the Dallas Road/Park Road junction, the Mount Road/Vicarage Road junction, at the A504 Station Road/Algernon Road junction to and from West Hendon/Broadway/Cool Oak Lane at the Park Road/Dallas Road Junction and at Algernon Road/Station Road junction</p> <p>Improve dropped kerbs and install tactile paving at the Sturgess Avenue/Riverside junction and the Sturgess Avenue/Dallas Road junction</p> <p>Reinstate footways where tree root damage has occurred on Sturgess Avenue</p> <p>Provide tactile paving at the Dallas Road/Park Road junction, the Mount Road/Vicarage Road junction, the access to the community centre on Algernon Road, the Algernon Road/Montagu Road junction, at the A504 Station Road/Algernon Road junction and at Hendon Station approach road and Algernon Road</p> <p>Provide directional signage and CCTV at Hendon station</p> <p>Remove pedestrian pinch point on approach to station</p> <p>Provide toucan crossing along to Station Road to replace the existing crossing</p> <p>Install shared footway/cycleway on south side of Station Road, across corner onto Algernon Road</p>	-
	Colindale (Town Centre / LU Station Route)	-	<p>Provide directional signage at the Shirehall Lane roundabout and through Hendon Park as well as at both entrances to park</p> <p>Improve lighting under bridge</p> <p>Improve crossing across Queens Road at park entrance (relocate pedestrian</p>

			guard rails currently in line of crossing, provide dropped kerbs on crossing line, widen refuge island)
West Hendon / Hendon FCC Station	West Hendon	<p>Provide directional signage within Sturgess Park, at the Sturgess Avenue/Dallas Road junction, at the Dallas Road/Park Road junction, the Mount Road/Vicarage Road junction, at the A504 Station Road/Algernon Road junction</p> <p>Provide directional signage to and from West Hendon/Broadway/Cool Oak Lane at the Park Road/Dallas Road Junction</p> <p>Improve dropped kerbs and install tactile paving at the Sturgess Avenue/Riverside junction and the Sturgess Avenue/Dallas Road junction</p> <p>Provide tactile paving at the Dallas Road/Park Road junction, the Mount Road/Vicarage Road junction, the access to the community centre on Algernon Road, the Algernon Road/Montagu Road junction and at the A504 Station Road/Algernon Road junction</p> <p>Reinstate footways where tree root damage has occurred on Sturgess Avenue</p>	<p>Install wayfinding at Layfield Road/Dallas Road junction, Dallas Road/Park Road junction and Dallas Road/Vicarage Road junction, Algernon Road/Station Road junction and at station approach</p> <p>Provide cycle symbol road markings and cycle awareness signage along Layfield Road, Dallas Road and Algernon Road</p> <p>Provide cycle awareness signage and cycle lanes along Station Road</p> <p>Install CCTV at station</p> <p>Provide additional cycle parking at station</p> <p>Replace pedestrian crossing with toucan crossing</p> <p>Provide a shared footway/cycleway on south side of Station Road (connecting with Algernon Road)</p>
Hendon Central (LU) Routes	Hendon Central (LU) Routes	<p>Provide directional signage within Sturgess Park, along Park Road, along Allington Road, at the Vivian Avenue/Allington Road/Alderton Crescent junction, at the A41 Hendon Way/Vivian Avenue/Queen's Road subway (northern arm of the junction) and outside Hendon Central LU station</p> <p>Realign dropped kerbs and install tactile paving at the Sturgess Avenue/Park Road junction and the Park Road/Fairfield Avenue junction</p> <p>Install tactile paving at the Allington Road/Elliot Avenue junction, the Allington Road/Graham Road junction and the Vivian Avenue/Allington Road/Alderton Crescent junction</p> <p>Include a pedestrian phase on the Vivian Avenue arm of the A41 Hendon Way/Vivian Avenue/Queen's Road signalised crossing (subject to feasibility)</p> <p>Provide a toucan crossing on the Queen's Road arm of the A41 Hendon Way/Vivian Avenue/Queen's Road signalised crossing</p> <p>Provide a pedestrian countdown on the</p>	<p>Provide directional signage at the Shirehall Lane roundabout, along Cheyne Walk / Renters Avenue and at Cheyne Walk / A41 junction</p> <p>Provide cycle symbol carriageway markings along Renters Avenue and Cheyne Walk</p> <p>Provide cycle awareness signage along Renters Avenue / Cheyne Walk and at Cheyne Walk / A41 junction</p> <p>Provide a facility directing cyclists onto footway (see proposals for A41 footway in Section 3)</p> <p>Reinstate footway surfacing along Renters Avenue</p> <p>Provide off-road cycle facility on footway alongside A41 between Cheyne Walk and LU station with associated lining / signage</p> <p>Provide toucan crossing with countdown across Queens Road</p> <p>Provide additional cycle parking at station</p> <p>Provide cycle parking shelter at station</p>

		toucan crossing on the Queen's Road arm of the A41 Hendon Way/Vivian Avenue/Queen's Road	
	Hendon Central LU Station (additional route suggested by local authorities, see section 3.6)	-	<p>Provide directional signage at Sturgess Park, on Park Road, Allington Road and Vivian Avenue</p> <p>Install cycle awareness signage along Allington Road</p> <p>Provide additional cycle parking at station</p> <p>Provide cycle parking shelter at station</p>
Hendon Town Centre	Hendon Town Centre (Residential Road Route)	<p>Provide directional signage within Sturgess Park and along Park Road, Allington Road and at the Vivian Avenue/Allington Road/Alderton Crescent junction, A41 Hendon Way/Vivian Avenue/Queen's Road subway (northern arm of the junction) and outside Hendon Central LU station</p> <p>Realign dropped kerbs and install tactile paving at the Sturgess Avenue/Park Road junction and the Park Road/Fairfield Avenue junction</p> <p>Install tactile paving at the Allington Road/Elliot Avenue junction, the Allington Road/Graham Road junction and the Vivian Avenue/Allington Road/Alderton Crescent junction</p> <p>Include a pedestrian phase on the Vivian Avenue arm of the A41 Hendon Way/Vivian Avenue/Queen's Road signalised crossing (subject to feasibility)</p> <p>Provide a toucan crossing on the Queen's Road arm of the A41 Hendon Way/Vivian Avenue/Queen's Road signalised crossing</p> <p>Provide a pedestrian countdown on the toucan crossing on the Queen's Road arm of the A41 Hendon Way/Vivian Avenue/Queen's Road</p>	-
	Hendon (Main Road Route)	<p>Improve lighting and provide directional signage and CCTV in the subway under the A41</p> <p>Provide corduroy paving on subway steps on access to subway under A41</p> <p>Include a pedestrian phase on the Vivian Avenue arm of the A41 Hendon Way/Vivian Avenue/Queen's Road signalised crossing (subject to feasibility)</p> <p>Provide a toucan crossing on the Queen's Road arm of the A41 Hendon Way/Vivian</p>	-

		<p>Avenue/Queen's Road signalised crossing</p> <p>Provide directional signage and CCTV on both sides of the A41 Hendon Way/Vivian Avenue/Queen's Road subway (northern arm of the junction),</p> <p>Install tactile paving at the Queen's Road/Wykeham Road junction</p> <p>Provide directional signage along the A41 and outside Hendon Central LU station</p> <p>Provide directional signage, realign dropped kerbs and widen refuge island at the uncontrolled crossing on Queen's Road</p>	
	Hendon / Hendon High Street	-	<p>Provide directional signage at the Shirehall Lane roundabout and through Hendon Park as well as at both entrances to the park</p> <p>Improve lighting under bridge</p> <p>Improve crossing across Queens Road at park entrance (relocate pedestrian guard rails currently in line of crossing, provide dropped kerbs on crossing line, widen refuge island)</p>
Temple Fortune Town Centre	Temple Fortune	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.	-
	Temple Fortune (Signed Route)	-	<p>Provide directional signage at the Shirehall Lane roundabout</p> <p>Improve lighting under bridge</p>
	Temple Fortune (Recommended Route)	-	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.
Brent Cross LU Station	Brent Cross (LU Station)	All improvements along this route to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works as they are located within the red line boundary.	All improvements along this route to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works as they are located within the red line boundary.
Childs Hill Town Centre	Childs Hill (Town Centre)	<p>Install directional signage along Purbeck Drive, Cotswold Gardens and at the Cotswold Gardens/Pennine Drive junction</p> <p>Provide CCTV at the entrance to Clitterhouse playing fields</p> <p>Provide dropped kerbs and install tactile</p>	<p>Provide directional signage at access to playing fields, at the roundabout, Purbeck Drive, Mendip Drive, The Vale</p> <p>Provide cycle awareness signage at access to playing fields, at the roundabout, Purbeck Drive, Cheviot</p>

		<p>paving at the northern Purbeck Drive approach and eastern Cotswold Gardens approach to the Cotswold Gardens/Purbeck Drive junction</p> <p>Install tactile paving at the Cotswold Gardens/Pennine Drive junction</p> <p>Upgrade the crossing at Hendon Way/Pennine Drive junction to a toucan crossing with audible signals which will provide pedestrians with increased priority and shorten the pedestrian delay</p> <p>Provide a pedestrian phase, rotating cone and audible information at the pedestrian crossing across Pennine Drive at Hendon Way/Pennine Drive junction</p>	<p>Gardens, Mendip Drive, The Vale</p> <p>Provide CCTV at access to playing fields</p> <p>Provide cycle symbol road markings along Purbeck Drive, at roundabout, Cheviot Gardens, Mendip Drive</p> <p>Advanced stop lines / feeder lanes at the A41 junction with The Vale</p> <p>Refresh road markings at Cleveland Gardens and Cumbrian Gardens junctions with Purbeck Drive, at Cheviot Gardens/Mendip Drive junction, Purbeck Drive/Cheviot Gardens junction and Mendip Drive/The Vale junction</p> <p>Carriageway surface repairs along Cheviot Gardens</p>
Golders Green (Town Centre and LU Station)	Golders Green (LU Station)	<p>Install directional signage along Purbeck Drive</p> <p>Install directional signage along Cotswold Gardens and at the Cotswold Gardens/Pennine Drive junction</p> <p>Provide CCTV at the entrance to Clitterhouse playing fields</p> <p>Provide dropped kerbs and install tactile paving at the northern Purbeck Drive approach and eastern Cotswold Gardens approach to the Cotswold Gardens/Purbeck Drive junction</p> <p>Install tactile paving at the Cotswold Gardens/Pennine Drive junction</p> <p>Upgrade the crossing at Hendon Way/Pennine Drive junction to a toucan crossing with audible signals which will provide pedestrians with increased priority and shorten the pedestrian delay</p> <p>Provide a pedestrian phase, rotating cone and audible information at the pedestrian crossing across Pennine Drive at Hendon Way/Pennine Drive junction</p>	<p>Provide cycle directional signage on Ridge Hill side of A406</p> <p>Provide cycle awareness signage on Ridge Hill side of A406</p> <p>Provide cycle symbol road markings on Ridge Hill</p>
Cricklewood (Town Centre and First Capital Connect (FCC) Station)	Cricklewood	<p>All improvements along this route to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works as they are located within the red line boundary.</p>	<p>All improvements along this route to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works as they are located within the red line boundary.</p>
Kilburn (Town Centre and Kilburn High Road London Overground)	Kilburn High Road	<p>All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for</p>	<p>All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements</p>

(LO) Station)		consideration by local authorities'.	for consideration by local authorities'.
Willesden Green (Town Centre and Lu Station)	Willesden Green (LU Station)	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.
West Hampstead	West Hampstead	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.	All improvements along this either to be provided as part of other Brent Cross Cricklewood Regeneration Scheme works or are 'potential improvements for consideration by local authorities'.

It should be noted however that in a number of cases the above destinations benefit from improvements on other routes (for example Colindale and TC/LU are on the same route as Hendon Town Centre and Childs Hill/ Golders Green are on the same route to Temple Fortune).

The proposed signage improvements are to be considered alongside the Wayfinding Strategy which is being undertaken separately to the AWWC study. Whilst initial feasibility of the proposed measures has been undertaken, it should be noted that all improvements will still be subject to full feasibility studies and the usual design process.

Responsibility for the funding of items identified as part of this study will be subject to later agreement between the developers and the authorities.

7

IMPROVEMENT PRIORITISATION

As stated in 3.7 this section sets out a system to prioritise the numerous wider route improvements that are put forward within Chapter 5 of this report. It should be noted that the prioritisation exercise includes the 'potential improvements for consideration by local authorities' only. It is considered that the grading system will provide a framework of requirements in order to assist both LBB and TfL in identifying key areas for improvements and on this basis the prioritisation below has been agreed with LBB and TfL.

This prioritisation system draws on and is largely consistent with the prioritisation system put forward in section 4.5.2 of the BXC Wayfinding Strategy where the proposed AWWCS route destinations have been divided into three 'tiers' based predominantly on the proximity and significance of their destinations from the BXC Regeneration Area. The three proposed 'destination' tiers are as outlined in **Table 7.1** below.

Table 7.1 Proposed Route Prioritisation Tiers

Tier	Route Destination
<p>1</p> <p>The wider route improvements identified on these routes should have the highest priority for implementation</p>	<p>Brent Cross London Underground (LU) station (the key underground station for BXCSC)</p> <p>Cricklewood Town Centre / FCC Station (both of which lie on the edge of the BXC Regeneration Area)</p> <p>West Hendon / Hendon FCC station (closest rail station to the northern part of the site)</p> <p>Hendon Central LU station</p>
<p>2</p> <p>Based on relative proximity to the site the wider route improvements identified on the following routes are considered to be the next priority</p>	<p>Hendon town centre</p> <p>Golders Green town centre / LU station</p> <p>Childs Hill town centre</p> <p>Willesden Green town centre / LU station</p>
<p>3</p> <p>Improvements identified on the remaining routes are considered to be the lowest priority for delivery, due to the length of the routes and relatively large distance of the destinations from BXC, which means they are less likely to be used as frequently.</p>	<p>Colindale town centre and LU station</p> <p>Temple Fortune town centre</p> <p>West Hampstead</p> <p>Kilburn town centre / Kilburn High Road London Overground (LO) Station</p> <p>Willesden Green town centre / LU station</p> <p>Dollis Hill town centre / LU station</p> <p>Neasden town centre / LU station</p>

8

CONSULTATION

Schedule 17 of the S106 documents that 'the study would need to be conducted in close liaison with the TAG and consult local cycle groups and other key stakeholders'.

The development of the AWWC Study has been conducted in close liaison with TfL and LBB, as advised in Schedule 17 and also with LBB and LBC as appropriate.

A consultation workshop was held on Thursday 6th November 2014. The aim of the consultation workshop was to present the proposed AWWCS improvement measures to key stakeholders and obtain feedback. In addition to representations from the development partners and URS the following groups/representatives attended the workshop:

- Melvin Dresner – Transport for London
- Sarah Burr - Transport for London
- Spencer Clark - Transport for London
- Tom Wyld – London Borough of Barnet / Re
- Jane Shipman – London Borough of Barnet / Re
- David James – London Borough of Barnet / Re
- Karen Mercer – London Borough of Barnet / Re
- Rosemary Fletcher – London Borough of Brent
- David Arditti – Brent Cyclists
- Simon Lawrence – London Communications Agency
- Alex McKinnell – Barnet Cyclists

Representatives from the following groups were invited to the workshop but did not attend:

- LB Camden officers
- London Cyclists Campaign and Touring Club
- Mayor's Cycling Commissioner
- Living Streets
- Ramblers Association

The notes from this consultation workshop are held in **Appendix G**.

9 SUMMARY

9.1 Summary

The purpose of this report is to discharge planning condition 1.20 which states the following:

'Not to submit the first Reserved Matters Application for any Phase or Sub-Phase of the Development without first submitting for the LPA's approval to the Area Wide Walking and Cycling Study and thereafter all relevant Reserved Matters Applications shall include details to ensure that the walking and cycling routes and facilities are provided and integrated with the walking and cycling network within and around the Site and around the relevant Phase or Sub-Phase in accordance with the approved Walking and Cycling Study and the Pedestrian and Cycle Strategy.'

A scoping exercise was carried out with TfL and LBB to establish the requirements of the AWWC study and the specific outputs required following its completion. A scoping report was submitted and approved by TfL and LBB in August 2013.

As part of the scoping process a total of 14 key origins/destinations were identified as directly relevant to the BXC development location.

Pedestrian and cycle routes to and from the 14 key areas were identified using the TfL online journey planner and TfL 'Local Cycling Guide' maps. A total of 16 walking and 17 cycling routes were identified. The routes were finalised and agreed with LBB and TfL officers and details of the final routes selected were provided to LBC and LBB for information. In addition, links alongside the A41 and A406 were identified for review by TfL.

Following agreement of the routes each route was assessed using the Streetaudit Pedestrian Environment Review System (PERS) and Cycling Environment Review System (CERS) guidance and software. The accompanying document 'Brent Cross Cricklewood PERS and CERS Audit Findings Report' Revision 02 (document reference: 47065005-TP-RPT-033) provides further details on the audits undertaken.

The PERS and CERS information was examined by URS to identify improvements which could be put forward for each route. These included a number of infrastructure improvements, as well as measures to address maintenance and enforcement issues. For the cycle routes, improvements were considered between the BXC red line boundary and the destination of each route. Walking routes become very dispersed at distances greater than about 1km away from the site. Therefore measures to improve walking routes to the development have only been considered within 1km of the site boundary.

The draft AWWC Study report and the associated drawing (47066786/AWWCS/001 Rev C) were submitted to and reviewed by TfL, LBB, LBB and LBC. Each local authority responded with suggested comments, amendments and additions to the plan which, where considered appropriate to the study, were included within the AWWCS improvements drawing (47066786/AWWCS/003 Rev B). As well as improvements, minor route additions and diversions suggested by the local authorities were also included where considered relevant. The final improvements plan referred to above includes 'wider route improvements' which encompass both the 'proposed improvements to integrate the development into the existing networks' and 'potential improvements for consideration by local authorities'.

The proposed 'potential improvements for consideration by local authorities' have then been graded in order to identify the forecast need for the implementation of the improvement measures in order to enable prioritisation in the future where necessary.

Schedule 17 of the S106 requires consultation to take place with key cycle groups and local stakeholders. A consultation workshop was held on Thursday 6 November 2014 with key local stakeholders to present the proposals and obtain feedback.

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APPENDIX A AWWC STUDY SCOPING DOCUMENT

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Brent Cross Cricklewood Regeneration

Scope of Application documents for:

Area Wide Walking and Cycling Study

August 2013

Doc. No: 47065005-TP-RPT-006



Prepared for





Area Wide Walking and Cycling Study

August 2013

Doc. No: 47065005-TP-RPT-006

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Appendices

Appendix A – Walking and Cycling Related S106 and Planning Condition
Definitions

Appendix B – Programme

Appendix C – Initial Study Areas Diagram

Appendix D – TfL / LBB Initial Scoping Comments

1 Introduction

There is a current planning consent in place for the regeneration of Brent Cross Cricklewood (BXC). This permission is subject to a detailed S106 document which includes the requirement for the Developer to agree the scope of the Phase Transport Reports (PTR), a number of Pre-Reserved Matters Studies/Submissions (Pre-RMAs) and Reserved Matter Submissions (RMAs) with the London Borough of Barnet (LBB) and Transport for London (TfL). These documents are part of a framework of control that will ensure that the BXC development is carried out in a manner which is consistent with the transport impacts forecast within the consented BXC Transport Assessment.

The S106 document sets out the requirement to provide necessary improvements to the localised transport infrastructure between the interface of the site and the surrounding communities. The relevant walking and cycling S106 and planning condition definitions are included in Appendix A of this scope. The Area Wide Walking and Cycling Study is one of the Pre-RMA's required to examine the pedestrian and cycle routes connecting the BXC site to the surrounding areas and key destinations.

In addition to the Area Wide Walking and Cycling Study, the S106 document sets out the requirement to provide a Phased Transport Reports for each Phase providing specific detail regarding the provision of pedestrian and cycling facilities within each development phase. Schedule 17 of the S106 states that one of the objectives of the PTR's, Pre-RMA's and RMA's is to ensure that a comprehensive pedestrian and cycle network is provided within the emerging BXC site, as each development phase is brought forward, and that there is satisfactory connection with the adjacent areas as the development progresses.

The relevant sections of the S106 and Planning Approval have been included in this scope in Appendix A for reference as necessary.

This scope therefore sets out the proposed methodology for carrying out the Area Wide Walking and Cycling Study in line with the scope set out in Schedule 17 of the S106.

The scope is laid out in a standard format that highlights:

Scope – list of activities

Issues Addressed – the areas addressed within each section of the report

Deliverables - documents and drawings proposed

Reference Documents – standard specification references and documents from the current consent

Interfaces – key interfaces within the consultant team, client and key stakeholders

As part of the development of this scope a technical working group has been formed by the BXC Delivery Steering Group (DSG) including attendees from TfL, LBB and URS. This working group will meet to discuss the content and assessments undertaken as part of the Study.

2 General

2.1 Basis of Scoping

2.1.1 S106 Agreement

This document has been developed based on the requirements of the Area Wide Walking and Cycling Study as described in the S106 agreement following discussions with the London Borough of Barnet (LBB) and Transport for London (TfL).

The initial feedback from TfL and LBB is attached to this scope in Appendix D, and has been incorporated into the scoping document where appropriate. As set out in the initial comments the main aspiration is to ensure that the needs of cyclists and pedestrians are considered at all spatial levels including at each junction, the bus station and the train station, as well as in the wider context of the development to ensure that the design of the development encourages, promotes and supports these modes of travel.

2.2 Proposed Scope of Area Wide Walking and Cycling Study

This section describes the scope of the Area Wide Walking and Cycling Study that will be provided in support of the above application.

The primary objective of the Area Wide Walking and Cycling Study is to record the baseline conditions for pedestrians and cyclists accessing the BXC site from the surrounding areas and key destinations. The outline application included a non-technical strategy in the second supplementary report to the consented Transport Assessment for both walking and cycling. These strategies included detailed plans for the provision of walking and cycling within the development redline boundary. It is the intention of the Area Wide Walking and Cycling Study that the area surrounding the redline boundary will be reviewed to ensure that adequate provision is made for walking and cycling permeability connecting the site to the local areas (such as Camden, Dollis Hill and Golders Green) and key destinations including Brent Cross Underground Station and Hendon Thameslink. The study will look to identify connections that are outside of the proposed red-line boundary providing access to the area within the red-line, and extend into the surrounding communities.

Following on from this, the purpose of the study is to identify potential measures and schemes which could be implemented to improve the routes/environment for pedestrians and cyclists. It should be noted that whilst some of the improvement measures set out in the Study may be identified as Supplementary Mitigation Measures (SMMs), not all improvements will necessarily be implemented through the wider BXC Development. However, this study will provide a baseline framework for the local boroughs and TfL to advise any future improvements outside of the scope of the BXC development. Those measures that are to be funded by the Development will be discussed within the Transport Advisory Group (TAG) and recommendations made to the Transport Strategy Group (TSG) for expenditure of the Consolidated Transport Fund (CTF).

The initial part of the report will review the pedestrian and cycle connections between the development site and key destinations (such as Cricklewood Town Centre and surrounding transport connections) and local residential areas (including Dollis Hill, Camden and Hendon).

It is proposed that this document will identify supplementary transport mitigation measures to better integrate the development into the wider area.

The proposed study will take into account the proposed amendments to the consented Masterplan which are developed as part of the S73 application which is to be submitted in autumn 2013.

2.2.1 The Consented BXC TA Documents

A full transport assessment for the original BXC planning application was submitted, and this was approved in October 2010. A framework travel plan was also submitted with the TA and this was also incorporated into the S106.

The list below provides a reference to the documents issued as part of the consented BXC TA, including the abbreviated references which will be used in the remainder of this document:

- | | |
|--|---------------|
| • BXC Transport Assessment, September 2008 | BXC TA |
| • BXC Transport Assessment Supplementary Report, November 2008 | TASR |
| • BXC Transport Assessment Supplementary Report II, March 2009 | TASR2 |
| <ul style="list-style-type: none"> ○ BXC Non-Technical Cycling Strategy, November 2008 ○ BXC Non-Technical Walking Strategy, November 2008 | |
| • BXC S106, October 2012 | S106 |

It is proposed that the Area Wide Walking and Cycling Study will draw on the background information and analysis provided as part of the aforementioned documents throughout. As outlined in section 1, the S106 documents sets out the requirements for this study and will therefore form an important reference document.

2.2.2 Proposed Contents of Area Wide Walking and Cycling Study

It is proposed that the following areas will be assessed and included within the Area Wide Walking and Cycling Study:

- A study area consisting of specific key destinations, residential areas and transport hubs will be defined
- Pedestrian routes connecting the site with the above key destinations and local residential areas will be identified
- Cycle routes connecting the site with the above key destinations and local residential areas will be identified
- A detailed desktop and on-site review of the above key identified pedestrian and cycle routes will be undertaken
- Identification of constraints and opportunities for pedestrian and cycle movements on identified routes
- Identification of potential improvement schemes to improve access to and/or from the BXC site with engineering feasibility as considered appropriate
- Review of the walking and cycling routes through construction and delivery of Phase 1

- Outline of a framework of good practise during the on-going construction of the wider Masterplan with regards to the maintenance of good pedestrian and cycle connections.

