

C2: Existing Pedestrian Conditions

Environmental Statement

Volume II

Northern Line Extension

Existing Pedestrian Conditions

Report

April 2013

Prepared for:
Transport for London
4th Floor Albany House
55 Broadway
London SW1H 0BD

Prepared by:
Steer Davies Gleave
28-32 Upper Ground
London SE1 9PD

+44 (0)20 7910 5000
www.steerdaviesgleave.com

CONTENTS

1	INTRODUCTION	5
	Background.....	5
	Relevant Policy and Guidance	5
	Pedestrian Environment Review System (PERS)	5
	The Review Process.....	5
	Northern Line Extension Context	6
2	LINK ASSESSMENT	8
	Area 1 - Kennington Green	8
	Area 2 - Radcot Street	8
	Area 3 - Kennington Park and Harmsworth Street	9
	Area 4 - Nine Elms	9
	Area 5 - Battersea Power Station	10
	Link Assessment Criteria.....	11
3	DETAILED ASSESSMENT	17
4	CROSSING PERFORMANCE	26
	Areas 1, 2 & 3	26
	Area 4	26
	Area 5	26
5	PEDESTRIAN SURVEYS	30
	Areas 1 & 2	30
	Area 3	31
	Area 4	31
	Area 5	32
6	PEDESTRIAN ACCIDENTS	33
7	PERS AUDIT SUMMARY	34
	Areas 1, 2, 3 & 4	34
	Area 5	34

FIGURES

Figure 1.1	Area Map	7
Figure 2.1	Pedestrian Links Assessed at Area 1	8
Figure 2.2	Pedestrian Links Assessed in area 2	8
Figure 2.3	Pedestrian Links Assessed in Area 3	9
Figure 2.4	Pedestrian Links Assessed in Area 4	9
Figure 2.5	Pedestrian Links Assessed in Area 5	10
Figure 2.6	Overall RAG Scores for Area 1 - Links	14
Figure 2.7	Overall RAG Scores for Area 2 - Links	14
Figure 2.8	Overall RAG Scores for Area 3 - Links	15
Figure 2.9	Overall RAG Scores for Area 4 - Links	15
Figure 2.10	Overall RAG Scores for Area 5 - Links	16
Figure 3.1	Photographs of Link 1-5	17
Figure 3.2	Photographs of Link 1-7	18
Figure 3.3	Photographs of Link 1-10	18
Figure 3.4	Photographs of Link 2-1	19
Figure 3.5	Photographs of Link 2-7	19
Figure 3.6	Photographs of Link 3-1	20
Figure 3.7	Photographs of Link 3-2	20
Figure 3.8	Photographs of Link 3-4	20
Figure 3.9	Photographs of Link 3-6	21
Figure 3.10	Photographs of Link 3-8	21
Figure 3.11	Photographs of Link 3-9	22
Figure 3.12	Photographs of Link 4-3	22
Figure 3.13	Photographs of Link 5-1	23
Figure 3.14	Photographs of Link 5-2	23
Figure 3.15	Photographs of Link 5-3	24
Figure 3.16	Photographs of Link 5-4	24
Figure 3.17	Photographs of Link 5-5 & 5-6	25
Figure 3.19	Areas 1, 2 & 3 - Audited Crossings.....	26
Figure 3.20	Area 4 - Audited Crossings	26

Existing Pedestrian Conditions

Figure 3.21	Area 5 - Audited Crossings.....	26
Figure 3.22	Overall RAG Scores for Areas 1, 2 & 3 - Crossings.....	28
Figure 3.23	Overall RAG Scores for Area 4 - Crossings	28
Figure 3.24	Overall RAG Scores for Area 5 - Crossings	28
Figure 3.25	Photographs of Crossing 2-C.....	29
Figure 3.26	Photographs of Crossing 5-A.....	29
Figure 4.1	Areas 1& 2 Total Pedestrian Flows (0700 -1900)	30
Figure 4.2	Area 3 Total Pedestrian Flows (0700 -1900).....	31
Figure 4.3	Area 4 Total Pedestrian Flows (0700 -1900).....	31
Figure 4.4	Area 5 Pedestrian Counts (0700 -1900).....	32
Figure 5.1	Location of Pedestrian Accidents.....	33