The main body of the study will consist of the above sections with the conclusions that have been reached based on each of these analyses. It is envisaged that this will be accompanied by a number of supporting Appendices as appropriate.

2.2.3 Policy Documents to be Reviewed and Updated

There will be a need to review and assess the latest national and pan-London transport policy and guidance with regards to the movement of, and facilities for, both pedestrian and cyclists.

It is anticipated that the documents included in the policy review will be:

- The Mayors Transport Strategy (May 2010)
- The Mayor's Vision for Cycling in London (March 2013)
- TfL's Walking Good Practice (April 2012)
- Legible London
- Pedestrian Environment Reviews System Fact Sheet
- Pedestrian Comfort Level Guidance (2010)
- Delivering the Benefits of Cycling in Outer London (February 2010)
- London Cycling Design Standards (2005).

2.3 Programme

A programme is shown in Appendix B of this scope.

3 Study Area

3.1 Scope

The proposed study area will encompass pedestrian and cycle routes connecting the BXC site to key destinations and local residential areas in the surrounding area as agreed with TfL and LBB.

It is proposed that the study area will be made up of key destinations including:

- Cricklewood Town Centre and Station
- Brent Cross Underground Station
- Hendon Central Underground Station
- Hendon Thameslink
- Willesden Green Station
- Golders Green Town Centre and Station.

In addition, routes connecting the site to the following local residential areas, as agreed with TfL and LBB as part of this scoping process:

- Dollis Hill
- Cricklewood
- Childs Hill
- Golders Green
- Hendon
- West Hendon
- Colindale
- Kilburn
- Neasden
- Temple Fortune.

A diagram showing the location of the proposed Masterplan, key destinations and local residential areas as outlined above in Appendix C of this scope.

The study area will be confirmed with TfL and LBB prior to the commencement of the detailed assessment.

3.2 Issues Addressed

1. Agreement on defined locations forming the study area and associated pedestrian and cycle routes to be included in the assessment.

3.3 Deliverables

1. Mapping showing key destinations and local areas (including plans at 1:1250)

2. Mapping showing identified proposed pedestrian routes (including plans at 1:1250)
3. Mapping showing identified proposed cycle routes (including plans at 1:1250)
4. Scaled plans and diagrams as appropriate

3.4 Reference Documents

- TA, TASR, TASR2.
- Schedule 17, BXC S106 Document
- TfL Cycle Guides Area 4

3.5 Interfaces

- Interaction with other consultants within BXC consultant team.
- Interfaces with LBB, TfL, LB Br and London Borough of Camden (LBC)
- Inputs provided to: LBB and TfL.

4 Route Review

4.1 Scope

A comprehensive desktop assessment and on-site walk-through of the identified pedestrian and cycle routes between the BXC site boundary and the destinations specified within section 3 of this scope will be undertaken.

4.1.1 Desktop Review

It is proposed that the initial route review will be a desktop review of the identified routes and areas included in the study. This review will include the use of available mapping and existing information available for the required areas.

A key part of the desktop review will be the undertaking of a qualitative review of the baseline conditions for pedestrians and cyclists to ensure that the background for the study is correct. Current data on pedestrian and cycle volumes will be reviewed as part of the desktop review where available. Any information available from the monitoring strategy work being undertaken will be utilised.

Early consultation with LBB and TfL has identified that there have been some changes with respect to policy strategies and focuses since 2008 which will impact on the study. These changes include (but are not limited to):

- Current proposals to extend Cycleway 11 to Golders Green
- Introduction of Quietways for cyclists as part of the Mayor's Vision
- Introduction of a Legible London Route from Hendon Central to Hendon University
- Introduction of the Mayor's Cycle SuperHighways
- 'Mini-Holland' proposal in west Barnet

During the desktop review, and following on-site inspections, particular attention will be paid to pedestrian links to bus stops within the identified study area.

It is anticipated that a key part of this review will include the update of Parameter Plans 002 and 003 as issued within the BXC TA. In addition to an update of the above parameter plans, new plans will be produced to advise the review as necessary.

The desktop review will culminate in the development of a detailed description of the routes, identifying potential constraints and areas for further review.

Following the completion of the initial desktop review, the relevant authorities (TfL, LBB, LBBR and LBC) will be approached to agree the proposed on-site route inspections as set out below.

4.1.2 Site Inspections

The desktop review will be followed by an on-site inspection by the URS team of the identified routes carried out on the pre-defined routes. This review will also include the existing pedestrian and cycling routes available to those accessing the site. The on-site review will both build on the information gained during the desktop review and verify that conditions on the ground are as found in the desktop review.

4.1.3 Assessment Criteria

It is proposed to use the tools used by TfL and the London boroughs to assess both pedestrian and cycling provision, namely, Pedestrian Environment Review System (PERS) and Cycling Environment Review System (CERS).

With specific regard to the review of the proposed pedestrian links, the assessment methodology will adhere to the appraisal process set out in the PERS assessment. As set out in the Schedule 17 of the S106 schedule, the aspiration for each of the routes will be to achieve a score of +3 for each link. In addition to the assessment of the links, a review of the provision of pedestrian crossing and waiting facilities will be reviewed to identify any potential shortfalls in the proposed provision.

Similarly, the proposed cycle facilities will be assessed to ensure any potential shortfalls in provision in line with the criteria set out in the CERS appraisal methodology are identified. A review of the proposed cycle links will be undertaken to ensure that any provision complies with the London Design Standards and other policy guidance as agreed with TfL and LBB.

Following both the desktop and on-site review, route descriptions will be developed to outline the physical characteristics (and where appropriate) the constraints of the assessed routes.

4.2 Issues Addressed

1. A description of routes or sections of route which may require mitigation and/or improvement

4.3 Deliverables

1. Pedestrian route commentary Plan(s), including plans at 1:1250 and study area wide plans
2. Cycling route commentary Plans(s), including plans at 1:1250 and study area wide plans
3. PERS Audits as appropriate
4. CERS Audits as appropriate.

4.4 Reference Documents

- TA, TASR, TASR2.
- Schedule 17, BXC S106 Document
- Parameter Plans 002 and 003
- Non-Technical Walking and Cycling Strategies
- Appropriate TfL/ DfT/ DDA standards and guidance on pedestrian/ cycle infrastructure
- PERS/CERS guidelines.

4.5 Interfaces

- Interaction with other consultants within BXC consultant team.
- Input required from design team including Masterplan architects

-
- Input from TfL, LBB, LBB, LBC, walking/cycling officers/local cycle groups/ mobility & visually impaired groups
 - Inputs provided to: LBB, TfL.

5 Consultation

5.1 Scope

The development of the Area Wide Walking and Cycling Study will be conducted in close liaison with TfL and LBB as advised in Schedule 17 of the S106 document. It is considered that TfL cyclist and pedestrian experts will be involved as the work progresses.

In addition to TfL and LBB it is anticipated that consultation will also be required with local cycle groups and other key stakeholders including:

- London Cycling Campaign and Cyclists Touring Club (Barnet Branch)
- Barnet Cyclists
- Brent Cyclists
- London Borough of Brent (LB Br)
- London Borough of Camden (LBC)
- London Mayor's Cycling Commissioner (if considered appropriate)

The above list is not comprehensive and will be developed and agreed with LBB and TfL through this scoping exercise.

It is proposed that the consultation exercise will start with a series of workshops to engage the relevant stakeholders at the earliest stage. These workshops will be used as a 'brainstorming session' to generate conversation with the stakeholders and to advise the study. Following the workshops, consultation will be managed accordingly to ensure that stakeholders' views are recorded within the study. As part of the workshops, URS will agree any necessary follow-up consultation requirements to ensure the appropriate way forward for addressing the issues raised within the workshops.

5.2 Issues Addressed

1. Identification of key local issues to be addressed within the assessment and best practice methods to mitigate constraints

5.3 Deliverables

1. Consultation summary within the Area Wide Walking and Cycling Study

5.4 Reference Documents

- Schedule 17, S106 Document.

5.5 Interfaces

- Interaction with other consultants within BXC consultant team
- Input required from: LBB, TfL and other stakeholders as agreed
- Inputs provided to: LBB and TfL.

6 Constraints and Opportunities

6.1 Scope

The constraints and opportunities identified within the desk top review and on-site assessment of both the pedestrian and cycle routes identified in the initial part of the study will be discussed and agreed with TfL and LBB and a final list of constraints and opportunities to be addressed will be drawn up. It is anticipated that the list of opportunities will also draw on innovative improvement measures where appropriate such as possible folding bike hire facilities and cycle hubs to ensure that a broad range of measures are incorporated into any improvement schemes.

It is proposed that the final list of constraints and opportunities improvements will be mapped to allow for ease of reference and to assist in the spatial assessment of the potential constraints to movement. The mapping will also enable a robust appreciation of the areas which may be identified for potential improvement schemes.

6.2 Issues Addressed

1. Identification of constraints to pedestrian and cycle movements to/from the key destinations and local centres to/from the BXC site
2. Provision for cycle parking in the identified areas
3. Agreement of routes or sections of routes for which mitigation/ improvement is required
4. Reference to borough proposals as applicable.

6.3 Deliverables

1. Constraints and opportunities plan of areas to be addressed (including plans at 1:1250)

6.4 Reference Documents

- TA, TASR, TASR2.
- S106 Agreement.

6.5 Interfaces

- Interaction with other consultants within BXC consultant team.
- Inputs provided to: LBB and TfL.

7 Proposed Improvement Schemes

7.1 Scope

Following on from the desktop and on-site assessment of the identified pedestrian and cycle routes and with an agreed list of constraints, potential schemes for improving pedestrian and cycle provision on these routes and on sections of these routes will be considered in order to improve accessibility and safety for pedestrians and cyclists from the surrounding areas to/from the BXC site. An outline assessment of the feasibility of the measures proposed will be undertaken to ensure that the appropriate level of provision is included within the study.

The proposed improvement schemes will be graded in order to identify the forecast need for the implementation of the improvement measures in order to enable prioritisation where necessary. It is anticipated that the grading system will provide a framework of requirements in order to assist both LBB and TfL in identifying key areas for improvements. The proposed grading of schemes will be agreed with TfL and LBB prior to the completion of the assessment.

As a matter of principal, where pedestrians and cyclists are able to go now they should be able to do so in the future, and overall severance should be reduced, permeability increased and legibility enhanced. As vulnerable road users, special care needs to be taken when providing facilities including reference to the Equality Act 2010, Crime and Disorder Act 1998 (section 17 as amended), as well as road safety, traffic and highway engineering. The routing of heavy goods vehicles, cyclists and pedestrians, particularly within the site, needs to be considered in the study.

This section will also outline a Wayfinding Strategy for the site which will set out the framework for the signing of the key pedestrian routes across the development in terms of points of departure or arrival by public transport and major attractions. These proposals will take into account any Legible London proposals in the area.

7.2 Issues Addressed

1. Potential improvements to the existing network to improve access to BXC from the surrounding area identified
2. Integration of potential mitigation improvements within proposed development.

7.3 Deliverables

1. Series of mitigation measures to improve pedestrian access with outline feasibility
2. Series of mitigation measures to improve cyclist access with outline feasibility
3. Appropriate plans at a suitable scale of mitigation measures as necessary.

7.4 Reference Documents

- TA, TASR, TASR2.
- S106 Agreement.
- Consented walking and cycling strategy
- TfL/LBB costing schedules
- Appropriate TfL/ DfT/ DDA standards and guidance on pedestrian/ cycle infrastructure.

7.5 Interfaces

- Interaction with other consultants within BXC consultant team.
- Input required from: design team, including Masterplan architects and highways engineers.
- Inputs provided to: LBB and TfL.

8 Construction and Delivery

This section will outline a framework of good practise for use during the preparation of the plans for each phase, with regards to the maintenance of good pedestrian and cycle connections throughout the construction of each phase.

The proposed construction and delivery methodology and programme will be outlined at a level consistent with the information available at the time of writing the study to demonstrate that the maintenance of a good network of walking and cycling routes has been considered in the proposed construction phasing for the wider Masterplan.

The purpose of this section is to demonstrate that the Masterplan has a framework for providing continued permeability both into, and within, the wider Masterplan area throughout the proposed construction period.

8.1 Issues Addressed

1. Delivery of walking and cycling routes throughout construction

8.2 Deliverables

1. Section of Area Wide Walking and Cycling Study Report
2. Input to the Construction Impact Assessment and the Construction Logistics Plan.

8.3 Reference Documents

- TA, TASR, TASR2
- Outline Construction programme
- 2013 Phased Masterplan.

8.4 Interfaces

- Interaction with other consultants within BXC consultant team.
- Input required from: design team including Masterplan architects, highways designers and construction consultants
- Input from TfL/LBB
- Inputs provided to: LBB, TfL.

APPENDIX A - Walking and Cycling Related S106 and Planning Condition Definitions

Extracts From the S106 Agreement

Schedule 17

THE MATRIX AND TRANSPORT REPORTS SCHEDULE

BRENT CROSS CRICKLEWOOD

TRANSPORT MATRIX AND TRANSPORT REPORT SCHEDULE

September, 2010

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SECTION 1: INTRODUCTION

1.1 This Appendix defines the operation of the Transport Matrix, Monitoring Strategy, Phase Transport Reports and Reserved Matters Transport Reports which have been agreed by the Development Partners, the London Borough of Barnet (LBB) and Transport for London (TfL) as a framework of control to ensure that the BXC development is carried out in a manner which (a) is consistent with the transport impacts forecast within and (b) meets the criteria for success defined in, the BXC Transport Assessment¹ (the “TA”) by demonstrating that the development as it proceeds will:

- i. meet policy objectives;
- ii. mitigate people movement effects through better public transport services and improvements to transport infrastructure; and
- iii. only proceed within the forecasts and assumptions as to impacts on the transport network as set out in the TA Volumes 1-4 (which expression shall include the TA Supplementary Report (November 2008) and Supplementary Report II (March 2009)).

1.2 For the scheme to be consistent with the impact predicted in the TA at all phases of the development, there should be a rigorously enforceable control mechanism preventing the development coming forward unless it reflects (to the reasonable satisfaction of LBB and TfL) the full transportation characteristics and effects of the development as generally no worse than the impacts forecast in the TA. To facilitate the operation of the control mechanisms, this will need to include the following:

- a) a monitoring strategy that measures all trips generated by the development (as well as travel behaviour) such as development traffic, construction traffic and the impact of overlapping phases on the public highway and public transport networks;

¹ The term “TA” includes the Transport Assessment (BXC 05 - September 2008) submitted in support of the BXC planning applications together with the Transport Assessment Supplementary Reports submitted in November 2008 and March 2009, and updated Road Safety Audits and List of Errata Rev 4 submitted 2nd July 2009.

- b) an appraisal methodology that uses best available up to date BXC data from the monitoring strategy at the time of that assessment;
- c) a report for the relevant phase or, where appropriate, the relevant reserved matters application which responds to benchmarks as defined in this Appendix to ensure that the development continues to behave in accordance with the transport characteristics forecast in the TA;
- d) a mechanism to ensure that the transport investments being made by the Developers are appropriately integrated into the surrounding transport network satisfactorily for all modes – this will require studies to be undertaken of defined transport corridors and areas which properly connect the development to the wider transport network;
- e) a means of ensuring that full account is taken of transport issues and a comprehensive pedestrian and cycle network is provided within the site and connecting to adjacent areas as the development progresses.

1.3 Specific objectives for the Transport Matrix, Corridor and Area Studies and the Transport Reports have been defined by TfL and the LBB and relate the London Plan to the development proposal, as follows:-

- i. *matching development phases to overall transport capacity (policy 3C.2);*
- ii. *to provide an assessment tool that monitors the achievement of the sustainable transport objectives set out in the Framework Travel Plan and ensures that the impacts of the Development (measured in trips) as it proceeds are within the forecast levels as represented by the Benchmarks defined in this Appendix (policy A.1 and policy 3C.3);*
- iii. *ensure land is made available by the applicant for the transport needs of the scheme and ensure that the transport network provided can service the site (policy 3C.4);*
- iv. *ensure that the transport corridors that serve the site are improved by the Developer to mitigate the impact of the development, to support improvements to network performance and sustainable transport objectives (policy 3C.16);*

- v. *ensure public transport facilities are upgraded alongside service enhancements which are to be funded by the applicants and to be provided in collaboration with Network Rail, TfL or appropriate other transport providers (policy 3C.19 and 3C.20);*
- vi. *promote the safety of all transport users, in particular pedestrians, cyclists, disabled people, public transport, freight and business (policy 3C.21, 3C.22, 3C.25 and 3C.26);*
- vii. *help to mitigate the impacts of the development on the transport network (policy 3C.2 and 3C.3);*
- viii. *ensure no over provision of parking supply at any phase of the development and that car parking provision is made consistently with the objectives in the TA to achieve enhanced mode shares for non-car modes (policy 3C.23 and 3C.24).*

1.4 This Appendix explains how the Transport Matrix, A5 Corridor Study, Area Wide Walking & Cycling Study, Phase and Reserved Matters Transport Reports will help to meet these shared objectives, in accordance with the provisions which it is proposed will be contained in the planning conditions and the associated Initial Planning Agreement.

SECTION 2: A FRAMEWORK OF CONTROL

a) Summary of Controls

2.1 The measures which are described in this Appendix form part of a wider framework of controls which it is intended will be contained within the planning conditions and the associated Initial Planning Agreement in relation to transport matters. These include:-

- i. provision for residential car parking to reduce over time on a sliding scale from a ratio of 1:1 in the Primary Development Package (PDP) down to 0.7 with the precise level to be set out in each Phase Transport Report (PTR) (parking strategy / demand management section) – this may include a proportion of car free housing with the agreement of the planning authority;
- ii. charging for retail, office, residential and on street car parking, save for special needs requirements (such as disabled);
- iii. walking and cycling network that properly connects the development within a phase or sub-phase or reserved matters application to the surrounding areas of the site and the wider network at each phase of the development and in accordance with the A5 Corridor Study, Gateway junction designs and Area Wide Walking and Cycling Study;
- iv. a Framework Travel Plan which sets objectives for a progressive enhancement of mode split towards public transport, reinforced by continuous monitoring and by a requirement for Individual Travel Plans (ITPs) for each plot development;
- v. the appointment of a Travel Plan Co-ordinator (TPC) and a Construction Traffic Management Officer (to be approved by LBB and TfL) to co-ordinate and enforce compliance with the transport obligations;

- vi. as part of the Consolidated Transport Fund provision of bus stop improvements (compliant with TfL guidance and DDA requirements) within 400 metres of the application boundary, provision is also made, beyond the consolidated Transport Fund, toward mitigating the construction impact on the bus network and provision of a bus subsidy;
- vii. a Contingency Transport Fund (within the Consolidated Transport Fund) to be potentially spent by the authorities on a wide range of detailed mitigation measures that respond to any unpredicted circumstances and to enhance the transport performance of the development;
- viii. a contribution towards improving the corridors outside the development, specifically the A5, and pedestrian and cycle routes, including the reasonable and proper costs of any detailed mitigation measures which are found to be necessary by the A5 Corridor Study and the Area Wide Walking and Cycling Study;
- ix. the establishment of a Transport Advisory Group, drawn from the principal stakeholders to receive output from monitoring and to liaise and advise on the evolving implementation of the transport strategy, as the development proceeds; and
- x. provision of on street parking controls through the progressive implementation of the development and the extension of existing or introduction of new off site parking zones as reasonably necessary, in accordance with the Initial Planning Agreement.

2.2 In addition to these measures, the planning application defines a series of infrastructure investments (priced in excess of £400 million) which are to be delivered as the development proceeds in accordance with detailed Delivery Programmes which will be consistent with the parameters and principles as to sequencing of operations for the delivery of Critical Infrastructure as set out in the Indicative Construction Programme. The delivery of critical infrastructure is also linked to defined triggers and Grampian conditions/obligations proposed to ensure that the infrastructure item is provided prior to the opening or occupation of specific floorspace or elements of the development.

- 2.3 The PTR would be required to explain and justify, as appropriate, the proposed physical layout of the transport infrastructure and proposals for its phased implementation, including primary and secondary roads, pedestrian and cycle routes, bus routes and infrastructure, other public transport infrastructure and services, freight and servicing arrangements, proposed level and location of cycle and car parking.
- 2.4 A generic scope for the PTRs is contained in Annex 5, together with the scope of the Reserved Matter Transport Reports (RMTR). The final scope (which shall be within the terms of the generic scope) for each PTR and RMTR will be agreed with LBB and (for certain matters covered by the Town & Country Planning (Mayor of London) Order 2000 and which are likely to have a significant impact on the Strategic Transport Network in respect of RMTRs insofar as these have not already been covered in approved PTR) TfL to allow appropriate specific issues to be considered.
- 2.5 The detailed scope of transport monitoring is set out in Annex 6. For the avoidance of doubt, monitoring will be carried out on trips with an origin or destination within the BXC development site and will allow the authorities to assess whether the impact of development trips are similar to the impact assessed in the TA on the transport network, taking account of 2026 end state, various sensitivity tests and Primary Development Package (PDP) assessments.
- 2.6 In considering the appropriate level of residential and other car parking regard shall be had to the following:-
- i. the need to achieve the progression toward the end state mode share target set out in the TA and the Transport Matrix;
 - ii. the need to ensure that the viability of development is not unnecessarily constrained by parking limitations and/or traffic congestion;
 - iii. the role of car parking charges, car parking management and car club/car sharing and provision for electric cars;
 - iv the capacity of strategic and local transport networks;
 - v. the need to achieve a high quality, sustainable development;

- vi. Public Transport Accessibility Levels (PTAL).
- vii In respect of residential car parking the aim to provide lower than the maximum car parking standards in condition 38.2 so that the level of car parking will be constrained which is likely to allow low car and car free development in areas of high public transport accessibility; and
- viii The need to have regard to changes in adopted planning policy and best practice as appropriate.

2.7 Against this background more detail is set out in the following sections on the proposed operation of the Transport Matrix, the Corridor and Area Studies and the PTR and RMTRs.

SECTION 3: TRANSPORT MATRIX

- 3.1 The Transport Matrix must demonstrate, on a Phase by Phase and/or Sub-Phase by Sub-Phase basis, that the proposed development will continue to operate in accordance with the impact predicted within the BXC TA. A robust mechanism is proposed which would ensure that:
- the development will at each Phase or Sub-Phase demonstrate progress toward the end state mode share consistent with the objectives set in the Framework Travel Plan;
 - the development will in no Phase or Sub-Phase impose demands or impacts on the transport network which are greater than those assessed in the BXC TA; and
 - transport infrastructure will be provided that caters for the needs of the development and is in accordance with gateway junction designs (which will be informed by the outcome of the A5 Corridor Study and Area Wide Walking and Cycling Study).
- 3.2 The Transport Matrix is a spreadsheet based assessment based on the predictions in the BXC TA and end state target in the Framework Travel Plan, which must be undertaken by the Development Partners and approved by LBB and TfL prior to the submission of the each PTR. The Transport Matrix will inform the final scope of the PTR. Where the set benchmarks (discussed below) are exceeded during the completion of the Matrix, those issues will be considered and addressed within the PTR. As such, the submission of the Transport Matrix will be accompanied by the proposed scope of the PTR which shall be agreed by LBB and TfL as providing sufficient information to demonstrate that the Benchmarks are fulfilled before a Phase Transport Report may be submitted.
- 3.3 If the Transport Matrix demonstrates that the development is unlikely to meet the benchmarks in Table 3.1 (the narrative for which are set out in Annex 3) or that the Phase or Sub-Phase in question is likely to have impacts which are worse than predicted in the BXC TA then one or more of the following actions would need to be proposed by the Development Partners and approved by LBB and TfL as part of the PTR:-

1. to demonstrate that the deviation is within acceptable bounds across all of the benchmarks, acknowledging that variation will be acceptable, unless the variance is so adversely significant such that a new planning application or Transport Assessment would be required. For example, overall traffic generation is much lower even though mode target is not fully achieved and that as a result the impacts on the transport network are within acceptable limits.
 2. alternative or additional demand management measures to mitigate the impacts so that they fall within the forecast (or otherwise acceptable) levels. For example, reduced car parking supply or additional incentives to cycle, walk or use public transport.
 3. variation of timing of committed transport infrastructure and service improvements. For example, earlier delivery of new bus services.
 4. additional transport infrastructure and service improvements. For example, traffic management measures on approaches to gateway junctions.
 5. submit a revised planning application with a new Transport Assessment.
- 3.4 The Development Partners will keep available the BXC Transport Model, or to use such other model as may be agreed by the Development Partners, LBB and TfL, together with relevant monitoring information, necessary to inform future decisions in the context of bullets points 2-5 above. The Development Partners' detailed proposals for any appropriate modelling tools that are required in the circumstances at the time, shall be submitted to LBB and TfL for approval prior to submission of the relevant PTR and the relevant PTR shall be based on such details as so approved.

- 3.5 The benchmarks are related to predictions in the BXC TA and current development quantum. The purpose of the benchmarks is to assess whether the local transport and strategic networks are performing as forecast in the TA and whether any additional impact is being or likely to be caused by the development. The long term forecasting of transport impact is subject to variability. Therefore, it is intended that these benchmarks should not be used as definitive tests but they shall be considered with potential variances and these shall be taken into account in scoping the Phase Transport Reports, unless the variation is so adversely significant such that a new planning application and Transport Assessment is required. Appendix 1 contains a table which illustrates the headings and approach of the Transport Matrix. Appendix 2 contains a series of work sheets, with written narratives in Annex 3, which describe and define the Benchmarks for each heading within the Transport Matrix. The structure and content of the Transport Matrix is summarised as follows:-

Table 3.1 – Details of the BXC Transport Matrix

T1	Introduction.	
T2 – T10	Details of Development Quantum – does the proposed Phase and RMA floorspace fall within the land use and locational parameters set out in RDSF Appendix 5?	Compliance or Non-Compliance
T11 – T19	Total Number of Development Trips (excluding any allowance for trips from existing land uses that may be replaced) - does the trip rate based on monitoring of occupied floorspace within the BXC development indicate that more trips will be generated by the the floorspace proposed within the Phase or Sub-Phase, and cumulatively overall, than the trip rates assumed in the TA?	If the cumulative BXC trip generation of all uses within a phase or sub-phase, and cumulatively overall, based on monitoring, is likely to be greater than that based on TA trip rates, then the issue will be considered and addressed in the PTR.
T20 – T22	Total Trip Generation by Mode – Using any monitoring information obtained to date and the forecasts for the next proposed Phase or Sub-Phase of the development, is the BXC weekday mode share of trips by car consistent with the objectives set out in worksheets for this stage of the development?	If the proportion of BXC trips by car during the weekday is likely to be more than the percentage predicted in the work sheets, then the issue will be considered and addressed in the PTR. This Benchmark also takes account of (average) car occupancy benchmarks: AM: 1.3 people per car PM: 1.48 people per car Saturday: 1.62 people per car

T23	<p>Mitigation and Triggers – have the defined items of infrastructure come forward in accordance with or before the triggers defined in work sheets T23 and set out in greater detail in the RDSF at Appendix 7 (and incorporated into the planning conditions in the Permission), having regard to the quantum of floorspace approved and now additionally applied for?</p> <p>Is the relevant programme for delivery of Critical Infrastructure in the relevant Phase or Sub-Phase consistent with a) the Indicative Construction Programme (as it may have been updated with the requisite approval of the Council) and b) the relevant approved Detailed Delivery Programme.</p>	Compliance or Non-Compliance.
T24	<p>Gateway Junction Demand – using the trip generation and mode share information above, is the BXC development forecast to generate a greater number of trips at the gateway junctions in the weekday, am, pm or Saturday peak hours than work sheet T24 indicate would have been anticipated for the development so far approved and additionally now proposed?</p>	If the number of BXC passenger car unit trips passing through any gateway junction is more than the number predicted by the worksheets, then the issue will be considered and addressed in the PTR or (as appropriate) RMTR and/or detailed engineering design for the S.278 Agreement.
T25	<p>Construction Traffic – having regard to monitoring information and forecasts for the next proposed stage of development, does the number of construction vehicle movements generated by the development and passing through the gateway junctions conform with that anticipated by the work sheets?</p>	If the number of BXC related construction vehicle movements passing through these junctions is forecast to be more than the maximum peak hour movements predicted in the work sheets, then the issue will be considered and addressed in the PTR or (as appropriate) RMTR and/or detailed engineering design for the S.278 Agreement.

- 3.6 It will be for the Development Partners to demonstrate to LBB and TfL, through the use of the Transport Matrix, that the assumptions and forecasts in the TA are met, having regard to the benchmarks and parameters set out above before any PTR or RMTR is submitted for approval (provided that in respect of RMTRs, TfL's approval will only be required for certain matters covered by the Town & Country Planning (Mayor of London) Order 2000 and which are likely to have significant impact on the Strategic Transport Network).

- 3.7 Once a Transport Matrix (and scope for the PTR) has been approved for a Phase the relevant developer may proceed to submit substantive PTRs, and (subject to having obtained approval to the relevant PTR) Reserved Matter Applications supported by a RMTR, as necessary, if and to the extent that these are consistent with the outcomes of the approved Transport Matrix.

SECTION 4: TRANSPORT REPORTS AND CORRIDOR STUDIES

a) Transport Reports

- 4.1 PTRs are required to be submitted and approved by LBB and TfL in respect of any Phase or Sub-Phase prior to the submission of any Reserved Matters Application (and accompanying RMTR) for any part of the Development within such Phase or Sub-Phase. RMTR shall be submitted for approval by LBB and (for certain matters covered by the Town & Country Planning (Mayor of London) Order 2000 and which are likely to have significant impact on the Strategic Transport Network in respect of RMTRs – see above) TfL only after the relevant PTR has been approved and the content and scope of such RMTRs shall be fully consistent with the relevant approved PTR.
- 4.2 Annex 5 to this Appendix comprises a document explaining the generic scope of the PTRs and RMTRs. The final scope of the PTRs (which shall be within the terms of the generic scope) will be approved by TfL and LBB under the planning conditions and obligations, and will be informed by the relevant Transport Matrix. Those benchmarks in the Transport Matrix which exceed the forecast figures in the TA shall be considered and addressed in the PTR. The final PTR scope for approval shall be submitted simultaneously with the relevant Transport Matrix.
- 4.3 In summary, the principal matters that will fall to be considered in the PTR and RMTR are as follows:-
- i. the scale of development proposed in the relevant Phase, Sub-Phase or RMA or relevant Other Matters Application in which transport impacts may reasonably need to be considered and the cumulative scale of development taking into account that which may have already been approved as part of the BXC regeneration;

- ii. the detailed design of transport infrastructure forming part of the relevant Phase, Sub-Phase or RMA, including the internal highway network, pedestrian and cycle provision, on-street parking management measures if appropriate; public realm and public transport services and facilities and how these will integrate with the wider network, having regard to the framework of transport infrastructure approved in the PTR;
- iii. the appropriate off-street parking strategy for the relevant Phase, Sub-Phase or Plot(s) and proposed improvements to site accessibility via sustainable modes of travel, if and to the extent that these are not already settled in the approved PTR;
- iv. the appropriateness of the transport infrastructure proposed in the RMA having regard to both the existing and forecast BXC trip generation and the terms of the approved PTR;
- v. provision for the cumulative impacts of all BXC development approved, under way or applied for (including construction, delivery and servicing traffic) across all transport modes and at all junctions and links within the development site;
- vi. a clear statement as to the assumptions as to the programming and delivery of the Critical Infrastructure in relevant Phase or Sub-Phase or Plot Development in accordance with the approved detailed delivery programme.

4.4 The PTR and RMTR shall report comprehensively on all relevant detailed transport issues raised by the RMA and shall demonstrate the acceptability of the proposals contained within the relevant Phase or RMA, consistent with the terms of the outline planning permission and (in the case of an RMTR) the approved PTR. The final scope and specification for each Transport Report (which shall be within the terms of the generic scope and have regard to the completed Transport Matrix) will need to be approved by the LPA and (in the case of Phase Transport Reports) TfL. In this way, the PTRs and the RMTRs will complement and be fully consistent with the strategic assessment reported in the BXC TA, the findings of the Transport Matrix and (in the case of the RMTRs) the matters settled in the approved PTR.

- 4.5 The Transport Matrix, the PTRs and the RMTRs will operate alongside and in conjunction with the separate but related mechanisms under the planning permission and the planning obligations including the Transport Advisory Group, the Consolidated Transport Fund, the operation of the Framework Travel Plan and the Travel Plan Co-ordinator. The PTR and RMTR will be required to take full account of, and to implement the initiatives set out in the A5 Corridor Study and the Walking and Cycling Study and the approved Servicing and Delivery Strategies insofar as they are relevant.

b) Corridor & Area Studies

- 4.6 As part of the consideration of the BXC proposals, the authorities have required the applicant to commit to necessary improvements to the localised transport infrastructure between the interface of the site and the surrounding communities and to determine what these improvements should be by carrying out corridor and area studies. The A5 Corridor Study will provide information to inform the detailed design process. It is intended that these will be dealt with in the planning conditions and the Initial Planning Agreement.
- 4.7 The A5 Corridor Study will be carried before the development commences. This will be required to be addressed in the relevant PTR(s).
- 4.8 The A5 Corridor Study will have the following scope set out in Annex 7.
- 4.9 The detailed approach to modelling for the purposes of the A5 Corridor Study will be agreed with Brent and Barnet Borough Councils, and TfL before it is undertaken. In principle, however, it is proposed that the existing BXC strategic transport model should be used as the basis for constructing a more specific local model. Using the existing model will retain the fundamental traffic assumptions inherent within the TA.
- 4.10 It is proposed that a VISSIM micro-simulation model is formed based on the area defined in Annex 7. The aim will be to cordon out the A5 area from the strategic BXC model and then introduce the modelling of more localised junctions and movements into the analysis.

Scope of Phase Transport Reports and Reserved Matters Transport Reports

A1 Introduction

The Transport Assessment (TA), which has been prepared to support the BXC application, assesses the transport impacts at the completion date of 2026, although an intermediate analysis at the end of the Primary Development Package (PDP) (2016) has also been provided. A Framework Travel Plan (FTP) is submitted alongside the TA, which sets out a framework for the submission of travel plans at a detailed design stage, which will influence the future operation of individual parcels of the development.

Given the large physical scale of the development and the anticipated timescale for its implementation, a tiered approach to transport assessment is proposed, as follows:-

1. The grant of outline planning consent will contain a series of conditions and obligations regulating the performance of the development within a clear set of parameters and controls. The outline planning consent will establish, in principle, the acceptability of the development in transport terms and will contain the obligations which define the commitments to the mitigation of its transport effects;
2. The BXC development is divided into 7 indicative phases, which are shown on Parameter Plan 029. Prior to the submission of reserved matters applications within any phase, the outline planning permission will require the applicants to submit for approval proposals for the general location of key roads, public transport services and infrastructure and pedestrians/cycle routes, public realm and principal open spaces within each phase. To accompany each submission, the applicants will be required to produce a Phased Transport Report;
3. The detail of development (including buildings and transport infrastructure) will need to be the subject of Reserved Matters Applications (RMAs). Each substantive RMA (defined for these purposes as a RMA which either brings forward specific transport infrastructure or which proposes more than 20,000 sqm of built floorspace) will need to be accompanied by a Reserved Matters Transport Report (RMTR).

This annex describes the scope of the PTRs and the RMTRs.

A2 Phase Transport Reports (PTRs)

A PTR will be required to support each submission for the phased development of BXC required by the Permission and Initial Planning Agreement. Essentially, these are Transport Masterplans for each phase. Each PTR should set out and address the transport issues relating to the proposed phase of development, having regard to the principles established in the Permission and recognising that the detailed design of transport infrastructure is a matter that will be addressed in subsequent reserved

matters applications. The PTR will also have regard to any of the Transport Matrix benchmarks which have been identified exceedances compared to the forecasts within the BXC TA. It is acknowledged that some variation in these benchmarks forecasts will be acceptable, unless the variances are so adversely significant that a fresh planning application or TA would be required. The PTR will consider these issues and demonstrate its acceptability.

The purpose of the phase submission required by Section 6 of the RDSF is to establish a coherent framework within which the development of the phase can be rolled out. Where appropriate, a degree of flexibility will need to be retained at the phase stage in recognition of the fact that detailed proposals for subsequent building plots will need to be able to respond to the precise requirements of market and occupier demand. Nevertheless, it is important to establish at the phase stage the necessary principles which ensure that the phase can be developed acceptably and consistently with the parameters and principles set out in the RDSF.

Against this background, the PTR will be required to address the following headings.

A2.1 Study Area

The applicant shall establish a Study Area which is relevant and appropriate to the PTR in question. In addition to the area of the phase itself, this Study Area shall represent a zone of influence within which it is necessary to understand transport infrastructure, transport connections and transport conditions in order to make rational judgements about transport proposals for the phase itself.

The study Area may be larger than the BXC application site itself where necessary but, in drawing up the boundary, it should be recognised that :-

- The geometric layout of the gateway junctions have already been designed and approved in detail as part of the BXC planning permission;
- The applicants monitoring commitment extends only to monitoring trips with an origin or destination within the BXC development (but, for the avoidance of doubt, the Transport Report will take account of the background growth on the network as forecast in the TA); and
- Appropriate corridors are the subject of separate studies.

The Study Area will be agreed with the highway authorities prior to the submission of the Phased Transport Report.

A2.2 Existing Conditions

The applicant shall provide a full description of:

- existing site information – describing the current physical infrastructure and characteristics of the phase and its defined Study Area
- baseline transport data – available published background transport data and current transport infrastructure details within the Study Area;

This information should be accurately established to understand the context of the phase proposal. The description should include as a minimum:

A2.3 Existing site information

- a site location plan that shows the proposed phase in relation to the surrounding area and transport system;
- relevant permitted and existing use of the Study Area;
- whether the location of the phase is within or near a designated Air Quality Management Area (AQMA);

A2.4 Baseline transport data

- a qualitative description of the travel characteristics of the Study Area, including pedestrian and cyclist facilities;
- any relevant quantitative data obtained from monitoring undertaken to date, the overall scope of which is set out in Annex 6;
- existing public transport provision, including provision/frequency of services, capacity, location of bus stops/train stations, park-and-ride facilities;
- a description and functional classification of the highway network in the Study Area;
- an analysis of the injury accident records on the public highway in the Study Area for the most recent three-year period, or five-year period if the area has been identified as within a high accident area
- the PTAL characteristics of the study area.

A2.5 Proposed Development

The PTR should provide a full description of the proposals for the phase in so far as they are known at the time of the PTR including, as a minimum (but where necessary identifying limits of deviation)

- plans and drawings showing the proposed phase layout, particularly the general location of primary and secondary roads and related pedestrian and cycle routes as well as principal open spaces across the phase – the layout will need to be consistent with the Parameter Plans;
- the proposed distribution of land uses across the phase;
- the scale of development, such as numbers of residential units and/or gross floor area (GFA), subdivided by land use where appropriate;
- a masterplan layout of the proposed phase;
- the person-trip generation of the proposed phase development and the forecast distribution of trips across modes;
- a qualitative and quantitative description (based on recent site observations) of the principal travel characteristics of the proposed development, including pedestrian and cyclist facilities/movements;
- proposed improvements to phase accessibility via sustainable modes of travel, such as provision/enhancement of footpath and cycle path linkages, public transport improvements and servicing arrangements where appropriate;

- proposed parking ratios and number by land use for the phase, including where appropriate, proposed ratios for residential parking and the principles relevant to that phase from the approved Car Park Management Strategy;
- the principal requirements of site construction for the phase, including the requirements of abnormal loads in the construction, use and decommissioning the present development;
- an assessment and justification of the scale and extent of the transport infrastructure proposed for the phase having regard to the scale of trips forecast to be generated by the BXC development;
- a proposed cycle/pedestrian strategy for the phase, having regard to the conclusions of the Area Wide Walking & Cycling Study and demonstrating connectivity to existing and newly completed surrounding routes;
- principles for the phased introduction of transport related Critical Infrastructure to the phase and programming in question, which are consistent with the sequencing and approximate duration of operations as set out in the Indicative Construction Programme (ICP) as attached to the Environmental Statement or as varied by planning condition. These details will be used within the relevant Detailed Delivery Programme to be submitted to the LPA for approval under the planning conditions;
- a strategy for any demand management measures or transport mitigation measures proposed for the phase consistent with the BXC planning permission.
- Public transport service and infrastructure improvements relevant to that phase;
- Phase related measures from the Framework Servicing and Delivery Strategy;
- a commentary on how the transport characteristics forecast for the Study Area are appropriate for that phase and how these relate to the end state;
- identify and address any benchmarks which were exceeded when compared to the forecasts in the BXC TA during the completion of the relevant Transport Matrix. In such instances the PTR will need to demonstrate that the variance is within acceptable bounds and has no significant adverse impact on the transport network as a result of the development;
- the Developers will undertake periodic peak hour surveys of the bus and underground patronage generated by the development as the development unfolds, and this data will be assessed as part of the PTR to compare actual patronage with the patronage forecasts contained in the TA. Then, any measures necessary to address significant variations will be agreed with TfL and LBB. If the patronage is significantly less than the forecasts and/or the mode split progression is less than that shown in the FTP then the Development Partners shall implement further measures set out in the FTP to promote more bus use and/or consider other options as may be appropriate.;

- as a result of monitoring information consider whether bus journey times on corridors within the application site are consistent with that assumed in the TA, save that some variation will be acceptable where it does not have a significant adverse impact on the transport network.

A2.6 Gateway Junctions

In determining the specific scope of a PTR consideration shall be had to the need to include one or more of the Gateway Junctions. Monitoring information and the potential impact of the prospective next phase of development shall consider congestion and queue lengths compared to that predicted in the BXC TA. The PTR, assisted by monitoring, shall identify whether any such congestion is directly as a result of BXC related trips or non development related actions. It is acknowledged that the development does not need to take account of background growth on the network (beyond that assumed in the BXC TA) and furthermore that some variance will be considered acceptable where there is no significant adverse impact on the transport network as a result of the BXC development.

It shall be within the legitimate scope of a PTR to consider whether up to date information at that time requires particular Gateway Junctions to be studied as part of the PTR. If such study is necessary, it will be appropriate for the PTR to consider whether detailed proposals for the relevant junction contained within the planning application need to be refined or even redesigned prior to their implementation. Any necessary measures of refinement or redesign will be agreed with the Borough Council (and highway authorities as part of the S.278 process) – provided always that the liability of the Development Partners for any cost for works to the relevant Gateway Junction is limited to the equivalent cost of the proposals set out in the BXC planning application for that junction, ie that attributable to BXC travel demand, which will be controlled and limited to that assessed in the BXC application documents through the operation of other Matrix benchmarks.

The purpose of this provision within the scope of the PTRs is to recognize that circumstances on the wider network may have changed by the time the particular junction comes to be implemented, as a consequence of matters outside the control of the Development Partners.

A3 Proposed Contents of Reserved Matters Transport Reports

Each RMTR should set out the transport issues relating to the proposed development site (existing conditions) and details of the development proposals (proposed development). The applicants recognise that it would be good practice to agree a scope for each report prior to its preparation and this is required in the planning conditions. The scope in each case will need to be consistent with the terms of this annex and the framework established in this document and by the terms of the BXC planning permission.

A3.1 Existing Conditions

The developer should provide a full description of:-

Extracts From the Planning Conditions

Definitions:

“Matrix” means the Matrix to be prepared and submitted to the LPA and TfL by the Developer in accordance with the Matrix and Transport Reports Schedule and approved as part of the Transport Scope and Specification Approval in relation to each Phase Transport Report and/or any Reserved Matters Transport Report in accordance with Condition 37.1 and paragraph 2 of Schedule 3 to the Initial Planning Agreement;

“Pedestrian and Cycle Strategy” means the phase-by-phase strategy submitted and approved in accordance with Condition 2.8 of this Permission and setting out the quantum, programme and details of pedestrian and cycle links to be provided within the relevant Phase of the Development in a way which is in accordance with the Area Wide Walking and Cycling Study and the Phase Transport Report;

“Phase Car Parking Strategy” means the Phase Car Parking Strategy for the relevant Phase or Phases as approved in accordance with Condition 11.2 of this Permission and having due regard to the Phase Transport Report approved in accordance with Condition 37 of this Permission.

“Phase Parking Standards” means the relevant parking standards to be approved under Condition 11.2 and having due regard to the Phase Transport Report approved in accordance with Condition 37 of this Permission in accordance with the parameters and principles set out in paragraph 2.40 – 2.43 and Table 4 of the DSF) as varied or modified from time to time for any particular Phase or for all Phases in order to achieve the relevant Network Performance Outcome in applying the relevant approved Matrix and/or Transport Report in accordance with Condition 37;

“Phase Transport Report” means the Transport Report relating to the whole of a Phase or Sub-Phase to be submitted and approved in accordance with Condition 37 prior to the commencement of the Development in any Phase or Sub-Phase, such Phase Transport Report to be prepared in accordance with the Matrix and Transport Report Schedule and comply with the relevant Transport Report Scope and Specification Approval

“Transport Report” means (as the context requires) any relevant Phase Transport Report or Reserved Matters Transport Report and “Transport Reports” shall mean more than one of any such reports as the case may require the general scope for which is set out in the Matrix and Transport Reports Schedule and the specific scope and specification of which shall be as approved in the Transport Report Scope and Specification Approval;

2. Reserved Matters Applications and Other Matters Applications–Reconciliation Mechanism

2.1. No Reserved Matters Application or Other Matters Application shall be submitted in relation to any Phase or Sub-Phase or Plot of the Development unless it is accompanied by the documents listed below insofar as they may be relevant or are reasonably required by the LPA in considering such application and shall be approved by the LPA as part of the Reserved Matters Approval or Other Matters Approval in accordance with the Reconciliation Mechanism described in Section 6 of the DSF, unless and to the extent that the LPA considers and confirms in writing that such submission of any of such documents is not necessary. The documents which this Condition requires are:

e) Access

(ii) a statement to demonstrate that any car parking to be provided under the Reserved Matters Application or Other Matters Application conforms to the relevant Phase Car

Parking Strategy and the Phase Parking Standards approved under Condition 11.2 and the standards set out in Condition 38.2 (as reviewed in the relevant Transport Reports, if and to the extent that it may be appropriate under Condition 37 in accordance with the relevant Transport Reports), and/or, in the case of residential buildings, will meet the overall reducing targets for car parking provision set out in Condition 38.2 (and any adjustments to those standards contained in that Condition as required in accordance with the relevant Phase Transport Report and/or Reserved Matters Transport Report under Condition 37);

5. Detailed Delivery Programmes

5.4. Not to resume carrying out the Development following any suspension in accordance with the provisions set out in paragraph 2 of Schedule 2 to the Initial Planning Agreement unless and until:

5.4.2. if and to the extent that the programme assumptions in any Phase Transport Reports which were approved prior to such suspension of the Development have been superseded or rendered invalid as a result of the suspension) the Developers shall have obtained the LPA's approval (in accordance with Condition 37) any relevant Phase Transport Reports and/or Reserved Matters Transport Reports relating to such revised Primary Development Delivery Programme and/or a Detailed Delivery (Non PDP) Programme on the basis that the restrictions contained in Conditions 37.2 and 37.5 shall apply so as also to prevent the resumption of the Development following suspension under Paragraph 2 as well as to any further Reserved Matters Applications or Other Matters Applications.

Reason: To ensure that (in the event of resumption after suspension of the Development in accordance with the provisions of the Initial Planning Agreement) the Development is delivered in accordance with the assumptions which underpin the EIA relating to the Development and to comply with the relevant planning policies requiring the delivery of comprehensive development across the whole of the Site.

8. Code of Construction Practice and Construction Environmental Management Plans

8.4. (Subject to compliance with Conditions 35.3, 35.4 and 35.6) not to Commence Phase 1 of the Development unless and until the proposed construction access for the Waste Handling Facility and the CHP/CCHP respectively shall have been submitted to and approved by the LPA and such access shall demonstrate that construction access to the relevant Plots for these elements of Phase 1 Critical Infrastructure (by reference to the Transport Assessment the Revised Environmental Assessment and the Phase Transport Report for Phase 1) that there are no likely unassessed traffic or environmental impacts caused by construction traffic associated with the construction of such facilities and associated works. Access to these Plots during the construction of these facilities and the carrying out of associated works shall be in accordance with the arrangements approved in accordance with this Condition.

Reason: To ensure that the construction traffic associated with the construction of the Waste Handling Facility and the CHP/CCHP and associated works do not cause unacceptable impacts on the transport network or the environment and local amenity.

37. Matrix and Transport Reports

37.1. Not to submit any Transport Report without first submitting to the LPA for approval (in consultation with TfL) the Matrix and the proposed specification and scope in respect of the relevant Transport Report (including for the avoidance of doubt the Area of Concern for the relevant Transport Report) in accordance with the parameters and principles set out in the Matrix and Transport Reports Schedule and thereafter the relevant Transport Report shall be prepared in accordance with such Transport Report Scope and Specification Approval;

Reason: in order to ensure that the transport impacts of the Development as it proceeds are at all times consistent with the assessment in the Transport Assessment.

37.2. Not to submit any Reserved Matters Application or any Other Matters Application in relation to any Site Engineering and Preparation Works or Building or Bridge Structure in relation to any Phase or Sub-Phase unless and until the Phase Transport Report shall have been approved by the LPA in accordance with this Condition;

Reason: to ensure the transport impacts of each development phase are appropriately mitigated in accordance with the TA.

37.3. No Transport Report shall be submitted unless and until the LPA shall (in response to a written application therefor submitted by a relevant Matrix) have issued its Transport Scope and Specification Approval in respect of such Transport Report in accordance with the details and arrangements set out in the Matrix and Transport Reports Schedule;

Reason: to ensure the transport impacts of the scheme are appropriately mitigated in accordance with the TA.

37.4. The Transport Report for any Phase or Sub-Phase shall be prepared and submitted to the LPA and TfL in accordance with the Transport Report Scope and Specification Approval and the arrangements and details set out in the Matrix and Transport Reports Schedule;

Reason: to ensure the Transport Report is prepared in a consistent manner as agreed with the LPA.

37.5. No Reserved Matters Application in relation to Plot Development shall be approved unless and until the LPA shall first have received and approved a Reserved Matters Transport Report in respect of the Plot Development to which the relevant Reserved Matters Application relates;

Reason: to ensure the transport impacts of the scheme are appropriately mitigated in accordance with the TA.

37.6. The Reserved Matters Transport Report shall be prepared and submitted to the LPA and TfL in accordance with the Transport Report Scope and Specification Approval and the arrangements and details set out in the Matrix and Transport Reports Schedule and shall also be consistent with the relevant details of the approved Phase Transport Report for the Phase in which the relevant Plot Development is included;

Reason: to ensure the Reserved Matters Transport Report is prepared in a consistent manner as agreed with the LPA in order to ensure that the transport impacts of the Development as it proceeds are at all times consistent with the assessment in the Transport Assessment.

37.7. For the avoidance of doubt, the LPA may as a basis for determining whether or not to issue its approval to any Transport Report in accordance with the Matrix and Transport Reports Schedule impose such conditions and/or require such additional Planning Obligations as may be necessary and reasonably related to the application for its approval of a Transport Report (and the Phase, Sub-Phase or Plot Development to which it relates) and shall be entitled to refuse such approval if the applicant for such approval is unable or unwilling (or procure the owners of interests in the relevant part of the Site) to enter into an appropriate Planning Agreement required under this Condition. Such additional conditions and/or obligations may only be sought where this would be in accordance with the Matrix

and Transport Reports Schedule and the relevant planning obligations contained in the Initial Planning Agreement.

Reason: to ensure that transport impacts of the scheme are mitigated in an appropriate manner to the satisfaction of the LPA.

37.8. No part of the Development (including Phase 1) shall Commence unless and until the Developer shall have submitted and obtained approval from the LPA (following appropriate consultation with the Transport Strategy Group) for a Monitoring Strategy. The Monitoring Strategy shall be updated on its first anniversary and annually from then until completion of the Development or another appropriate time agreed by the LPA and TfL.

Reason: to ensure that transport impacts of the scheme are monitored in an appropriate manner to the satisfaction of the LPA.

38. Parking, Deliveries and Servicing

38.1. The Reserved Matters Application required in accordance with Condition 1.15 for any Plot Development or any Building comprising any car park which is ancillary to any such Plot Development or Building shall include the following details,:

- a) layout of vehicle and cycle parking in accordance with relevant policy guidance and design standards;
- b) the details of any facilities for the charging of electric vehicles which shall be in accordance with the standards required in accordance with Condition 39.7;
- c) details of inclusive access for pedestrians;
- d) details of sustainable construction measures; and
- e) details of ramp design.

Reason: To ensure that high standards of technical and sustainable design and mitigation are achieved.

38.2. The Reserved Matters Application for any car parking area or any surface car parking spaces or any proposed multi-storey car park (including any above or below ground structure) or on-street parking spaces shall (in accordance with this Condition and Condition 2.1(e)) be accompanied by a statement to be provided as part of the Reconciliation Mechanism described in Section 6 of the DSF to demonstrate that such Development will be managed and used at all times in accordance with the Phase Parking Standards and the following maximum car parking standards as may be varied from time to time under the operation of Condition 37 relating to the Matrix and the Phase Transport Reports or Reserved Matters Transport Reports:

Use	Standard
Residential	PDP and up to 2,000 units capped ratio 1.0 2,000 – 4,000 capped ratio 0.95 4,000 – 5,000 capped ratio 0.8 5,000 – 7,500 capped ratio 0.7
Retailing and related uses & Leisure within Brent Cross East zone	7,600 spaces (No additional parking applied for)
Other Retail and related uses	1 space per 75 – 50sq.m
Other Leisure	1 space per 22sq.m
Employment (B1 – B8)	1 space per 300sq.m (Cap at 1,000 spaces)

Hotel	1 space per 2 bedrooms, plus 1 space per 5 seats for conference facilities
Community Facilities	1 space per 3-5 staff
Private Hospital	1 space per 2-4 beds
New and Existing Mainline Station	Parking only for disabled passengers and staff, and pick up and set down
Rail Freight Facility	120 car parking and 40 HGV spaces
Other Uses	In accordance with the London Plan

NB – Figures in the above Table are maximums and the appropriate level of car parking is to be set having regard to paragraph 2.6 of the Matrix and Transport Reports Schedule.

Reason: To comply with the DSF and Transport Assessment.

38.3. The New Superstore shall have a maximum of 760 car parking spaces, including the re provision of 460 spaces from the existing foodstore.

Reason: To ensure the appropriate car parking provision within the town centre south.

38.4. Not to occupy the New Superstore unless and until a car parking management regime has been submitted to and approved in writing by the LPA in accordance with the Car Parking Strategy approved for Phase 1 on the basis that the New Superstore car park will be operated and managed as a shared town centre car park subject to such charges and conditions of operation as shall have been first approved in writing by the LPA.

Reason: To ensure that parking is provided and managed sustainably in accordance with the LPA 's standards in the interests of pedestrian and highway safety, the free flow of traffic and in order to protect the amenities of the area and encourage (insofar as is reasonably practicable) the choice of sustainable non-car transport modes.

38.5. Not to commence any car park development within any Plot Development or any other part of a Phase or Sub-Phase unless and until details of a scheme for the installation of petrol/oil interceptor(s) in that car park has been submitted to and approved by the LPA. That car park development shall be implemented in accordance with the approved scheme and shall be provided before the car park(s) to which the scheme relates is Occupied or brought into use.

Reason: To reduce the risk of pollution by petrol and oil spillage.

38.6. Prior to the commencement of any Plot Development within any Phase or Sub Phase details of a scheme for the provision of facilities for the secure storage of cycles for that Plot shall be submitted to and approved by the LPA . No dwelling located within the Plot to which the approved scheme relates shall be occupied unless and until the cycle storage facilities have been provided in accordance with the approved plans.

Reason: To ensure that the development makes adequate provision for the secure storage of bicycles in the interests of encouraging alternative sustainable means of transport to and from the site.

38.7. All delivery and servicing within the Development shall be conducted in accordance with the Framework Servicing and Delivery Strategy as approved from time to time by the LPA under Condition 1.21.

Reason: to reduce the impact of delivery and servicing activity generated by the BXC site on the environment

38.8. Following the opening and coming into operation of the new multi-storey car park on Plot 114 as part of Phase 1, the land within the Brent Cross West Zone shall cease to be used as a car park in connection with the Brent Cross Shopping Centre or for any other car parking purpose save and except such car parking spaces as may be (1) provided with the prior approval of the LPA under this condition during the Construction Phase of the Brent Cross East Zone in order to maintain the number of car parking spaces to serve the Brent Cross Shopping Centre at the approved maximum level of 7,600 in accordance with this Permission and all relevant Reserved Matters Approvals and Other Matters Approvals and/or (2) approved as part of the Reserved Matters Approvals and Other Matters Approvals in respect of the Plot Development in the Brent Cross West Zone).

Reason: To comply with the DSF and Transport Assessment and the principle of car parking restraint on which the EIA Process was based.

APPENDIX B – Programme

Brent Cross Cricklewood Regeneration Programme – Transport Planning RMAs & DDM																																				
ID	Task Name	Duration	Start	Finish	Half 1, 2013		Half 2, 2013		Half 1, 2014		Half 2, 2014		Half 1, 2015		Half 2, 2015		Half 1, 2016		Half 2, 2016		Half 1, 2017		Half 2, 2017		H											
					J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A		S	O	N	D	J	F	M	A	M	J	J
1	Client Instruction & Receipt of Order	1167 days	Tue 26/02/13	Mon 02/10/17																																
2	Board Approval to Proceed	0 days	Tue 26/02/13	Tue 26/02/13																																
3	Client's Instruction and Receipt of Order	0 days	Thu 14/03/13	Thu 14/03/13																																
4	Client's Instruction to prepare Pre-RMAs	0 days	Fri 30/08/13	Fri 30/08/13																																
5	Dependencies	26 days	Thu 13/06/13	Fri 19/07/13																																
6	Models Purchase for BXC Detailed Design Model	0 days	Thu 13/06/13	Thu 13/06/13																																
7	Receive Frozen Pre-RMA Masterplan & Phase Definition	0 days	Fri 19/07/13	Fri 19/07/13																																
8	Longstop Dates (Current Consent)	766 days	Wed 01/10/14	Mon 02/10/17																																
9	Draft CPO provided to LBB (core strategy)	0 days	Wed 01/10/14	Wed 01/10/14																																
10	RMA Approval obtained	0 days	Thu 01/10/15	Thu 01/10/15																																
11	CPO Made and commence procurement	0 days	Mon 03/10/16	Mon 03/10/16																																
12	Latest Commencement of Construction	0 days	Mon 02/10/17	Mon 02/10/17																																
13	Logic Line Target Dates	647 days	Thu 31/10/13	Wed 01/06/16																																
14	S73 Submission	0 days	Thu 31/10/13	Thu 31/10/13																																
15	Target S73 Approval	0 days	Tue 24/12/13	Tue 24/12/13																																
16	Target Pre-RMA Submission	0 days	Fri 14/02/14	Fri 14/02/14																																
17	Target RMA Submission	0 days	Fri 27/06/14	Fri 27/06/14																																
18	Target RMA Approval	0 days	Mon 03/11/14	Mon 03/11/14																																
19	Highway Orders	0 days	Fri 28/03/14	Fri 28/03/14																																
20	CPO Formal Land Referencing	0 days	Fri 14/02/14	Fri 14/02/14																																
21	Make CPO Order	0 days	Fri 31/10/14	Fri 31/10/14																																
22	Target Start on Site	0 days	Wed 01/06/16	Wed 01/06/16																																
23	Authority Submission	1144 days	Wed 27/03/13	Wed 27/09/17																																
24	TP	251 days	Fri 30/08/13	Mon 01/09/14																																
25	Scoping A5 Corridor Survey (Pre OMA c2.7)	0 days	Fri 30/08/13	Fri 30/08/13																																
26	Area Wide Walking and Cycling Study (Pre RMA c1.20)	0 days	Fri 14/02/14	Fri 14/02/14																																
27	Framework Servicing & Delivery Strategy (Pre RMA c1.21)	0 days	Fri 14/02/14	Fri 14/02/14																																
28	Matrix and Phase Transport Report Final Scope (Pre RMA c37.1)	0 days	Fri 14/02/14	Fri 14/02/14																																
29	Car Parking Management Strategy (Pre RMA c11.1)	0 days	Fri 14/02/14	Fri 14/02/14																																
30	Monitoring Strategy (Pre Development c37.8)	0 days	Fri 21/02/14	Fri 21/02/14																																
31	Phase 1 Car Parking Standards & Phase 1 Car Parking Strategy (RMA 11.2)	0 days	Fri 21/02/14	Fri 21/02/14																																
32	Phase 1 Servicing and Delivery Strategy (RMA c1.22)	0 days	Fri 28/03/14	Fri 28/03/14																																

**Brent Cross Cricklewood Regeneration
Programme – Transport Planning RMAs & DDM**

ID	Task Name	Duration	Start	Finish	Half 1, 2013	Half 2, 2013	Half 1, 2014	Half 2, 2014	Half 1, 2015	Half 2, 2015	Half 1, 2016	Half 2, 2016	Half 1, 2017	Half 2, 2017	H																										
					J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
33	Phase 1 Pedestrian and Cycle Strategy (RMA c2.8)	0 days	Thu 26/06/14	Thu 26/06/14																																					
34	Phase Transport Report (RMA c37.2/4)	0 days	Thu 26/06/14	Thu 26/06/14																																					
35	A5 Corridor Study (Pre OMA c2.7)	0 days	Mon 01/09/14	Mon 01/09/14																																					
36	DSG Meetings	1144 days	Wed 27/03/13	Wed 27/09/17																																					
92	DSG TGs Meetings	246 days	Wed 27/03/13	Wed 19/03/14																																					
116	Pre-RMAs & RMA	246 days	Fri 01/03/13	Fri 21/02/14																																					
117	Scoping	126 days	Fri 01/03/13	Fri 30/08/13																																					
127	Area Wide Walking and Cycling Study (Pre RMA c1.20)	110 days	Mon 09/09/13	Fri 14/02/14																																					
146	Framework Servicing & Delivery Strategy (Pre RMA c1.21)	75 days	Mon 28/10/13	Fri 14/02/14																																					
155	Matrix and Phase 1 Transport Report Final Scope (Pre RMA c37.1)	45 days	Mon 09/12/13	Fri 14/02/14																																					
162	Car Parking Management Strategy (Pre Development c11.1)	95 days	Mon 30/09/13	Fri 14/02/14																																					
180	Monitoring Strategy (Pre Development c37.8)	100 days	Mon 30/09/13	Fri 21/02/14																																					
193	Pre-RMA Approval Period / Consent	60 days	Mon 24/02/14	Wed 21/05/14																																					
194	RMAs	280 days	Mon 22/07/13	Mon 01/09/14																																					
195	Phase 1 Car Parking Standards & Phase 1 Car Parking Strategy (RMA 11.2)	5 days	Mon 17/02/14	Fri 21/02/14																																					
196	Phase 1 Servicing and Delivery Strategy (RMA c1.22)	30 days	Mon 17/02/14	Fri 28/03/14																																					
201	Phase 1 Pedestrian and Cycle Strategy (RMA c2.8)	95 days	Mon 10/02/14	Thu 26/06/14																																					
218	Phase 1 Transport Report (RMA c37.2/4)	120 days	Mon 06/01/14	Thu 26/06/14																																					
247	A5 Corridor Study (Pre OMA c2.7)	280 days	Mon 22/07/13	Mon 01/09/14																																					
285	RMA Approval Period / Consent	80 days	Tue 02/09/14	Mon 22/12/14																																					
286	BXC Detailed Design Model (for S278)	472 days	Thu 14/03/13	Mon 02/02/15																																					

APPENDIX C – Initial Study Area Diagram

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Intentionally left blank

APPENDIX D – TfL / LBB Initial Scoping Comments

Beckie Chapman

From: John Hadley
Sent: 29 April 2013 16:32
To: Mark Watson; Beckie Chapman
Cc: Margaret Theobald
Subject: FW: BXC - Area wide walk & cycle incl. phase 1 - Merv's comments on 47065005/TP/001

John Hadley
Project Manager
URS Infrastructure & Environment UK Limited

Direct: +44 (0)1256 310 609
Mobile: +44 (0)7826 551 366

From: Bartlett, Mervyn [<mailto:Mervyn.Bartlett@barnet.gov.uk>]
Sent: 29 April 2013 16:30
To: John Hadley; Charleton Patricia; Roger Fortune; melvyn.dresner@tfl.gov.uk
Subject: RE: BXC - Area wide walk & cycle incl. phase 1 - Merv's comments on 47065005/TP/001

Dear all,

I have some comments on this please:-

2.2 Scope - early paragraphs need a different emphasis please

Should refer to outline approval, which included a non-technical strategy in TASR2, and detailed plans within the red line. I would like this standard of work and detail to be replicated for areas beyond the red line

The study should seek to identify links beyond the red line, evolution of networks in light of section 73 and a phased approach to network evolution incorporating consideration of construction activities

The above text then ties-in with the summary

2.2.1 non tech strategies are in TASR2

Need to refer to series of plans too

2.2.2 need to consider construction related issues as well

Also S73 point above

2.3 programme needed (Appendix A)

3.1 Hendon Thameslink

Bullet points - please add Kilburn (A5 corridor in Camden)

3.3 2 + 3 should be proposed routes

Deliverables should also include plans 1:1250

Interfaces should include Brent + Camden please

4.1.1 bullet 1 should refer to Mayor's Cycle superhighway

As well as update of plans 002 + 3 new plans will be produced

Desktop review should include feasibility design of proposals

4.1.2 site visits needed to review existing too?

4.3 plans at 1:1250?

6 what scale of plans will be produced?

6.2 need to refer to borough proposals as applicable please

7 perhaps title "proposed schemes" as we are seeking mitigation measures

7.1 what does outline assessment of the feasibility mean please?

Is the grading system referred to actually a prioritisation tool?

8.1 add take account of S73 proposed scheme

Also need to revisit design standards of existing proposals if / as applicable

Paragraph after bullet points mentions detailed design?

Final para in 8.1 should refer to Legible London?

8.3 mentions guidelines which seems at odds with detailed design

Deliverables should include phased plans of proposals I would have thought?

9 This section needs to refer to a proposal that LB Barnet are keen to ensure comes forward early in phase 1, that is a temporary or interim enhancement of the route between the BXSC and the tube station at BX please

9.1 add reference to considering issues related to S73 and also construction across phase 1 (a, b, c)

Mapping for other phases should be mentioned elsewhere

9.1.1 refer to existing proposal plans as well as 003

9.1.2 add temporary routes due to construction activity

9.1.5 plans at 1:1250?

9.2 add construction issue

9.3 scale of plans?

Also I agree with TfL that it would be useful to include the relevant parts of the Conditions and S106, as an appendix

Finally is there general monitoring needed, which would help define the baseline, and tie-into the monitoring strategy?

I look forward to receiving the next version of the Scope, but please contact me if you have any queries

Kind regards,

Mervyn Bartlett

Transport and Regeneration Manager

Development and Regulatory Services

London Borough of Barnet, North London Business Park, Oakleigh Road South, London N11 1NP

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Beckie Chapman

From: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>
Sent: 16 April 2013 18:34
To: Giedre Duan; 'Bartlett, Mervyn'; Mark Watson; Beckie Chapman; Margaret Theobald
Cc: Charleton Patricia; Condon David (ST); Nash Graham (ST); McHugh Mark (ST); Turnbull Sarah
Subject: RE: TG6 - Pedestrian & cycling strategy for phase 1 (condition 2.8)
Attachments: S106 Pedestrian and Cycle Contribution_xls97_2003.xls

Dear All,

I promised to provide initial feedback by Wednesday. Also, for information, prior to agreeing the s106 TfL undertook a fairly broad brush exercise to identify types of measures that would be needed to support the walking and cycling strategy – we did supply this to the DPs and this was considered in the s106 drafting; this is attached for info to show beyond the redline boundary measures were considered necessary and that gateway junction designs would need to be refined to be acceptable to TfL in cycling and walking terms. The following may form the basis of our formal pre-application letter and may be regarded as a first draft of such a letter.

Context

The reason for the Area Wide Walking and Cycling Strategy (and study) was to provide a baseline to assess proposed interventions and their benefits, and to inform the design process from pedestrian and cyclists perspective, and identify any further transport mitigation necessary to support mode shift to walking and cycling. The outcome of the study would be measures that help provide a comprehensive cycle and walking network at each phase of development.

To better understand these intentions it would be useful to include the relevant parts of the definitions, conditions and s106 related to walking and cycling within the text or as an appendix.

In BXC s106, TfL focus is on the Strategic Transport Network, my comments reflects this role.

TfL role

TfL role related to walking and cycling is as highway authority, in relation to provision of bus services/ bus stops (as well as the bus station), access to the London Underground stations, as well as general requirements to promote cycling and walking in London as set out in various guidance documents and design standards, projects such as Cycle SuperHighway, Legible London etc, planning policy and through funding and comments on development proposals. In the case of BXC, TfL is seeking to ensure the needs of cyclists and pedestrians are considered at all spatial levels including at each junction, bus station and train station as well as well in the wider context and the design of the development encourages mode shift.

One output from the study would be how highway improvements will be delivered. For TfL on the TLRN that would be via amending Gateway junction designs and/ or subsequent s278 for TLRN at the Gateway locations or other parts of the network. There may also be recommendations to provide s106 to fund TfL or Borough schemes to extend or vary them to better suit the development.

As a matter of principal, where pedestrians and cyclists are able to go now they should be able to do so in the future, overall severance should be reduced, permeability increased and legibility enhanced. As vulnerable road users special care needs to be taken when providing facilities including the Equalities Act 2010 (step free access should be provided and other barriers to access need to be removed), Crime and Disorder Act 1998 (section 17 as amended), as well as

road safety, traffic and highway engineering. The routing of heavy goods vehicles, cyclists and pedestrians, particularly within the site, needs to be considered in the strategy/ study.

Study area/ baseline

The study scope should include the Gateway junctions. The area wide study should identify existing provisions such as footbridges and cycle links. Their existence is important as well as their quality when considering what is needed in the future.

The proposed Gateway junctions need review from a pedestrian and cycle perspective as part of this strategy, as do the bridges across the TLRN. Specific observations and comments (mainly related to Phase 1 and TLRN) are as follows:

1. The completed Henlys Corner improvement scheme includes measures to aid pedestrian and cyclists. TfL is preparing a shared cycle/ pedestrian scheme from Henlys Corner along the A406 towards the A41 with proposal to go on site in 2015. As part of this study you should contact TfL design team to learn more about this scheme. The scope of the measures at A41/A406 junction should include underpasses either side of the junction as well as the footpaths/ bridges.
2. There is a cycle link that runs along the A5 towards Staples Corner. There are cycle facilities to the south of the M1 junction at the Staples Corner junction. There are bridges at the A5 junction and at the M1 junction. These allow step-free access to either side of the A406 from either side of the A5. For the M1 junction, they allow step-free access from north side of the A406 across the M1 junction to either the south or north side of the A406 i.e. step free from the A5 to site. Safe and step free links from the A5 towards Brent Cross site both sides of the A406 needs to be provided. The Gateway junction design needs to re-provide or improve upon these facilities for pedestrians.
3. To the west of the A5 junction on the A406, TfL is preparing a shared pedestrian/ cycling scheme for implementation next year. This needs to tie into the Gateway junction design.
4. Any new bridges across the TLRN should provide step free access for pedestrians, unlikely to be exceptions that are allowable, lifts were suggested during previous discussions these represent maintenance, crime and disorder concerns so TfL would prefer ramps. The bridges should be designed so cyclists don't need to dismount. There may be exceptions, as suggested by the s106 definitions, however, even in these cases they should not distract from the aim of providing a comprehensive network.
5. The proposed Living Bridge does not necessarily fit on the desire line from the Shopping Centre to the Brent X LU station from the outset. In deciding, where the Living Bridge lands (its design or whether to also bring forward the footbridge proposed to the east) needs to be reviewed with this mind.
6. Proposed pedestrian and cycle links across the A41 and A406, where they land outside the TLRN boundary, links from the TLRN footway need to be considered carefully, against the principle that existing provision needs to be improved or enhanced.
7. TfL is working the Borough to deliver Cycle SuperHighway Route 11 to Golders Green. Mostly onward connections (feeder routes) to BXC area will be via the Borough network.
8. To the north of the site is the Strategic Walking Network (Capital Ring). There are also sections of the London Cycle Network – opportunities to connect to and improve these networks need to form part of this study/ strategy.
9. Legibility and way finding are an issue around A406/ A41 and M1/ A06/A5 junctions as well as more widely. These should be improved by the development. Improving the perception of the area is also important, which suggests aesthetic improvements as well as conventional highway measures. This suggests a landscape architect and/or urban designer should review the A406 between A41 and A5 (and other areas) to devise a strategy to make the area more appealing to pedestrians and cyclists both within the TLRN boundary (TfL Arboriculture Route Manager can provide advice on planting) and on adjacent land in the

developers' control. Other aspects to consider in this context are street lighting, active and passive surveillance along routes, and streetscape.

Summary

I haven't edited the scoping document but the above implies some changes to wording. If you are able to capture in your scoping document TfL comments could be more succinct. Section 6 refers to constraints and opportunities. I suggest the most important constraint is also the most important opportunity, which is that you need to show a positive improvement in the pedestrian and cycle network and that existing provision is re-provided or enhanced. We expect the strategy to include specific proposals and measures. For Phase 1 as a minimum you either need to relate to existing preliminary designs prepared for the wider scheme that are amended or new preliminary designs for anything additional. The strategy needs to move from the concept stage to more specific proposals – the level of detail depending on specific context. I suggest in the scoping documents illustrative examples would be useful to help clarify level of detail.

I trust this makes sense, though if further discussion is needed let me know, I hope this accords with earlier discussions/ advice.

Melvyn Dresner

Principal Technical Planner | East Team | Borough Planning

Transport for London
9th Floor Windsor House
42-50 Victoria Street
SW1H 0TL

Tel: (020) 3054 7034 | Auto: 87034

For more information regarding the **TfL Borough Planning** then please visit <http://www.tfl.gov.uk/businessandpartners/15393.aspx> here you can find information on the team, TfL's transport assessment best practice guidance and charging for pre-application advice processes. If you have any other questions then please contact me to discuss

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-----Original Appointment-----

From: Giedre Duan [mailto:Giedre.Duan@Urs.com]

Sent: 10 April 2013 13:19

To: Bartlett, Mervyn; Dresner Melvyn (ST); Mark Watson; Beckie Chapman; Margaret Theobald; Giedre Duan

Subject: TG6 - Pedestrian & cycling strategy for phase 1 (condition 2.8)

When: 11 April 2013 09:30-11:00 (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London.

Where: URS Offices, 6-8 Greencoat Place, London SW1P 1PL

When: 11 April 2013 09:30-11:00 (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London.

Where: URS Offices, 6-8 Greencoat Place, London SW1P 1PL

Note: The GMT offset above does not reflect daylight saving time adjustments.

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From: John Hadley
Sent: 26 June 2013 09:59
To: Beckie Chapman; Margaret Theobald; Mark Watson
Subject: FW: BXC - Comments on Area-wide walk/cycle scope v3

John Hadley
Project Manager
URS Infrastructure & Environment UK Limited

Direct: +44 (0)1256 310 609
Mobile: +44 (0)7826 551 366

From: Bartlett, Mervyn [mailto:Mervyn.Bartlett@barnet.gov.uk]
Sent: 20 June 2013 16:54
To: John Hadley
Cc: Dresner Melvyn (ST); rogerefortune@gmail.com; Cowie, Martin; Margaret Theobald; Capelli, Nicola; PatriciaCharleton@tfl.gov.uk; Mercer, Karen
Subject: RE: BXC - Comments on Area-wide walk/cycle scope v3

Dear John,

Please see below my comments on the Area wide walking and Cycling study (rev 3):-

Appendix A - looks okay, just need confirmation it covers all the relevant material from the S106/conditions? Ideally I would like the scope to be capable of being read as a standalone document, although i wouldn't want huge chunks of S106 detailed annexes included

Appendix B is missing?

1 - this section leaves me with the impression that there are going to be no BXC-related improvements outside the BXC area which is a concern. There's no point having high quality facilities and routes within BXC red line, if cyclists then find themselves with little or no safe facilities beyond. We would expect to see proposals to at least ensure good & safe connectivity for peds and cyclists across the major barriers and to /from the key destinations, and in my view these would be BXC related regardless of their relationship to any red line boundary

general - typo in DSG at bottom of page 1 & elsewhere

page 2 - add Camden

2.2 - Note Barnet is developing a 'mini-Holland' proposal for the west of the borough in response to an invitation from the Mayor of London cycling commissioner/TfL, and this includes the current BXC proposed/planned cycle improvements. Notwithstanding that I am concerned, as above, that the emphasis is on improving connections across the red-line, rather than anything beyond it. Final ref to Transport Fund (should be Consolidated TF - the CTF) is not agreed, as any BXC-related schemes arising out of this study should be supplementary mitigation measures (SMMs), outwith the CTF. Any improvements deemed desirable but relatively remote from BXC site would be subject to further discussion though, as i agree it would not be appropriate for these to be 100% BXC funded as SMMs (page 4, para 2 - mentions SMMs)

2.2.2 - I suggest a plan in the scope might be helpful?

last para on p5 - add scaled plans and diagrams

2.2.3 - latest policy should be that for national and pan-London

sentence b4 the bullets: It is anticipated that the key documents included in the policy review will be:-

3.1 - as above, possible plan?

local areas bullet points - add neasden and Temple Fortune

need to add ped links to bus stops. TfL can advise but I think there were quite a lot of stops identified for improvement within 400m of the boundary line, and I assume the PERS will need to cover this?

3.4 - how is the transport matrix relevant?

3.5 - LBBr for Brent

4.1.1 add Mini-Holland as above

desktop review should be informed by data - traffic counts including cyclists are about to be undertaken. What about ped/cycle PIA assessment?

key here seems to be the need to liaise with Brent & Camden, so should be mentioned & add LBBr / LBC to 4.5?

what about the involvement of local cycling groups? They are mentioned in 4.5 but i'm not clear how you intend to involve them, beyond the workshop in 5.1

would there be sign-off by the authorities prior to the site visits?

4.3 do we need overall cycling & walking masterplans, as well as the more detailed plans?

5.1 workshop is great, as views of others will be vital and much-valued buy-in, but a bit loose in how stakeholders are going to be managed afterwards. Given previous issues this needs careful thought as it may be useful to meet on-site to discuss specific issues post-workshops, but on the other hand we want the study completed within a reasonable timeframe/cost, and must avoid a complex long drawn out engagement period

6 can any other innovative measures be thought about please? There is a cycle hub near Ealing Braodway station and a folding bicycle loan facility adjacent Guildford main railway station to name but 2 . Cycle hire club is mentioned in App A...

7.1, para 1 - improvements should be for safety as well as accessibility

7.3 - will plans of proposed measures, at a suitable scale be produced?

app C - TfL s/sheet to be attached?

Kind regards,

Mervyn Bartlett - Transport & Regeneration Manager, Development and Regulatory Services

London Borough of Barnet, North London Business Park, Oakleigh Road South, London N11 1NP

Tel: 020 8359 3052 Mobile: 07984 162832 Email: mervyn.bartlett@barnet.gov.uk

Barnet Online: www.barnet.gov.uk

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From: John Hadley [<mailto:John.Hadley@Urs.com>]

Sent: 06 June 2013 15:25

To: Bartlett, Mervyn

Subject: FW: BXC - Comparison of revised TP scoping Reports 004 and 006

Mervyn,

Comparisons of documents as requested.

Unfortunately after the effort and delay getting these to me I notice 004 is in reverse i.e. shows changes from rev02 to rev 01.

If critical or for onward distribution let me know and I'll try and rectify, but I assume it you'd sooner have this now than rectified version later.

I trust they will at least highlight the changes between the docs even if one needs reading in reverse.

regards

John Hadley

Project Manager

URS Infrastructure & Environment UK Limited

Direct: +44 (0)1256 310 609

Mobile: +44 (0)7826 551 366

From: Bartlett, Mervyn [<mailto:Mervyn.Bartlett@barnet.gov.uk>]

Sent: 04 June 2013 09:21

To: Giedre Duan; Rogerefortune@gmail.com; PatriciaCharleton@tfl.gov.uk; Margaret Theobald

Cc: John Orchard; John Hadley; Capelli, Nicola; Cowie, Martin; Mercer, Karen

Subject: RE: BXC - Final versions of TA, BXC1 Modelling & Infrastructure Engineering

Dear Giedre and URS colleagues,

Thanks for this but please can you send the latest scopes for all of these, and the attached also recently submitted with tracked changes, as well as the clean copies you have provided? This will make it a lot easier to review, and provide any comments

Kind regards,

Mervyn Bartlett

Transport and Regeneration Manager

Development and Regulatory Services

London Borough of Barnet, North London Business Park, Oakleigh Road South, London N11 1NP

Tel: 020 8359 3052

Mobile: 07984 162832

Barnet Online: www.barnet.gov.uk

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From: Giedre Duan [<mailto:Giedre.Duan@Urs.com>]

Sent: 03 June 2013 15:19

To: 'Rogerefortune@gmail.com'; Bartlett, Mervyn; 'PatriciaCharleton@tfl.gov.uk';

'paul.harwood@highways.gsi.gov.uk'

Cc: John Orchard; John Hadley

Subject: BXC - Final versions of TA, BXC1 Modelling & Infrastructure Engineering

Dear All

Please find attached the latest versions of scoping documents for:

1. S73 Transport Assessment Scope Rev 04
2. S73 Transport Modelling Scope Rev 03
3. S73 Infrastructure Engineering Scope Rev 02

Regards
Giedre Duan

Giedre Duan BBA (Hons), MBA (Hons)
Assistant Project Manager, Project Management
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Input	Person	Role	Date	Description
Prepared	Melvyn Dresner	Land Use Planning - Principal Planner	8th May 2009	Policy background information, summary costs
Checked by	Julie Dye	TfL's Walking and Accessibility Projects Manager	26th May 2009	Cost data on pedestrian improvements, scope, PERS and technical advice
Advice on cycling projects	David Kang Gil	Technical Advisor - TfL's Cycling Centre of Excellence	22nd May 2009	London Cycle Design Standards and funding/costs of LCN+
Advice on Environmental Projects on TLRN	Phil Hurst	Route Manager Arboriculture and Landscape, TfL's Road Network Management	30th April 2009	Initial advice on trees and soft landscaping elements
Advice on schemes on TLRN	Junia Cleary	TLRN Planning Unit	14th May 2009	Advice on TLRN projects in BXC area

Item	£000s
Study including detail design	500
Pedestrian Improvements	4200
Cycling Improvements	960
Bus Stops	700
Sub-Total	6360
Contingency @ 20%	1272
Traffic Management @ 5%	318
Grand Total	7950

Notes

Refer to exclusions on adjacent sheet

Scope of proposed PERS

TfL Comments provided on cycling and walking strategies to provide context

Revised Access and Design Statement provides context

The above costs assumes pedestrian and cycle infrastructure will be provided as set out including bridges, gateway junctions and on-site highway within the redline

It in planning application

Pedestrian Improvements	Cost in £000s	
TLRN		
Signalised crossing improvements	78	Outside redline or additional to BXC proposals
Junction improvements	200	Outside redline or additional to BXC proposals
Route or area improvements to enhance streetscape and security	390	see Pedestrian and Cycle Routes
Making crossings BV165 compliant	10	All junctions
Replacing subways with at-grade crossings	211	Outside redline or additional to BXC proposals
Replacing footbridges with at-grade crossings	150	Outside redline or additional to BXC proposals
Upgrading footbridges and subways	90	Outside redline or additional to BXC proposals
Lighting	550	see Pedestrian and Cycle Routes
Trees and soft landscaping	224	see Pedestrian and Cycle Routes
TLRN Sub Total	1903	Pedestrian and Cycle Study should consider measures on adjacent corridors
Borough		
Route or area improvements	278	see Pedestrian and Cycle Routes
Jointly funded holistic improvement schemes	218	Outside redline or additional to BXC proposals
Safety & security improvements	72	Outside redline or additional to BXC proposals
Crossings	70	Outside redline or additional to BXC proposals
Major infrastructure	690	Outside redline or additional to BXC proposals
Creating or enhancing public spaces	187	Outside redline or additional to BXC proposals
SWN programme*	66	Capital Ring or links to it
New Walking flagship	300	modelled on Legible London or other similar
Lighting	320	see Pedestrian and Cycle Routes
Trees and soft landscaping	140	see Pedestrian and Cycle Routes
Borough Sub Total	2341	see TLRN Sub-total note
Grand Total	4244	

Notes

Based on TRL PERS proposed study area
Includes links to Brent Cross Underground Station, Hendon Central and Hendon Thameslink
TfL Streetscape Guidance
Assumes a contribution for CAPITAL ring
Assumes appropriate street furniture where necessary (seating, bins, information)
BV165
means pedestrian crossings with facilities for disabled people
SWN means Strategic Walking Network
There are six routes which make up the Strategic Walking Network. These are primarily walks for pleasure but are being provided to provide a high quality and exemplary walking experience for all users.
New Walking flagship
means key walking routes to local character communities taking barriers to walking using a variety of treatments in a cross-modal context

Based on 2008/2009 prices

The following items are excluded from the costs estimate:

Cricklewood Lane/ Cricklewood Broadway TfL recommends a PERS audit included as part of A5 Corridor
Gateway Junction works TfL recommends the PERS audit is used to inform the design process
is considered within context of the works along the River within the site.
Utility diversions
Third party costs/ land acquisitions
New bridges proposed by the Developer - also it assumed upgrade of existing bridges is included as part of the gateway junction works
Wayfinding Strategy based on Legible London pilots - TfL recommends this approach is adopted here (costs cannot be better determined when pilots complete)

Number	Corridor	Type	Length	Study	Cycling improvement s	Pedestrian improvements (minimum costs based on footway upgrades only)	Environmental improvements including trees planting and soft landscaping	Subways Upgrades/not included in redline that serve the site)	Lighting, assumes overall lighting to standard but need for upgrade for pedestrians/ cyclists at specific locations	Total	Contingency @ 20%	Traffic Management, inspection and supervision @ 10%	Cost per Corridor	Footway Surface Area (m square) (off-site)	Cost (based on nominal £30 per square metre)
1	A41 from the Burroughs to Brent Cross Bus Station.	TLRN, Bus, cycle and pedestrian link to Hendon Central tube	1.6 km	£117,660	£160,000	£110,400	£84,000	£300,000	£150,000	£784,400	£156,880	£78,440	£1,019,720	3680	£110,400
2	A41 from Brent Cross Interchange to Finchley Road	TLRN, Bus, Cycle and Pedestrian link to Brent Cross tube	2 km	£32,700	£200,000	£138,000	£80,000		£200,000	£618,000	£123,600	£61,800	£803,400	4600	£138,000
3	A406 from Brent Street/Golders Green Road to Staples Corner	TLRN, Bus, Cycle and Pedestrian link to Brent Cross tube (including public)	2 km (including 700 metres outside	£62,700	£200,000	£138,000	£80,000		£200,000	£418,000	£83,600	£41,800	£543,400	4600	£138,000
4	A5 Station Road to Staples Corner	SRN, Bus, Cycle and Pedestrian link to	1.2 km	£89,420	£200,000	£82,800	£80,000		£120,000	£462,800	£92,560	£46,280	£591,640	2760	£82,800
5	A5 Staples Corner to Cricklewood Lane (including MML over bridge)	SRN, Bus, Cycle and Pedestrian link	2 km	£62,700	£200,000	£138,000	£80,000		£200,000	£418,000	£83,600	£41,800	£543,400	4600	£138,000
6	Cricklewood Broadway /West Hampstead station via Cricklewood Lane and Claremont Road to Templehof Bridge	SRN and new highway through EXC area, Bus, Cycle and Pedestrian link to Cricklewood and West Hampstead Thameslink stations	4.5 km (including 2 km from West Hampstead to application boundary)	£62,700	£200,000	£138,000	£80,000		£200,000	£418,000	£83,600	£41,800	£543,400	4600	£138,000
		TLRN		£273,960	£360,000	£386,400	£224,000	£300,000	£550,000	£1,743,460	£2,092,152	£2,510,582	£3,012,699		
		SRN		£194,320	£200,000	£358,800	£220,000	£0	£320,000	£1,273,820	£1,646,344	£1,278,013	£2,375,615		
				£467,880											

TfL's advice note provides

indicative cost estimates based on bus priority works implemented in the
past based on Flagship schemes. For the purposes of estimate LIP
schemes the following rates have been suggested.

- Category 1a - Central London = £200,000 per km
- Category 1b - Inner London = £400,000 per km
- Category 1c - Outer London = £100,000 per km
- Category 2a - Town Centre schemes = £400,000
per km
- Category 2b - Remainder of the network =
£100,000 per km

Source: www.haringey.gov.uk/lip_chapter_5.3_bus_reliability.pdf

Minimum cost of £10,000 per bus stop

Footway renewal = at £30 per sqm - see Sources below.

Trees = £1200 per tree up to 300 per Km

TfL LCN+ Cycling Programme is over £100,000 per kilometre at 2007 prices

i.e. £100 million divide by 900 km

and generic costs within London Cycle Design Standards

also results of CRISP for A5 and A406

Costs also includes cycle parking within the highway where appropriate

Sources: Valuing Footways in Relation to Whole Government Account Principles October 2004, TfL Table 19

Examples

London Borough of Ealing, Transport and Environment Scrutiny Panel, 10th December 2008

cost per scheme range from £13,000 to £75,000 Unit rate from £10 to £75 per m2

London Borough of Ealing

Environment, Parks and Leisure Scrutiny Panel 4th July 2007

Review of different materials for use in Enfield's Planned

Highway Maintenance Programme for footways.

cost per square metre range from £30 to £55

London Borough of Hammersmith & Fulham

HIGHWAY MAINTENANCE

APPROVAL OF THE 2009/10 PROGRAMME

15-Jan-09

Units rates for footways of £30 per square metre

Principal Roads Re-surfacing £46

Design and Access Statement (March 2009)

Ref**A1.2**

The one strategic weakness of the site is local accessibility, in that it is disconnected in terms of public transport and for pedestrians and cyclists. If this can be overcome the regeneration area offers an exceptional opportunity to create a major new sustainable community close to central London.

The regeneration area represents a conundrum as far as accessibility is concerned. At a strategic level the site is highly accessible due to the nature of the surrounding transport infrastructure that favours the private car as the primary means of movement in the area while access to public transport is limited to the existing bus station at Brent Cross Shopping Centre. The proximity of the surrounding railway infrastructure with the Midland Mainline Railway in the West and the Northern Line to the east of the site currently represent an underutilised opportunity with pedestrian connections between existing railway stations and the regeneration area being poor in quality. Currently the site is more accessible for those coming to it from other parts of London or beyond London than those who live locally. At a local level the access is restricted by the poor quality of connections for pedestrians and cyclists to move both within the site and beyond the regeneration area to the surrounding suburbs. The lack of grain or structure to the public realm that has evolved in the area presents a barrier to movement locally. The current situation is the opposite of that of a real town centre where it is normal for those who live closest to have privileged access to its heart. While the surrounding infrastructure represents a significant opportunity in terms of strategic accessibility for the regeneration area, remedying accessibility at a local level is one of the main objectives of the proposals.

Pedestrian routes between the shopping centre and surrounding neighborhoods and Brent Cross Underground Station are tortuous and ill maintained and not currently conducive to creating an attractive town centre environment.

A1.3

The site is subject to a number of site specific allocations including creating a new town centre encompassing a mix of uses, particularly in the Eastern Lands, improved public transport and pedestrian access, landscaping and diversion of River Brent.

A2.1

Ensure equal access across the site where pedestrian, cyclist and vehicle maintain a mutually appropriate relationship.

A2.2.1**New Road Bridges**

Two new bridges for private vehicles, public transport and pedestrians and cyclists will be built traversing the A406 from north to south and from the A5 across the Midland Mainline Railway from east to west. The new A406 bridge will form the primary connection between the north and south components of the scheme and is limited in its geography by the existing Holiday Inn Hotel and the need to allow head room for vehicles on the A406 below. The new Midland Mainline Link Bridge is placed to take advantage of the natural topography at the highest point on the A5, this in turn will limit the need to intervene in existing ground levels and minimise the impact of the new bridge on adjacent properties. As such, the location of those bridges is relatively fixed and thus a small limit of deviation is applied on Parameter Plan 002.

New Pedestrian Bridges

Five new pedestrian bridges will also be built: two crossing the Midland Mainline Railway providing access to the A5, two crossing the A41 and A406 roads to facilitate a new connection from Brent Cross LUL Station through the site onto Brent Cross Shopping Centre, and a new bridge across the M1 Junction will also be built to facilitate pedestrian connections to the north towards West Hendon and the Welsh Harp. All of the pedestrian bridges are placed to strengthen natural desire lines that run both north south and east west across the site and beyond to key elements of transport infrastructure and the Town Centre's suburban hinterland. The bridges will utilise natural gradients where possible i.e. A41 and M1 pedestrian bridges, but where this is not possible step free access facilities will be provided.

The new Bus Station at Brent Cross Shopping Centre will also improve capacity for both existing and new bus routes. The station is connected back into High Street North by a number of pedestrian routes which traverse the realigned River Brent. In addition the location of the new bus station is optimal both in terms of flexibility and bus capacity while also allowing the High Street North to be free of vehicular traffic.

A2.3

To the north of the regeneration area the existing Brent Cross Shopping Centre will be enclosed in new retail and leisure development together with a series of new mixed use plots lining a new pedestrian high street. The mixed use plots will concentrate retail and

leisure uses on lower levels with retail facing the high street and restaurants and bars taking advantage of the southerly aspect along the realigned River Brent. A mixture of uses will sit on top of these plots distributed around communal courtyards with frontages facing onto the high street and courtyards opening out to the south.

The pedestrian high street will terminate at Brent Cross Main Square the perimeter of which will be lined with further retail and leisure uses. The square falls adjacent to the River Brent and the potential exists to concentrate bar and restaurant uses along the river's edges. Brent Cross Main Square will also be flanked by a hotel and cinema complex on its southern periphery lining both sides of the approach to the new A406 Bridge.

A2.5.1 Strategy for Brent Cross Cricklewood outlines a framework for :

1. The Distribution and Hierarchy of Open Space Typologies
2. The Distribution and Typologies of Play Space
3. The Standards for Private Amenity Space for Residential Development

The strategy proposes a comprehensive network of public parks, city gardens, and public squares interlinked by a highly accessible pedestrian and cycle network. Opportunities for making a verdant and habitat rich environment within the town centre are established by integrating nature parks and green corridors while making places for play and leisure activities are at the heart of the strategy.

On a strategic level the open space and public realm proposals for Brent Cross Cricklewood create a new green link between the extensive open spaces of Hampstead Heath and the Welsh Harp Reservoir while also offering a significant increase in local open space.

A2.7 Transport and Movement

A new structure linking communities

Central to resolving the inaccessible nature of the Brent Cross Cricklewood regeneration area is the provision of an enhanced and highly accessible public transport network.

The diverse mix of uses coupled with a new network of pedestrian and cycle routes within the development will reduce the need for new residents and surrounding communities to undertake local journeys by private car. Together with the provision of a comprehensive public transport system this network of pedestrian and cycle routes will inspire a modal shift in the nature of access into the regeneration area and the way people will move around and within the development away from usage of the private vehicle. Through this shift in the nature of movement the regeneration of Brent Cross Cricklewood will readdress a number of issues that have impeded the regeneration of the area in the past such as congestion on surrounding and internal road networks, an environment that is hostile to both pedestrians and cyclists and the domination of development typologies that place vehicles before people.

The comprehensive nature of the public transport provision at Brent Cross Cricklewood will interact with a new network of pedestrian and cycle routes that will ensure high levels of accessibility at both local and strategic levels.

A3.3 Whitefield Street will provide a clear route from the Market Square through the Eastern Lands to a new pedestrian bridge over the A41 which will connect the development with Brent Cross Underground Station on the Northern Line.

The street will not be a main route for traffic and will be landscaped to give pedestrians priority along its length reinforcing the direct link between the heart of the regeneration area and Brent Cross Underground Station.

The Eastern Lands embrace one of the most significant pedestrian routes through the development in the form of Whitefield Street and the route it provides to Brent Cross Underground Station while also being connected to the station and remainder of the development via a bus route which terminates at Brent Cross Underground Station. The Eastern Lands also provide a more viable pedestrian route to Brent Cross Shopping Centre via a new pedestrian bridge across the North Circular. Private vehicles will be able to access the Eastern Lands via a new signalised junction on the A41 which will take traffic through the district via Whitefield Avenue on to Tilling Road.

A3.4 Station Square is one of the main public squares at Brent Cross Cricklewood. A bustling and vibrant square, it forms the front door to the new Railway Station and incorporates an inter-modal transport interchange as part of the public space where people will be able to move easily between rail and bus networks. The space will give pedestrians priority with buses and taxis moving slowly through the space on a shared surface that integrates public transport with public realm. Station Square will be at the western head of the new High Street that will connect the north and south zones of the regeneration

area via a new bridge spanning the North Circular. Like those in the High Street, the buildings in Station Square will have a variety of uses on their lower floors such as bars, restaurants, cafes and local shops. Station Square will be occupied by taller buildings which both mark and frame the space, these buildings will be a maximum of 25 storeys (or 100m as shown on Parameter Plan 007).

Station Quarter will see large numbers of people moving in and out of the area at the start and end of the working day. For this reason great importance has been placed on the quality of the public realm and the structuring of clear and accessible pedestrian routes between the new Station and Transport Interchange and the three squares. The vast majority of people will access this part of the regeneration area utilising public transport or even walking from their homes in nearby areas.

A3.7 Cricklewood Station

The proposals for Cricklewood Lane are anchored around the provision of a new urban square at Cricklewood Station that will open up access into the station while also giving the ticket office more prominence from the street. The square will give the station a safer and more secure forecourt that will be well lit, overlooked by new residential accommodation, provided with expanded capacity for cycle parking and allow better pedestrian movement.

A3.8 The Railway Lands are bisected by a new route from Edgware Road that will allow private vehicles, buses, pedestrians and cyclists to access the new development across the new bridge over the Midland Mainline Railway.

A3.10 New buildings to the south and west of the existing shopping centre will define the edges of a new pedestrianised High Street and Brent Cross Square, making for a varied and lively town centre. Routes from the High Street to the Brent Cross Shopping Centre will ensure that the existing internal malls form an integral part of the wider street network, allowing uninterrupted pedestrian movement into and through the new town centre. In addition to new shops there will be a hotel, leisure facilities, bars and riverside cafes, office accommodation and homes that will establish a diverse mix of activity and form the basis of a cohesive new community.

The area is separated from the remainder of the BXC site by major infrastructure including the A406 and A41, and the regeneration proposals will seek to break down these barriers to movement through the provision of new, and improvement of existing, pedestrian routes and vehicular bridges.

Connecting the Town Centre

The north and south sides of the North Circular will be linked by a new landmark bridge continuing High Street South onto Templehof Avenue and providing a principal route for buses, cars, cycles and pedestrians entering Brent Cross East from Cricklewood.

Templehof Avenue and Templehof Bridge

This road is yet to be designed in detail but the bridge will be a landmark structure offering a multi-modal link between north and south, comprising dedicated bus lanes and sheltered pedestrian walkways. A hotel on the west side of the street and a cinema on the east will create a strong edge to this part of the development.

Access

Private cars will remain an important means of access to Brent Cross East but improvements to public transport and the extension and creation of pedestrian and cycle routes will allow the town centre to be an accessible and inviting place for those that live, work and visit the area.

The existing roads and junctions will be improved and Prince Charles Drive will be moved to the perimeter of the zone adjacent to the North Circular. The existing surface car parking will be accommodated either underground or in a multi-storey car park next to the Fenwick store. This allows the separation of vehicular traffic and public realm which in turn allows the inward looking shopping centre to become a part of an outward looking town centre. The bus station will be enlarged and moved, with Prince Charles Drive, to the south of the zone. This greatly improved facility is positioned to give easy accessibility to all the uses and facilities on the site. Additionally its size, landscaping and associated structures will collectively form a buffer between the North Circular and the pedestrian environment to the north.

Next to the bus station a new footbridge will cross the North Circular to the Eastern Lands significantly enhancing access to the Brent Cross London Underground station.



2. Methodology

TRL propose to undertake the following methodology for this commission drawing upon discussions with TfL. Based upon the PERS v2 process, as identified in the PERS v2 handbook, a staged process for auditing would be undertaken:

Stage 1: Definition of the study area

Stage 2: Desktop identification of links, crossings, routes and spaces to be audited

Stage 3: On-street evaluation

Stage 4: Data analysis using the PERS v2 software

Stage 5: Display and review outputs and develop recommendations

Each stage is defined in more detail below:

Stage 1: Definition of the study area

This stage aims to finalise the audit area with BCCDP, London Borough of Barnet and TfL to identify any known local information or existing relevant data which may inform the study. Local knowledge of the site to be audited may assist in the initial defining of appropriate links, crossings, routes and spaces at a desk-top level.

Stage 2: Desktop identification of links, crossings, routes and spaces to be audited

Having identified the areas to be audited, TRL will use desk-top mapping as a basis to initially identify the links, crossings, routes and spaces (together with Officer knowledge). It is envisaged that this identification will be adapted during the on-site auditing (as links are further sub-divided where necessary etc).

Stage 3: On-street evaluation

Following Stage 2, the audit team will undertake the on-street PERS v2 auditing collecting a full set of PERS data including all links, crossings, routes, waiting areas and spaces (as required). All audit members will be required to adhere to TRL's health and safety regulations whilst on site. The auditing will take place using paper copies of the audit forms for subsequent input into the PERS v2 software.

Stage 4: Data analysis using the PERS v2 software

Having manually collected the PERS data for each audit area, the data will be subsequently input into the software. The project manager will oversee the data input process.

Stage 5: Display and review outputs and make recommendations

Having inputted the data, TRL staff will analyse the results and produce a report of the key findings, which will be presented with tables and mapping used to display the findings. Photographs will also be taken on site and included in the report to exemplify particular findings. The report will include headline and specific recommendations on where particular aspects of the pedestrian environment need improvement.

**Project output:**

A PERS report for the walking routes to Brent Cross Cricklewood Redevelopment outlining the key findings and detailed recommendations. The report will identify 'quick win' maintenance recommendations as well as medium / long term design recommendations. The report will include:

- Introduction
- Background information
- Findings and recommendations (including PERS scores, photography and Red/Amber/Green maps showing key problems)
 - Links
 - Crossings
 - Routes
 - Waiting areas
 - Public spaces
 - Interchange spaces
- Summary

Project and Quality Management

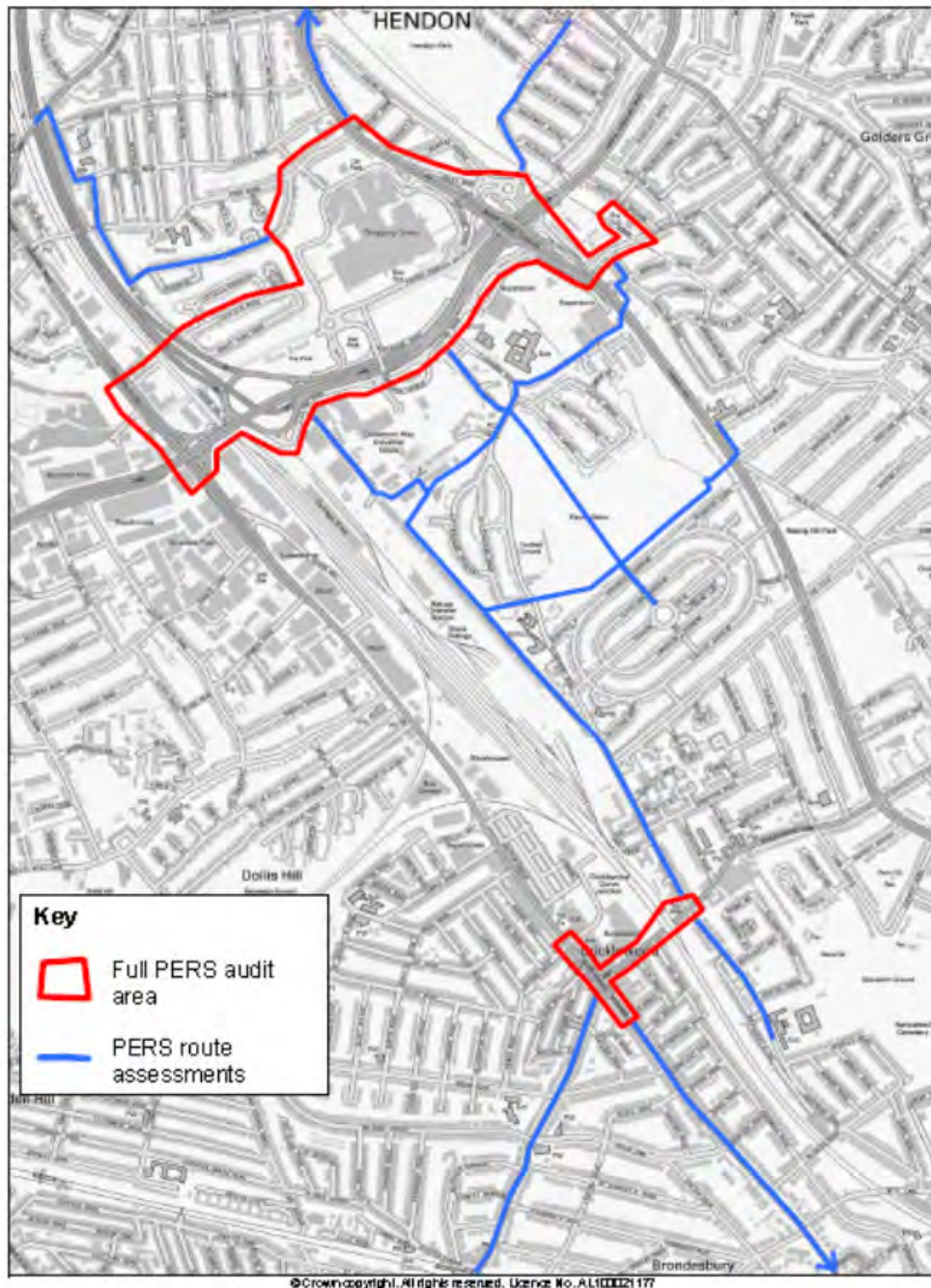
This project will be managed in accordance with TRL's Integrated Quality Management System which is in accordance with ISO 9001. The Project Manager will be Adam Davies. Adam will manage the project in line with TRL's Project Management standard. He will act as the first point of contact for BCCDP.

Quality control will be via TRL's Technical Review system. Catherine Ferris will act as Technical Reviewer and will be responsible for ensuring the quality of all outputs to BCCDP.



5. Proposed audit area

The proposed audit area shown here is drawn from discussions with TfL and covers approximately 4km of street and 1km of walkways and paths. TRL proposes to undertake a full PERS audit on all of the streets and paths within the red outlines. In addition TRL will undertake 10 route assessments to key destinations in the wider area, suggested routes are shown in blue.



Proposal to BCCDP
February 2009

Extract taken from Scott Wilson spreadsheet sent on 16 December 2008 - Queries on TA with response V161208

T364	At this stage there are some gaps in the proposals in order to make them sufficiently viable for us to support this scheme. The aspirations set out in the various documents and strategies submitted to date (including the non – technical cycling strategy) cannot be realised with the current proposals, as facilities are not fully continuous and many desired routes have not been adequately designed for cyclists. The proposals appear to have been developed on the basis of a specific (but non comprehensive) cycle network rather than a fully integrated network where most roads ought to be considered when designing for cycling. In addition, it would appear that the CRISP studies undertaken for some of the key links surrounding the site (including LCN+ links and A5, A41, etc.) have not been
T365	Whilst some consideration has been given to some of the strategic north – south and east – west movements, it is considered that more can and ought to be done to provide better linkage, particularly across Staples Corner and the North Circular.
T366	In addition, I should also point out that there are other issues which I believe are outstanding and which I hope will be resolved, particularly the construction phasing and the interaction of cyclists with HGVs and construction traffic. There is also no indication of cycle parking facilities and routes to these.
T367	Despite the many concerns that I have with the proposals, I feel that the preparation of highway design layouts (which perhaps these had been available for a while now) is a step forward in the right direction. Below I list the concerns identified on each of the drawings:
T368	<u>Drawing 1004:</u> 1. The southern footway on Tilling Road by the bus stop and uncontrolled crossing has been designed for cycling as indicated. Can the crossing be controlled? 2. I would expect all new footbridges to provide for cyclists as well as pedestrians where reasonably practicable. Please clarify why the footbridge shown does not cater for cycling.
T369	<u>Drawing 1005:</u> 3. There is no adequate provision for southbound cycle movements along the A41. Most cyclists will not use the flyover and will divert through Haley Road. Haley Road itself has been identified within the A41 CRISP where cyclists 4. No attempt has been made to improve the network of bridges under the roundabout under the Brent Cross flyover. Can the north – south footbridge be replaced / widened?
T370	<u>Drawing 1007:</u> 5. The drawing indicates that the path on the north side of the river Brent is suitable for cycling, but it is unclear what the status is of the footway on the south side of the river Brent. The width on this footway appears wide enough to 6. There appears to be a number of links across the river Brent but it seems that the only way to get across is through a series of steps. Can ramps not be provided as well? There is also a link going over the river Brent that 7. The southern footway along Tilling Road is interrupted by a number of side roads. The southern footway on Tilling Road has been designated for cycling as indicated on drawing 1004, but it appears that no adequate crossing 8. Consideration should be given to providing entry treatments to side roads.
T371	<u>Drawing 1009:</u> 9. Please clarify why the indicative line shown is for pedestrians only.
T372	<u>Drawing 1010:</u> 10. It is unclear whether cyclists can gain access to Woodville Gardens from the proposed toucan across the A41.
T373	<u>Drawing 1011:</u> 11. Should details be shown of the proposed link between the footway by the river Brent and the A5 over the M1 and railway line?
T374	<u>Drawing 1012:</u> 12. The redesign of Staples Corner is undesirable for cycling, not only because of the proposed junction layout but also because of the absence of at grade crossings. Notwithstanding the current design, it is considered that a
T375	<u>Drawing 1013:</u> 13. It is unclear how the southern approach to the proposed footbridge links to the network. 14. The pedestrian crossing across Brent Terrace ought to be a toucan given that either side there ought to be off carriageway cycle facilities although this is not clearly indicated on the drawings. 15. An ASL should be provided at the Brent Terrace – Tilling Road junction (by the proposed pedestrian crossing)
T376	<u>Drawing 1014:</u> 16. ASLs should be provided at the junction located immediately west of the bus only route. The extent of off – carriageway facilities at this junction is also unclear.
T377	<u>Drawing 1015:</u> 17. The Claremont Road junction (at the centre of the drawing) ought to be designed with ASLs. In addition, it is desirable to remove the left turn slip lanes by building out the kerb line and providing an ahead and left nearside lane.
T378	<u>Drawing 1016:</u> 18. It is unclear whether there is an off carriageway facility along the north – south section of Brent Terrace by the southbound bus stops. 19. ASLs should be provided on all arms of the junction of Brent Terrace with Claremont Way (is it Claremont Way?). The crossing on the south arm of this junction should be a toucan.
T379	<u>Drawing 1017:</u> 20. Please clarify why the proposed footbridge cannot provide for cyclists as well as pedestrians. 21. The A5 junction with Geron Way ought to be redesigned to incorporate ASLs and adequate crossing facilities.
T380	<u>Drawing 1019:</u> 22. The A5 junction with the New Link Road ought to have ASLs and the off carriageway and crossing facilities better defined.
T381	<u>Drawing 1021:</u> 23. The Claremont Road junction should be designed with ASLs. Please also note that there are no existing cycling facilities on Claremont Road.
T382	<u>Drawing 1023:</u> 24. Cricklewood Lane is a useful east – west link and therefore this should be an opportunity to implement cycle facilities along this link such as the introduction of cycle lanes. Also the junction with Brent Terrace ought to be
T383	<u>Drawing 1024:</u> 25. The A5 junction with Cricklewood Lane ought to be designed with ASLs and toucan/s.

Implications for TfL:
<p>Pedestrians - need to secure the following by condition or Section 106:</p> <p>Secure improved pedestrian facilities from the outset as part of highway design as well as scheme design.</p> <p>Improvements to aid all users needs to be provided, including the specific needs of particular groups (visually impaired, children, parents with pushchair users, wheel chair users, frail and elderly)</p> <p>Improvements need to be based on a systematic assessment of baseline conditions.</p> <p>Public transport interchanges, bus stops, bridges and major highway works to show how they connect to surrounding land uses. Therefore, TfL would expect to review and consider access to facilities/ infrastructure before agreeing detailed designs.</p> <p>Detailed approval of shared spaces and shared surfaces need to support the objective of encouraging walking throughout the site and not just in specific areas.</p> <p>Pedestrian spaces need to work well during the day and night based on planning of land uses, urban design, lighting and management of spaces.</p> <p>Facilities provided (e.g. lifts on footbridges) need to be shown to have a long term value to pedestrians or be unsustainable in maintenance and personal security terms.</p>
<p>For a baseline to be acceptable to TfL it should include as a minimum:</p> <ul style="list-style-type: none"> Primary routes should be walked and data collected in a systematic way to show base conditions (ideally through a PERS audit assessment). For new routes the alignment should be surveyed if they cannot be walked and barriers identified. What information has been collected on the different needs of disabled people, e.g. visual impairment, wheelchair users, frail/elderly people? Anything collected on school travel and safer routes to school? Provide a list of controlled crossing points (and detail of any facilities that need improvement or upgrade, such as lacking tactile paving) and list of location for proposed crossing points. Pedestrian accident data and analysis. Level of service assessment at interchanges and other areas of high or potentially high footfall (e.g. Templehof Bridge, Brent LUL to site, within the existing retail areas)
<p>For each of the gateway junctions the following should be provided with regards pedestrians:</p> <ul style="list-style-type: none"> How pedestrians currently move around the junction? How many pedestrians? e.g. pedestrian counts for areas of high activity. Identifying key pedestrian desire lines and potential pedestrian routes through a junction. Details of pedestrian phases and crossing facilities. Links to the junction/ footway widths and widths/gradient of bridges/subways. Level of service assessment – to enable identification on whether refuges have sufficient width. <p>This approach should be applied to both the Transport for London Road Network (TLRN) and Strategic Road Network (SRN) and could be applied to junctions within the development areas.</p> <p>TfL request funding to aid access to the Capital Ring Strategic Walking Route to encouraging walking.</p> <p>The developer needs to show that all relevant pedestrian desire lines identified in the Walking Strategy are direct and comfortable to use at all stages of development and all times of day. The Proposed Pedestrian Network (D1119038/012) shows gaps that need to be filled to make the scheme acceptable as follows:</p> <ul style="list-style-type: none"> Pedestrian connections from Brent Cross West to Brent Cross East and to areas south and east. Pedestrian connections from Brent Cross East eastwards, via Brent Cross Interchange and northwards. Direct link through Eastern Lands to Brent Cross Underground station. Direct links from the replacement Templehof Bridge to the bus station and A406. Pedestrian footbridge across A406 should be integrated with adjacent land uses and provide a direct link to the proposed bus station that is visible from the bus station. Pedestrian routes around Brent Cross Shopping Centre and associated car parks, particularly when the centre is closed or for those who are by-passing the centre; and areas north and east. How Brent Square links to High Street North, Templehof Avenue and surrounding area needs explanation. High Street North could become undesirable for walkers later in the evening when main retail activity has subsided. It is important to ensure this area remains used later in the evening (design, land use, transport function) and connects with the wider area in a logical way. Pedestrian will continue to use the TLRN and SRN and that any changes to these roads should enable this e.g. new access onto A406 and Geron Way junction with A5 has not been designed for pedestrian use. All highway routes within the site should provide pedestrian footways on both sides of the highway e.g. pedestrian footways should be provided on both sides of Templehof Bridge/ Avenue; crossings and shared surfaces/spaces should be provided where appropriate e.g. entry treatments at minor junctions. <p>Fully accessible routes should be available at all stages of development for all pedestrians from all development areas to surrounding areas. TfL requests that a description of the proposed network by phase be provided in the TA which identifies risks, opportunities and a package of measure to ensure that a holistic approach will be followed.</p> <p>The design of footway width and whether pedestrian and cycle use should be segregated or shared should be based on objective criteria, a Fruin or other level of service is recommended.</p> <p>All new or altered pedestrian bridges should include step free access to adjacent public highway. In terms of providing lifts instead of ramped access, the following should be considered:</p> <ul style="list-style-type: none"> Upgrading or provision of an at-grade alternative crossing; Reasons for rejecting ramps (or other step-free alternatives) that relate to usability; Full life cost of providing and maintaining lifts; Availability of lifts when a users' needs them e.g. likely periods of breakdown/ shutdown for maintenance, including risks of vandalism and misuse – suggested police advice be sought; Who maintains them? How will they be maintained? How will they be managed or monitored i.e. pro-active monitoring on a daily basis or reliance on public reporting faults? <p>Key pedestrian routes including bridges will need to be delivered up front to ensure ease of access to the main attractors, for example the route to Brent Cross Underground station should be constructed in advance of development taking place, and secured through planning obligations.</p>

Review of Walking Strategy (Non-Technical Walking Strategy supplied in draft form to TfL and published in November 2008)

Introduction

TfL support these objectives.

Removal of existing barriers to local pedestrian access, which are.....?

What about the needs of those who currently walk to the site and those from the immediate catchment?

How does the strategy draw on these documents?

Existing Services and Facilities

What characteristic do these roads have that make severance a specific issue?

What are current pedestrian desire lines around and to the site?

What specifically wrong with current pedestrian interchanges from a pedestrian viewpoint?

What information have you collected on the movement through the area by wheelchairs, blind, frail and other mobility impaired people?

Examples seem limited and don't cover the entire site, just relate to the A406, are there no issues elsewhere?

Railway arches at Staples Corner – what's proposed? E.g. your lighting proposals and footway widening. Converting arch etc. M1/A406 ramps/ crossing Tilling Road

Templehof Bridge

Policy Context

The Mayor's The Way to Go!

Improving urban realm

"After all, the advantage of a hop-on, hop-off platform is that you can decide on the spur of the moment that you like the look of the weather or the scenery or the shops, and opt to walk; and with the nation engaged in a struggle against obesity, we at TfL are going to do everything in our power to make walking through this city as attractive and enjoyable as possible.

- Encouraging imaginative urban realm projects and the use of 'shared space'

- Planting trees where possible
- Removing railings and other street clutter

Encouraging walking
Some streets are being redesigned with great care, with new paving, using traditional materials, and more trees and other greenery. But the most important transformation is in the balance of power between the pedestrian and the motorist. It is not that the car is banned from these spaces. It simply introduces an idea of shared space, an imperative that all road users have to think responsibly about the needs of each other. I passionately want to encourage these projects, because I believe that if we can pull them off without excessive (or any) damage to traffic flow, they will add greatly to the look and feel of living in London."

Maybe reference to design guidance would be appropriate here.

In context of TLRN, TfL Streetscape Guidance applies.

Consultation how did it influence scheme design and this strategy.

Development Proposal

Nothing wrong with the objectives but they don't go far enough and could be clearer. They could be:

- To encourage walking as a mode of access to the site from adjacent areas (within 2 kilometre catchment);
- To remove barriers to walking within the site and promote walking as a means of movement around the site;
- Minimise walk distance between the town centre and bus stops and provide direct and legible routes to public transport interchanges;
- Ensure at each stage of development that legible and comprehensive pedestrian network is in place that contributes to the end state.
- Ensure all residential units are less than 400 metres from a bus stop.

Support the 5 'Cs'. How will this be measured?

Is Street Hierarchy the right way to think about pedestrian movement?

Strategic Routes

What would BXC provide?

Primary Routes

What about links to West Hendon/Welsh Harp, Hendon Central and Golders Green/ Finchley from the north of the site?

What about links to Childs Hill, Cricklewood Broadway and Dollis Hill from the south of the site

Home Zones

Should consider where shared space and shared surfaces are appropriate on other parts of the public highway, not just in Home Zones

Delivery

How will demand be measured?

There is demand for capacity at critical places but also demand for links (more likely for pedestrians).

This does not seem like it should be linked to mode split targets.

PDP – what is proposed? How will links to public transport be improved?

What about pedestrian links to Templehof Bridge?

What about temporary routes during construction?

Best Practice for Local Walking Schemes
 Prepared for all London Boroughs and sub-regional Partnerships
 Mayor of London
 Transport for London
 Version 2.0 - April 2009

2.2 Walking interventions in multi-modal delivery

- 1) **Key Walking Routes to local attractor destinations tackling barriers to walking using a variety of treatments in a cross-modal context**
- 2) Use of walking audits to identify existing problems and shape future physical works programmes on Key Walking Routes
- 3) Proposals for scheme feasibility and innovative research leading to future work programmes on Key Walking Routes
- 4) Proposals to address known issues of safety and security on Key Walking Routes and other links
- 5) Provision of new or improved crossing facilities, ideally linked to Key Walking Routes
- 6) Proposals for major single infrastructure schemes ideally linked to Key Walking Routes
- 7) Proposals aimed at creating usable urban realm and iconic public space
- 8) Proposals to provide new walks for pleasure or enhancements to strategic routes

Key Walking Routes is not about one-off point treatments, but should include holistic and co-ordinated approaches to walking interventions including a range of elements that includes but not limited to:

- widening and improving footways
- increasing pedestrian directness
- revised and improved pedestrian crossings with greater pedestrian priority and accessibility including raised tables and dropped kerbs
- other measures to reduce the speed and impact of motor traffic
- decluttering of street furniture
- pedestrian legibility and environmental enhancements including hard and soft landscaping and seating
- pedestrian lighting improvements
- shared space where appropriate



BV 165			
Title	Pedestrian crossings with facilities for disabled people.		
Description	The percentage of pedestrian crossings with facilities for disabled people, as a proportion of all crossings in the local authority area.		
Purpose/aim	To monitor the number of crossings that have appropriate facilities for disabled people.		
Definition	<p>Calculate the percentage of signal controlled crossings incorporating dropped</p> <p>A 'pedestrian crossing' is defined for the purposes of this indicator as: a signal-controlled crossing carrying pedestrians across a highway from one</p> <p>a mid-block crossing of either a single or dual carriageway will count as one a four-arm junction with crossings on all arms would count as one crossing.</p> <p>Audible and tactile signals: Crossings installed before the revised indicator came into operation on 1 April Audible & Tactile Signals at Pelican Crossings, TAL 4/91, DTLR 1991. Audible & Tactile Signals at Signal Controlled Junctions, TAL 5/91, DTLR</p> <p>Tactile surfaces</p> <p>All crossings should be installed or refurbished with tactile paving and dropped</p> <p>Guidance on the use of tactile paving surfaces, DETR 1998 (dropped kerbs &</p> <p>General It is not possible for guidance to cover all potential variations in physical However, it is not acceptable for a crossing to be regarded as compliant in</p>		
Formula/Worked Eg.	<p>$N = (a / b) \times 100$</p> <p>Where: a = crossings with facilities for disabled people b = all crossings</p>		
Measurement Period	Current financial year	Data Source (if	N/A
Return Format	%	Decimal Places	1
Further Guidance	<p>For further guidance see the following</p> <p>The Design of Pedestrian Crossings, LTN 2/95, TSO 1995</p> <p>Puffin Pedestrian Crossings, TAL 1/01.</p> <p>Installation of Puffin Pedestrian Crossings, TAL 1/02.</p> <p>Inclusive Mobility - A guide to best practice on access to pedestrian and</p>		
Target Setting	Local		
Scope	County Councils, London Boroughs, Metropolitan Councils, Unitary Councils, Transport for London, Council of the Isles of Scilly, Common Council of the City of London.		

7.4 Surfacing



Bituminous surfaces should be laid to normal highway tolerances

7.4.1

Surfacing, whether on the carriageway or on a dedicated off-carriageway cycle facility, should be to a good standard so as not to slow cyclists or make their ride unsafe or uncomfortable. This means that bituminous surfaces should be well laid, normally by machine, with a finish to highway standards and including vertical tolerances no less stringent than applicable to highways. Potholes, rutting and other surface defects should be rectified. Patching or re-surfacing, and deeper trench reinstatements are to be carried out as necessary.

7.4.2

A range of surfacing materials can be used as shown in figure 7.2. These will often depend on the individual location. Streetscape issues are particularly important in conservation and other sensitive areas. Due consideration should be given to the streetscape implications of surfacing materials in all areas.

7.4.3

Where anti-skid surfacing is used, it should continue over ironwork particularly where cyclists are likely to be changing direction.

Figure 7.2
Surfacing material options

Surfacing material	Comments
Stone mastic asphalt (SMA)	Normal main road surface (generally superseding hot rolled asphalt (HRA)), good for cycling
Hot rolled asphalt (HRA)	Normal main road surface, good for cycling
Bituminous macadam (bitmac)	Normal minor road and footway surface material, good for cycling. Some grades can be obtained coloured.
Fine cold asphalt	Footway surfacing material, smooth and good for cycling on but tends to be bumpy as hand laid
Concrete	Historically used on estate roads, good for cycling if the joints and slabs are in good condition, but surface markings are not clearly visible
High friction surfacing (Anti-skid)	Normally good for cycling but laying methods resulting in ridges should be avoided
Coloured Veneer Coat	Specialist coloured surfaces in green, red etc. laid on to wearing courses, normally anti-skid
Surface dressing – Granite Stone	A cheap maintenance layer, good for cycling if the stone size is not too large (10-14mm)
Surface Dressing – Pea Shingle (6-8mm stone)	A cheap maintenance layer, good for rural/park situations, lower skid resistance, was used on country roads
Slurry Sealing	A cheap maintenance layer, suitable for temporary cycling use only
Brick or Block Paving	Acceptable for cycling on, skid resistance can be low on some brick paving
Paving slabs/flags 600x900	Not suitable as a general cycling surface because of lower wet skid resistance and risks of trips and rocking
Modular Paving 400x400	As for paving slabs although less tendency for rocking and trip hazard. Note use for tactile paving slabs.
Natural Stone blocks	May be suitable if bedded on mortar/concrete and surface is not uneven or smooth, and has good skid resistance
Granite Setts	Too rough for some bikes, but if laid flush can be acceptable in limited areas. Can polish with use and be slippery when wet.
Cobbles (Pebbles in concrete)	Appropriate as deterrent paving for pedestrians. Not acceptable for cycling, as uneven surface with poor skid resistance.
Graded Aggregate e.g. Limestone fines to dust and Cowell gravel	Often used for rural paths, but poor skid resistance and not very durable
Ungraded Aggregate i.e. Shingle, Ballast, Scalping	Not suitable. Bike wheels will sink in. Poorly graded materials such as ballast or scalping will also be rough and not be acceptable for surfacing.

Chapter 7

Construction including surfacing

London Cycling Design Standards

Smooth riding surfaces are required, with no step changes in level or undulations

Appropriate surface materials should be used

7.4.4

A variety of types of coloured surfacing are available, which have a range of skid resistance, surface texture, durability and colour-fastness. They can be naturally coloured aggregate materials, coloured bituminous macadam, or veneer coats laid on top of hot rolled asphalt (HRA), stone mastic asphalt (SMA) or other bituminous wearing courses.

7.4.5

Cost implications need to be considered, with rates ranging from about £5/m² for slurry seals to over £20/m² for some high friction surfaces. Green colours tend to be more expensive and less colour-fast, but product quality is improving in this respect. Figure 7.3 shows some of the coloured surfacing that is available together with approximate cost estimates per square metre laid and the polished stone value (PSV). Laying costs can vary considerably depending on the area (m²) and the traffic management arrangements that are required.

Figure 7.3
Surface treatments and costs

Surfacing Material	Life (years)	Skid resistance PSV	Cost per square metre (£) (2005)		
			Normal	Red	Green
Bituminous Macadam 6mm aggregate, 20mm thick	20	60	3-4	10	20
Bus Lane Surface Dressing – red stone and polymer or epoxy binder	10	60	-	15	-
Anti-Skid (epoxy resin binder)	10	70+	12	13-15	13-15
Cycle Track Veneer (thermoplastic slurry)	5	65	8	8	8
Cycle Lane Veneer (polymer binder)	10	65	10	12	12
Surface Dressing – Granite Stone (bituminous binder)	20	60+	4-5	5	5
Surface Dressing – Granite Stone (clear binder colour enhance)	20	60	-	8	8
Surface Dressing – Sea Shingle Stone	20	50	4-5	-	-
Slurry Seal (poor colour and life)	5	55	2	4	4
Coloured stone mastic asphalt (SMA) 30mm thick	20	60	-	20-25	20-65
Block paving	20	55	20-30	20-30	-
Brick paving	20	-	-	20-40	-
Concrete Paving flags	10	-	15-30	-	-
Tactile paving	10	-	30-40	-	-
York stone flags	20	-	100-130	-	-

Notes:

1. Traffic management costs not included – these can double costs
2. Small areas will normally cost far more, maybe double or more
3. Difficult and restricted access such as along towpaths may increase costs
4. Surfacing dressings will have bituminous binders unless otherwise stated.
5. PSV is a measure of the Polished Stone Value. A PSV of 55 is a normal acceptable road skid resistance.

7.13.3

Additional cost may also occur because of the poor standard of the existing and adjacent streets. Top-up funding from maintenance and other budgets should be sought in such cases.

Figure 7.5
Typical Construction Costs

Category	Item	Unit	Cost (£) (2005)
Construction	Gravel or limestone path (250mm thick, no excavation)	m ²	10-15
	Track construction (250mm thick, type 1) plus bitmac base (no excavation or surfacing)	m ²	20-35
	Extra for excavation and disposal	m ²	10-20
	Extra for surfacing (see figure 7.3)	m ²	4-30
	Extra for edging	m	10
	Extra for concrete kerbing	m	20-30
	Extra for granite kerbing	m	80-100
Drainage	Road gully including pot	No.	500-800
	Gully connection	m	100-200
Lighting	Relocate lighting column (incl. connections)	No.	700-1000
	New lighting column (incl. connections)	No.	700-1000
	Illuminated bollard (incl. connections)	No.	300-500
Marking	White line	m	2
	Raised white line [1049.1]	m	10
	Cycle logo [1057]	No.	15-30
Parking	Sheffield stand	No.	150-300
	Cycle locker including base	No.	1000
Signals	Conversion of Pelican to Toucan	No.	15-20,000
	Toucan on single carriageway	No.	25-50,000
	Toucan on dual carriageway	No.	50-100,000
Signs	Small Signs (up to 0.5 m ²)	No.	75
	Medium sign (0.5-1 m ²)	No.	100
	Extra for sign post	No.	100
	Extra for illumination on lighting column	No.	250
	Extra for illumination on new post	No.	400-500
	Bollard - cast iron or stainless steel	No.	200-300

Notes:

1. These costs do not include traffic management
2. Costs can vary considerably

7.13.4

For different types of cycle facility a global cost estimate may be useful. The following figure 7.6 shows overall cost estimates for various types of facility.

Chapter 7

Construction including surfacing

London Cycling Design Standards

Type of facility	Cost range (£000s/Km) (2005)
Gyratory type junctions	500+
Cycle track with major junctions	300-800
Cycle track with simple junctions	100-300
Segregated path with major junctions	250-400
Segregated path with minor junctions	100-200
Shared path many junctions	70-130
Shared path (conversion), few junctions	30-60
Kerb segregated lane, many junctions	300-800
Kerb segregated lane, few junctions	100-300
Cycle lane with bSLs many junctions	40-80
Cycle lane with few junctions	20-40
Cycle lanes on bus lane route	20-40
Home zones / cycle streets	300-800
Traffic calmed/ managed area	100-300
Quiet routes town centres	40-80
Quiet routes suburban	10-20

Figure 7.6
Global costs of various
types of cycle facility

Giedre Duan

From: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>
Sent: 05 August 2013 14:54
To: 'Bartlett, Mervyn'; John Hadley
Cc: 'Cowie, Martin'; 'Capelli, Nicola'; 'Westbrook, Tony'; 'Mercer, Karen'; 'McDonald, Stephen'; 'Latty, Angela'; Charleton Patricia; 'Roger Fortune'; John Orchard; Margaret Theobald
Subject: RE: BXC - Scoping documents - Phase 1 Ped & Cycle, Area wide ped & cycle, Monitoring

Dear John,

TfL comments:

Area Wide Walking and Cycling Study scope + Phase 1 Pedestrian and Cycling Strategy scope – no comments on either – but an observation a) TfL cyclists/ pedestrian experts will need to be involved as we go forward b) it will be appropriate at some point to present the study to Mayor's Cycling Commissioner and potentially to the Mayor so they are aware on what is being decided here. For A5 TfL suggested joint inspection meeting, similar is needed for the study.

Therefore, subject to Mervyn's comments below, and consideration of TfL comments above, I don't believe TfL will have further comments to make on the above documents.

Melvyn Dresner

Principal Technical Planner| East Team| Borough Planning

Transport for London
9th Floor Windsor House
42-50 Victoria Street
SW1H 0TL

Tel: (020) 3054 7034 | **Auto:** 87034

For more information regarding the **TfL Borough Planning** then please visit <http://www.tfl.gov.uk/businessandpartners/15393.aspx> here you can find information on the team, TfL's transport assessment best practice guidance and charging for pre-application advice processes. If you have any other questions then please contact me to discuss

 *Please consider the environment before printing this e-mail*

From: Bartlett, Mervyn [<mailto:Mervyn.Bartlett@barnet.gov.uk>]
Sent: 02 August 2013 19:05
To: John Hadley
Cc: Cowie, Martin; Capelli, Nicola; Westbrook, Tony; Mercer, Karen; McDonald, Stephen; Latty, Angela; Charleton Patricia; Roger Fortune; Dresner Melvyn (ST); John Orchard; Margaret Theobald
Subject: FW: BXC - Scoping documents - Phase 1 Ped & Cycle, Area wide ped & cycle, Monitoring

Dear John,

I have the following comments, mostly minor, on the attached scopes (note I have also attached the track changes Monitoring Strategy scope you kindly sent me earlier):-

Area wide Walking & Cycling

- App A - Conditions included but have they been referred to in the Scope?
- App B needs to be attached
- 2.1.1 should refer to App D, not C
- 2.2.2 last bullet on p3 is okay as discussed with Margaret recently that other phases will be examined through forthcoming phase Strategies (ref Cond 2.8)
- 4.1.1 should cross-ref to Monitoring Strategy

- 5.1 new text has 2 typos

Phase 1 Pedestrian & Cycle Strategy

- please attach the appendices
- p2 and Camden ?
- 2.2 last sentence should be S73
- 2.2.2 should also include any temporary routes due to construction activities (ditto 4.1)
- section 2 general - policy documents not referred to
- 3.1 p5, 2nd set of bullets, some destinations are missing/omitted e.g. Colindale?
- 4.3 (&/or other sections) can you clarify which plans will show the actual routes
- 5.1 para 3 London Cycle Design Standards to be referred to in full
- 6.1 sentence above bullets should read " At the time of writing this scope it is proposed that in addition to the above the following"
- 8.1 should refer to Area wide Study in para 4 (not strategy)

Subject to the above I expect these scopes can be accepted on re-issue

Kind regards,

Mervyn Bartlett - Transport & Regeneration Manager, Development and Regulatory Services

London Borough of Barnet, North London Business Park, Oakleigh Road South, London N11 1NP

Tel: 020 8359 3052 Mobile: 07984 162832 Email: mervyn.bartlett@barnet.gov.uk

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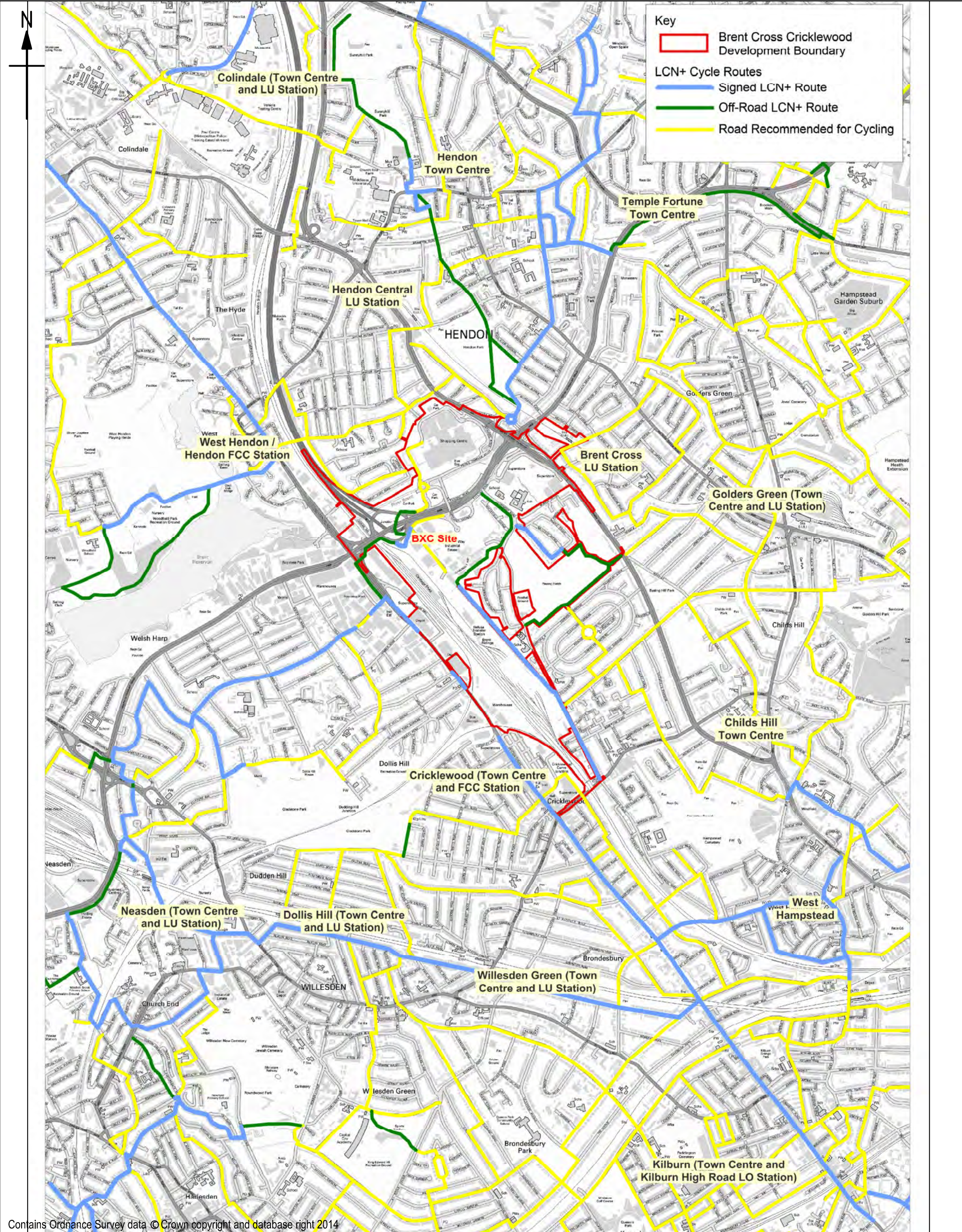


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APPENDIX B TFL CYCLE ROUTES

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Drawing Title

Brent Cross Cricklewood
PERS and CERS Findings Report
NCN+ Route Network

Scale @ A4
NTS

Drawn
KP
Date
May 14

Checked
MW

Approved
MT
Rev
-

Drawing Number
47066786\PERSCERS\001



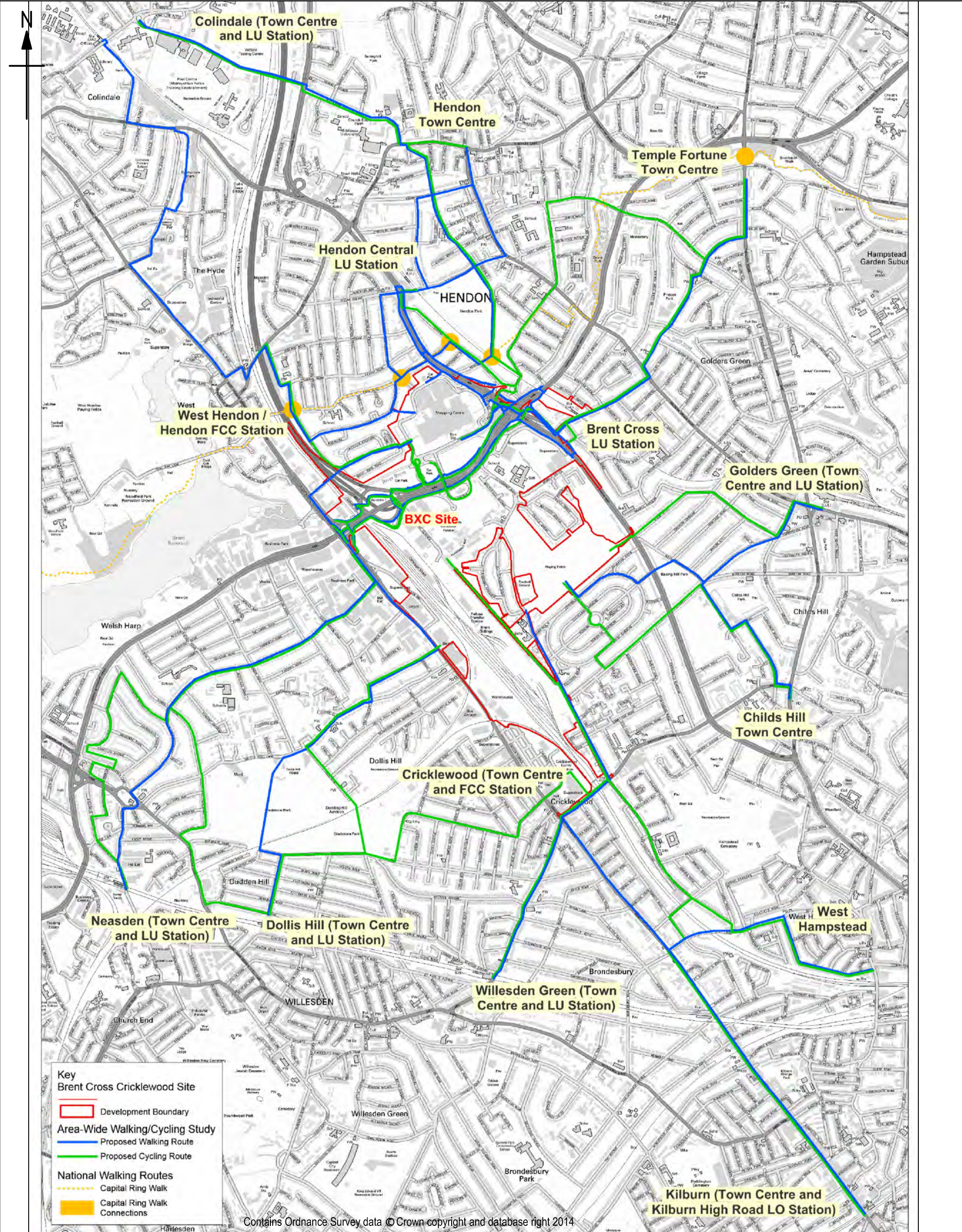
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APPENDIX C AWWC STUDY ROUTES AUDITED

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APPENDIX D BRENT CROSS CRICKELWOOD PERS AND CERS FINDINGS REPORT (47065005-TP-RPT-033 REV 2)

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Brent Cross Cricklewood

PERS and CERS Audit
Findings Report

Doc. No: 47065005-TP-
RPT-033

Revision 2

Prepared for:
Brent Cross Cricklewood
Development Partners

UNITED
KINGDOM &
IRELAND



PERS and CERS Audit Findings Report

Doc. No: 47065005-TP-RPT-033

Rev	Date	Details	Prepared by	Checked by	Approved by
01	09-May-14	For comments	Kimberley Pettingill Transport Consultant	Mark Watson Principal Transport Consultant	Margaret Theobald Technical Director
02	01-Aug-14	Final	Kimberley Pettingill Transport Consultant	Mark Watson Principal Transport Consultant	Margaret Theobald Technical Director

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The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by URS has not been independently verified by URS, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by URS in providing its services are outlined in this Report. The work described in this Report is based on the conditions encountered and the information. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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1. INTRODUCTION

1.1 Background and Brief

URS has been commissioned by the Brent Cross Development Partners to produce an Area Wide Walking and Cycling Study (AWWC Study) as required in Condition 1.20 of the Section 73 permission and defined in Schedules 1, 3, 15 and 17. This study is required to examine the pedestrian and cycle routes connecting the Brent Cross Cricklewood (BXC) site to the surrounding areas and key destinations. As part of the AWWC study, an audit of pedestrian and cycling environments on key routes to and from the BXC site has been carried out using PERS (Pedestrian Environment Review System) and CERS (Cycling Environment Review System). In addition, at TfL's request, the walking and cycling links alongside the A406 and A41 were assessed and links along the A5 were reviewed as part of the A5 Corridor Study.

PERS and CERS are software applications used to assess the quality of pedestrian and cycling environments respectively. The PERS and CERS software tools are part of the Streetaudit suite of programmes co-developed by the Transport Research Laboratory (TRL) in partnership with TfL. The TfL Edition of the Streetaudit software (version 1.1.10.211) has been used within the BXC study in accordance with the guidance provided in the following TfL/TRL documents:

- 'Streetaudit Pedestrian Mode, Pedestrian Environment Review System for London Pedestrian Mode Handbook, Version SA1.1, May 2011'; and
- 'Streetaudit Cycling Mode, Cycling Environment Review System Cycling Mode Handbook, Version 1.0, May 2011'.

This report provides a summary of the findings of all of the pedestrian and cycle route (PERS and CERS) audits undertaken as detailed above.

1.2 Report Structure

Following on from this section the remainder of the report is structured as follows:

- Section 2 provides details of the routes audited and briefly describes the methodology used to undertake the audits;
- Section 3 provides audit finding plans, a brief description of the audit findings and tables outlining the PERS and CERS scores and key identified issues; and
- Section 4 provides a summary to the report.

Full PERS and CERS outputs are held in **Appendix C**.

2. ROUTES AUDITED

2.1 Key Destinations

A scoping exercise was initially carried out with TfL and LB Barnet to establish the requirements of the AWWC study and the specific outputs required following its completion.

During the scoping exercise, key areas were identified in the vicinity of the proposed BXC site to be incorporated into the AWWC study route review. The key areas include high-density residential zones, key transport nodes including London Underground (LU) and National Rail (NR) stations and commercial high streets, which are likely to attract and/or generate large numbers of walking and cycling trips to and from the BXC site.

As part of the scoping process a total of 14 key origins/destinations were identified as directly relevant to the BXC development location. These include:

- Neasden (Town Centre and LU Station);
- Dollis Hill (Town Centre and LU Station);
- Colindale (Town Centre and LU Station);
- West Hendon/Hendon FCC Station;
- Hendon Central LU Station;
- Hendon Town Centre;
- Temple Fortune Town Centre;
- Brent Cross LU Station;
- Childs Hill Town Centre;
- Golders Green (Town Centre and LU Station);
- Cricklewood (Town Centre and First Capital Connect (FCC) Station);
- Kilburn (Town Centre and Kilburn High Road London Overground (LO) Station);
- Willesden Green (Town Centre and LU Station);
- West Hampstead.

In addition, at TfL's request, the walking and cycling links alongside the A406 and A41 were assessed and links along the A5 were reviewed as part of the A5 Corridor Study.

2.2 Identified Routes to Key Destinations

Routes to and from the key areas outlined above were identified, offering the optimum means of accessing the BXC site either on foot or by bicycle. These were initially designated by way of a desktop assessment, using the TfL online journey planner tool to identify the most direct and convenient routes for both footway and cyclist traffic to and from the 14 key areas.

In addition to using TfL's online journey planner tool for route definition, cycle routes were also defined using London Cycle Network (LCN+) maps. Where possible, proposed cycle routes between the 14 key origins/destinations and the BXC site were plotted along existing cycle routes or routes recommended for use by cyclists as part of the LCN+ network. A plot of the current LCN+ routes is shown in **Appendix A**.

The exact routes were additionally reviewed and finalised following discussions with TfL, and LB Barnet, LB Camden and LB Brent in October 2013.

Following this, a total of 16 walking and 17 cycling routes were identified to and from the 14 key walking and cycling trip attractors/generators. In addition, links alongside the A41, A406 and A5 were identified. **Table 2.1** below outlines the 33 pedestrian and cycle routes identified to each key area and the links identified alongside the A41, A406 and A5 corridors.

Table 2.1 Pedestrian and Cycle Routes Audited

Key Areas	Route Name	Pedestrian Route	Cycle Route
Neasden (Town Centre and LU Station)	Neasden (LU Station)	Layfield Road - Edgware Road - Oxgate Lane - Crest Road - Tanfield Avenue - Neasden Lane	Edgware Road - Oxgate Lane - Crest Road - Tanfield Avenue - Kenwyn Drive - Avondale Avenue - Ballogie Avenue - Lansdowne Grove - Neasden Lane
Dollis Hill (Town Centre and LU Station)	Dollis Hill	Layfield Road - Edgware Road - Oxgate Gardens - Dollis Hill Lane - Gladstone Park - Hamilton Road	-
	Dollis Hill (Signed Route via Crest Road)	-	Edgware Road - Oxgate Lane - Crest Road - Tanfield Avenue - Tanfield Avenue - Dudden Hill Lane - Burnley Road
	Dollis Hill (Off-Road Route)	-	Oxgate Gardens - Dollis Hill Lane - Park Side - Gladstone Park - Kendal Road - Hamilton Road
	Dollis Hill (Recommended Route)	-	Brent Terrace - Claremont Road - Cricklewood Lane - Depot Approach - Ashford Lane - Olive Road - Kendal Road - Hamilton Road
Colindale (Town Centre and LU Station)	Colindale (Town Centre Route)	Sturgess Park - Sturgess Avenue - Park Road - Cheyne Walk - Hendon Park - West View - Church End - Greyhound Hill - Aerodrome Road	-
	Colindale (LU Station Route)	Sturgess Park - Sturgess Avenue - Dallas Road - Station Road - Herbert Road - Edgware Road (A5) - Rookery Way - Rushgrove Park - Colindeep Lane - Sheaveshill Avenue - Colindale Park	-

	Colindale (Town Centre / LU Station Route)	–	Prince Charles Drive - Shirehall Lane - Hendon Park - West View - Church End - Greyhound Hill - Aerodrome Road - Colindale Avenue
West Hendon/Hendon FCC Station	West Hendon	Sturgess Park - Sturgess Avenue - Dallas Road - Mount Road - Algernon Road - Station Road	Sturgess Park - Sturgess Avenue - Dallas Road - Mount Road - Algernon Road - Station Road
Hendon Central LU Station	Hendon Central (LU Station)	Sturgess Park - Sturgess Avenue - Allington Road	Prince Charles Drive - Renters Avenue - Cheyne Walk - Hendon Road
Hendon Town Centre	Hendon Town Centre (Residential Road Route)	Sturgess Park - Sturgess Avenue - Allington Road - Vivian Avenue - Queen's Road - Wykeham Road - Brampton Grove - Brent Street	–
	Hendon (Main Road Route)	Sturgess Park - Sturgess Avenue - Hendon Way - Queen's Road - Brent Street	–
	Hendon	–	Prince Charles Drive - Hendon Park - West View - Church Road
Temple Fortune Town Centre	Temple Fortune	Prince Charles Road- Under A406/A41 - Highfield Avenue - Golders Green Road - Highfield Road - Oakfield Roads - Hallswelle Road - Finchley Road	–
	Temple Fortune (Signed Route)	–	Prince Charles Drive - Under A406 - Shirehall Lane - Green Lane - Bell Lane/Bridge Lane - Hallswelle Road - Finchley Road
	Temple Fortune (Recommended Route)	–	Prince Charles Drive - Under A406 - Highfield Avenue - Golders Green Road - Highfield Road - Oakfields Road - Hallswelle Road - Finchley Road
Brent Cross LU Station	Brent Cross (LU Station)	Prince Charles Drive - Under A406/A41 - Highfield Avenue	Prince Charles Drive - Under A406/A41 - Highfield Avenue
Childs Hill Town Centre	Childs Hill (Town Centre)	Cotswold Gardens- Pennine Drive - Basing Hill Park - Wayside - Granville Road - Nant Road - Crewys Road - Cricklewood Lane	Purbeck Road - Cheviot Gardens - Mendip Drive - The Vale - Granville Road - Nant Road - Crewys Road - Cricklewood Lane

Golders Green (Town Centre and LU Station)	Golders Green (LU Station)	Cotswold Gardens- Pennine Drive - Basing Hill Park - Wayside - The Vale - Hodford Road - Golders Green Road	Ridge Hill - The Ridgeway - Hodford Road - Golders Green Road
Cricklewood (Town Centre and First Capital Connect (FCC) Station)	Cricklewood	Claremont Road - Cricklewood Lane	Brent Terrace - Claremont Road - Cricklewood Lane
Kilburn (Town Centre and Kilburn High Road London Overground (LO) Station)	Kilburn High Road	Claremont Road - Cricklewood Lane - A5	Claremont Road - Lichfield Road - Minster Road - Fordwych Road - Mill Lane - A5
Willesden Green (Town Centre and LU Station)	Willesden Green (LU Station)	Claremont Road - Cricklewood Lane - Chichelle Road - Walm Lane	Brent Terrace - Claremont Road - Cricklewood Lane - Chichelle Road - Walm Lane
West Hampstead	West Hampstead	Claremont Road - Cricklewood Lane - A5 - Maygrove Road - Mill Lane - Sumatra Road	Claremont Road - Lichfield Road - Westbere Road - Mill Lane - Sumatra Road
A406	Between Brent Cross Flyover and A5	Footbridges under A406 – links between footbridges (under rail line) – M1 footbridge – Tilling Road / Etheridge Road – Templehof Avenue – A406 footways – A406 footbridge at Shirehall Park	Footbridges under A406 – links between footbridges (under rail line) – M1 footbridge – Tilling Road / Etheridge Road – Templehof Avenue - A406 footways
A41	Between A41/Queens Road/Vivian Avenue junction and superstore underpass	A41 footways – Haley Road / Spalding Road – A41 subway connecting Haley Road/ Spalding Road – Brent Cross Flyover footbridge / subways – Brentfield Gardens – Footways alongside A41 – subway to superstore under A41	-
A5	Between A406 and Minster Road	Footbridges under A406 - footways alongside A5 between A5/A406 junction and Minster Road	Footbridges under A406 / carriageway under A406 – A5 carriageway between A5/A406 junction and Minster Road

All 33 routes to key destinations are shown on the plan held within **Appendix B**, the routes alongside the A406 and A41 corridors are shown in **Figures 3.16.A** and **3.16.B**, and the routes along the A5 corridor shown in **Appendix D**.

All routes were discussed and agreed with TfL and LBB prior to the audit.

2.3

PERS and CERS Methodology

PERS and CERS have been used to assess the level of service and quality provided for pedestrians and cyclists across a range of pedestrian and cycling environments, and as part of a number of corridors allowing access between the Brent Cross Cricklewood site and nearby key originators and attractors.

The approach used as part of the PERS and CERS audits closely followed the best practice guidance as outlined within the PERS and CERS handbooks titled:

- 'Streetaudit Pedestrian Mode, Pedestrian Environment Review System for London Pedestrian Mode Handbook, Version SA1.1, May 2011'; and
- 'Streetaudit Cycling Mode, Cycling Environment Review System Cycling Mode Handbook, Version 1.0, May 2011'.

2.4 On-Site Evaluation

Due to the extent of the study area, the on-site evaluation of the individual walking and cycling routes and the A41, A406 and A5 corridors were carried out over a number of days. PERS audits were carried out by two teams of two reviewers on 24th, 30th and 31st of October 2013 and 9th December 2014 during daylight hours, with all pre-agreed routes being walked. Ratings relating to all elements of the audited pedestrian routes were gathered using the PERS forms, with comments additionally included to justify the scores awarded. Photographs were additionally taken along all of the audited corridors, with a focus on issues and problems.

CERS audits were carried out by a team of two reviewers on 30th and 31st of October, 7th November 2013 and 9th December 2013 during daylight hours. CERS forms were filled in with scores and comments relating to issues noted on site. Photos were also taken to document any observed issues.

2.5 Assessment Components

Pedestrian Environment

The elements of the pedestrian environment that were considered within this PERS audit are shown in **Table 2.2**.

Table 2.2 PERS Audit Components

Element	Component
Link	Effective width, dropped kerbs, gradient, obstructions, permeability, legibility lighting, tactile information, colour contrast, personal security, surface quality, user conflict, quality of environment, maintenance.
Crossing	Legibility for sensory impaired people, dropped kerbs, gradient, obstructions, surface quality, maintenance, crossing provision, deviation from desire line, performance, crossing capacity, delay, legibility,
Public transport waiting area	Information to the waiting area, infrastructure to the waiting area, boarding public transport, information at the waiting area, safety perceptions, security measures, lighting, quality of the environment, maintenance and cleanliness, waiting area comfort.
Interchange spaces	Moving between modes, identifying where to go, personal safety, feeling comfortable, quality of the environment, maintenance
Public Spaces	Moving in the space, interpreting the space, personal safety, feeling comfortable, sense of place, opportunity for activity
Routes	Directness, permeability, road safety, personal security, legibility, rest points, quality of the environment

Cycle environment

The elements of the cycle environment that were considered within this CERS audit are shown in **Table 2.3**.

Table 2.3 CERS audit components

Element	Component
Link	Continuity, legibility, directness, conflict points, traffic volume, traffic proximity/mix, traffic speed, surface quality, maintenance, overall effort, personal security, lighting and quality of environment.
Junction	Cyclist provision, deviation from desire line, legibility, performance, capacity, delay, sightlines, gradient, surface quality, obstructions and maintenance.
Cycle parking areas	Location, type, positioning and visibility, availability, ease of use, accessibility from link, perceived security, evidence of theft/damage, perception of safety, other street users, presence of shelter, information provision, maintenance, durability of materials and other amenities.
Interchange Spaces	Moving between modes, identifying where to go, personal safety, personal security, cycle parking, quality of environment, feeling comfortable, maintenance
Routes	Directness, permeability/intersections, legibility/identifying where to go, road safety, personal security, rest points/feeling comfortable, cycle parking, quality of environment, obstructions, maintenance

2.6 Data Analysis

Following the on-site evaluation, data gathered as part of the site visits was entered into the Streetaudit software (Version 1.1.10.211), with on-site rating, comments and photographs used to assist in the overall score allocation for pedestrian and cycling environment parameters and for the calculation of the overall score for all features in question.

2.7 Display and Review of Findings

Scores for each of the elements of the pedestrian and cycling environments have been grouped into colour bands in line with the PERS and CERS Red Amber Green (RAG) colour scale.

The scoring scale is set out below. Each characteristic is scored on a range from -3 to +3, where +3 is very good and -3 is very poor. For a parameter to warrant a score of +3, it would need to be exemplary and of a standard to be identified as best practice. The PERS and CERS scoring scale is shown in **Figure 2.1**.

Figure 2.1 PERS/CERS Scoring Scale



As detailed in Figure 2.1 the colour ratings represent the following:

- green represents good or very good provision;
- amber represents average provision with some features that give cause for concern; and
- red represents a facility or aspect that displays a significant cause for concern.

Scores are then weighted based on their relative importance to pedestrians and cyclists. For both the PERS and CERS audits, the default weighting systems were used. The default weighting systems are set by audited element (i.e. link, crossing, junction, etc.) and vary between each element.

Error! Reference source not found.2 demonstrates an example minimum and maximum score that can be achieved using the default weighting system for the PERS links.

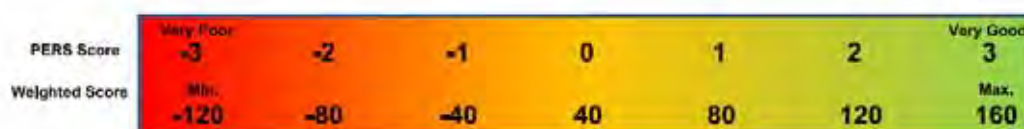


Figure 2.2 Example of min and max scores using default weighting system – PERS links

Plots displaying the colour bandings have been generated to allow for an at-a-glance assessment of the pedestrian and cycling environment along each of the 33 audited routes and the A41/A406/A5 corridor routes. These are presented and discussed in the following section of this report.

2.8 Weighted Scores and Resultant RAG Ratings

The weighted scores and resultant RAG ratings for each pedestrian and cycle element audited are shown in **Table 2.4** and **2.5**.

Table 2.4 Weighted Scores and Resultant RAG Ratings – PERS

PERS Audited Element	Weighted Score Range		
	Red	Amber	Green
Link	Between -41 and -120	Between +42 to -40	Between +160 and +43
Crossing	Between -31 and -90	Between +31 to -30	Between +120 and +32
Public Transport Waiting Area	Between -33 and -96	Between +33 to -32	Between +128 and +34
Public Space	Between -41 to -60	Between +42 and -40	Between +80 and +43
Interchange	Between -39 to -54	Between +40 and -38	Between +72 and +41
Route	Between -34 and -69	Between +34 and -33	Between +92 and +35

Table 2.5 Weighted Scores and Resultant RAG Ratings – CERS

CERS Audited Element	Weighted Score Range		
	Red	Amber	Green
Link	Between -100 and -150	Between +49 to -99	Between +150 and +50
Junction	Between -68 and -102	Between +33 to -67	Between +102 and +34
Cycle Parking	Between -94 and -141	Between +46 and -93	Between +141 and +47
Interchange	Between -54 and -81	Between +26 and -53	Between +81 and +27
Route	Between -60 and -90	Between -29 and -59	Between +90 and +30

3. AUDIT FINDINGS

3.1 Background

This section presents findings from the PERS and CERS audits in terms of the quality of links, crossings, bus stops, junctions and all other elements of the pedestrian and cycling environment along the agreed walking and cycling routes to and from the BXC site.

The findings for all 33 routes and routes alongside the A406, A41 and A5 corridors are documented in the sections below where route plans illustrating the resultant RAG rating along with a brief route description are provided. In addition, tables summarising the score for each audited element and the key issues identified are provided. The routes are presented by destination in the sections below.

The full PERS and CERS outputs for each of the 33 routes and A406, A41 and A5 corridor routes audited are held in **Appendix C1-C16**.

A key/list of abbreviations for **Figures 3.2.A to 3.16.B** is provided below:



3.2 Routes to/from Neasden (Town Centre and LU Station)

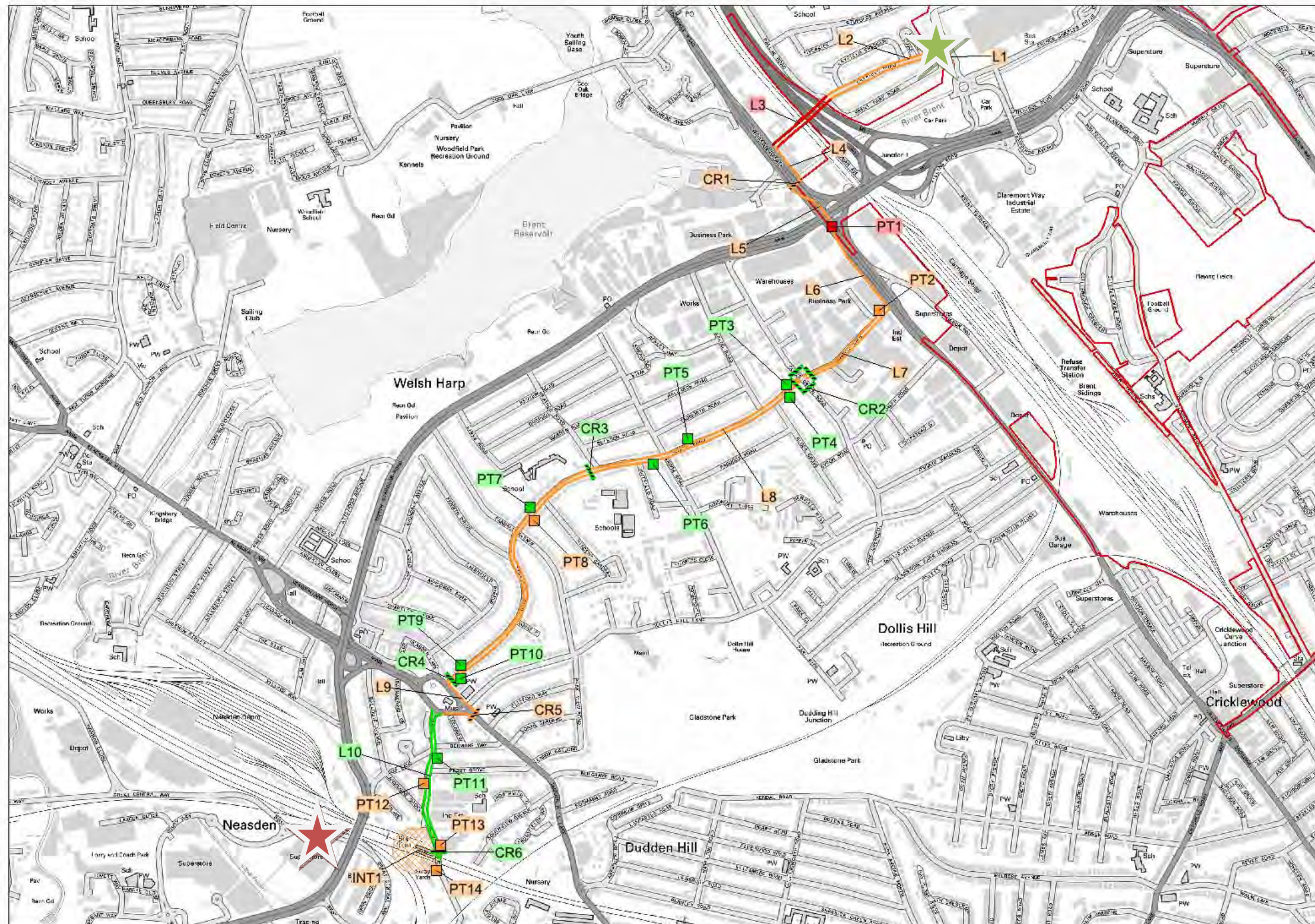
The route between the Brent Cross site and Neasden LU Station is shown in **Figures 3.2.A** and **3.2.B**, with the cycling and walking routes following a largely similar path for a significant proportion of the route. Full PERS and CERS outputs for the routes to/from Neasden (LU station) are held in **Appendix C1**.

3.2.1 PERS Route / Findings

The links which make up the pedestrian route are largely residential roads with a small number of links along the strategic road network (the A5 and across the A406). A number of pelican crossings and bus stops are included as part of the route with its corridor ending at the Neasden interchange. The PERS scores for the route are presented in **Figure 3.2.A**.

The PERS analysis suggests that the majority of links along this route are of average condition with most links rated as amber on the RAG scale. Brent Park Road was rated red and Neasden Lane was rated green as part of the PERS assessment. Crossings along this route were predominantly of good condition with bus stops also rated either amber or green, suggesting average to good provision.

Figure 3.2.A PERS Route and RAG Scores for the Neasden (LU Station) Route



Start of route



End of route





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Table 3.2.A below summarises the PERS scores and key issues for each audited element of the route.

Table 3.2.A PERS Scores and Further Details – of the Neasden (LU Station) Route

Parameter / Name	Key Issues Identified	Photograph	PERS Score
Link			
L1 – Access Road	Width restriction (barriers) No signage or tactile information Conflict with vehicles and bicycles Isolated and remote Uneven surface		-20
L2 – Layfield Road	Obstructions in footway including bins, vegetation Uneven, poor quality surface with ponding and root damage No signage, dropped kerbs or tactile paving		-9
L3 – Brent Park Road	Width restriction in tunnel, bollards in footway Remote and feels unsafe, graffiti, rubbish, poor lighting Conflict with traffic at builders yard No dropped kerbs or tactile paving		-57
L4 – A5 (Brent Park Road to A406)	No dropped kerbs or tactile paving Traffic dominated environment, noise and air pollution, no permeability Damage to footway, no soft landscaping		-1



L5 – Footbridge over A406	No signage, unclear where to go Conflict with cyclists Isolated, traffic dominated, noisy poor perception of personal safety Ponding, rubbish No lighting		-16
L6 – A5 (A406 to Oxgate Lane)	Obstructions on footway Conflict with cyclists on footway Poor signage, dropped kerbs and tactile information Uneven surface with rubbish and foliage Traffic dominated environment, noisy, unsafe, remote		-11
L7 – Oxgate Lane	Width restrictions due to obstructions – parked cars, trees, bins Poor visual appeal, poor quality materials and unattractive frontages Damaged footway with ponding, trip hazards, tree root damage Limited dropped kerbs and tactile information Few crossing points, poor permeability No signage, directional information Poor lighting		-40
L8 – Crest Road	Obstructions including parked cars, bins, bus stops, all reducing width Damaged footway including ponding, root damage and cracked paving		13

L9 – Dudden Hill Lane Roundabout	Fencing, bollards, lighting columns restricting available footway width Poor permeability, busy junction, traffic dominated environment Feels unsafe, remote		-13
L10 – Neasden Lane	No directional signage		68
Crossing			
CR1 – A5 pelican crossing	No signage or directional information No audible information Traffic queuing across pedestrian crossing		17
CR2 – Coles Green Road / Crest Road pelican crossing	Long delay waiting for pedestrian phase Short pedestrian phase		46
CR3 – Crest Road / Heather Road zebra crossing	Faded road markings		51

CR4 – Tanfield Avenue / Dudden Hill Lane zebra crossing	Faded road markings Obstructions on adjoining footway Located away from bus stop desire line		42
CR5 – Dudden Hill Lane pelican crossing	Long delay Vegetation in footway Away from desire line for crossing roundabout Faded road markings		30
CR6 – Neasden Lane pelican crossing	Street furniture and parked bicycles restricting access to crossing		43
Public Transport Waiting Area			
PT1 – Staples Corner	Remote, unattractive location, traffic dominated Few facilities nearby Uneven footway No live bus arrivals information		-35
PT2 – Oxgate Lane / A5	Industrial land uses nearby, far from amenities Traffic dominated environment No live bus arrivals system		31

PT3 – Crest Road / Coles Green Road EB	No issues		46
PT4 – Crest Road / Coles Green Road WB	No issues		54
PT5 – Crest Road / Brook Road EB	No maps in shelter		43
PT6 – Crest Road / Brook Road WB	No maps in shelter		43
PT7 – Tanfield Road / Vincent Gardens EB	No issues		41

PT8 – Tanfield Road / Vincent Gardens WB	No maps or live bus arrivals information in shelter Unattractive surroundings/building frontages Graffiti		28
PT9 – Tanfield Road / Dudden Hill Lane EB	No issues		47
PT10 – Tanfield Road / Dudden Hill Lane WB	No issues		47
PT11 – Neasden Lane / Prout Grove SB	No issues		47
PT12 – Neasden Lane / Prout Grove NB	No bench or shelter provision No amenities nearby No maps or live bus arrivals information Poor quality frontages, graffiti Parked vehicles upstream impair sightlines		-8

PT13 – Neasden Lane / Neasden LU Station SB	Industrial frontages, unattractive and unpleasant		25
PT14 – Neasden Lane / Neasden LU Station NB	Unattractive, traffic dominated environment Feels unsafe		25
Public Space			
-	-	-	-
Interchange			
INT1 – Neasden LU Station	Unattractive location Litter and graffiti		35
Route			
R4 – Neasden	The route runs along busy roads where crossing is difficult and the quality of the environment is poor. User conflicts exist between pedestrians, and parked vehicles. There is no bus shelter provision on some of the stops There is an absence of dropped kerbs and tactile paving along several links There are obstructions along several links with poor surface quality and maintenance required to clear litter and vegetation	-	-11

3.2.2 CERS Route / Findings

The agreed cycling route to/from Neasden predominantly follows a signed cycle route along Crest Road and Tanfield Avenue. The remainder of the route runs along segregated cycle routes or routes shared with other traffic. The entire cycle route with the accompanying CERS scores is shown in **Figure 3.2.B**.

The audit of this route suggests that it is of an average standard, with all its elements rated amber on the RAG scale. All junctions and cycle parking facilities along the route have also been rated amber.

Figure 3.2.B CERS Route and RAG Scores for the Neasden (LU Station) Route






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Table 3.2.B below summarises the CERS scores and key issues for each audited element of the route.

Table 3.2.B CERS Scores and Further Details – for the Neasden (LU Station) Route

Parameter / Name	Key Issues Identified	Photograph	PERS Score
Link			
L1 – Shared facility from Staples Corner to Oxgate Lane	Off road facility poorly signed Potential conflicts with pedestrians Street furniture on shared facility reduce effective width Surface quality poor on shared facility		11
L2 – Oxgate Lane/ Crest Road	Signal junction on link Heavily trafficked with HGV's/buses using link Link conflicts including side roads, accesses, bus stops		-42
L3 – Kenwyn Drive to The Circle	Not most direct route Link conflicts including on-street parking, side roads, driveways		32
L4 – The Circle to pedestrian footbridge	Continuity hindered by roundabout, pedestrians crossing, vehicles parking No cycle provision (signage, symbols etc.) Bus route and HGVs associated with deliveries Poor perception of personal security (alleyway, route continues through service area behind shops)		-59

L5 – Pedestrian footbridge over A4088	Cyclists have to dismount – poor continuity Potential conflicts with pedestrians Steep gradient on ramps Not lit		-15
L6 – Balnacraig Avenue / Lansdowne Grove	Conflict points at T- junction/crossroads junction		41
L7 – Neasden Lane	Continuity hindered by bus stop, signalised crossing No cycle provision (cycle lanes, signage etc.) Heavily trafficked with HGV's/buses using link Narrow carriageway Poor surface quality Poor quality of environment		-50
Junction			
J1 – A5 / Oxgate Lane	Cyclists do not use junction; road markings directing cyclists onto shared facility, however no signage provided Cycle road markings worn Poor surface quality on shared facility		8
J2 – Tanfield Drive / Kenwyn Drive	Speed cushion in cycle right turn lane Gradient on minor approach and on right turn approach Faded road markings		22