TABLES

Table 1.1	Approach to the PERS Analysis.....	6
Table 1.2	PERS Typology of Pedestrian Environments	6
Table 1.3	Areas with Associated Workites.....	6
Table 2.1	PERS Assessment Criteria	11
Table 2.2	Summary of Link Scores	12
Table 4.1	Summary of Pedestrian Crossing Scores.....	27
Table 5.1	Pedestrian Crossing Data - Kennington Road at Kennington Green	30

1 Introduction

Background

- 1.1 Steer Davies Gleave has undertaken a Pedestrian Environment Review System (PERS) assessment on behalf of Transport for London (TfL) of the areas around the proposed worksites for the Northern Line Extension (NLE) to establish a baseline for the existing pedestrian environment.
- 1.2 The PERS audit of links was undertaken on Thursday 13 December 2012 from 0900 to 1600. Pedestrian crossings were then audited on Friday 4 January 2013. Link 5-7 & 5-8 and crossing 5-D were added to the analysis due to the change in access to the Battersea site. They were audited on 8 April 2013. The findings from the PERS audit allow for an assessment of the impacts of construction activities on the pedestrian environment and for the development of mitigation measures to reduce the impacts.
- 1.3 This section describes the PERS system, its application and capabilities as well as providing a summary of the review process. The audit has been undertaken in accordance with guidance provided in TfL's 'Pedestrian Environment Review System, Review Handbook Version 2, May 2006'. A copy of the PERS audit site sheets are provided in Appendices A & B for reference.

Relevant Policy and Guidance

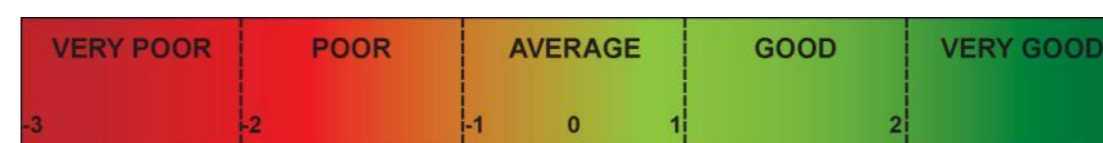
- 1.4 A range of policy and guidance documents promote walking as a mode of transport and provide a basis for understanding the needs of pedestrians and reviewing conditions for pedestrians and other vulnerable road users.
- 1.5 At a national level, a responsive approach to residential street design is set out in the *Manual for Streets* which was published in 2007 and recognises the wider role of streets in creating successful places. It supersedes *Design Bulletin 32* and *Places, Streets and Movement*. It emphasises the need for a better balance between pedestrians and vehicles in the design of lightly trafficked and residential streets.
- 1.6 At a regional level, *The Mayor's Transport Strategy* was published in 2010 and aims to create a connected, safe, convenient and attractive environment that encourages people to walk, making London one of the most walking friendly cities for pedestrians. It recognises that provision for walking is essential to the delivery of a sustainable and integrated transport policy, with the overall result of environmental, social and economic health benefits.
- 1.7 When designing walking schemes and assessing the pedestrian environment, consideration needs to be given to the 5C's. The London Advisory Planning Committee first introduced the 5C's in 1997 as a basis on which new measures to encourage walking should be developed. The 5C's are:
- **Connected** - routes should link origins and destinations;
 - **Convenient** - routes should facilitate the desired journey without undue deviation or difficulty;
 - **Conspicuous** - route design should allow the user to be seen by, and to see, other pedestrians and vehicles to promote personal security and road safety;
 - **Coherence** - routes should be continuous; and
 - **Convivial** - routes should be pleasant to use with potential for activity within the public realm.

1.8 The 5C's reflect the fact that transport users, regardless of mode, wish to make their journeys in the shortest, most convenient manner that is consistent with their personal and road safety and with a pleasant and comfortable journey experience. A pedestrian environment where these five elements are evident is therefore considered positive.

1.9 The Chartered Institution of Highways and Transportation also published *Guidelines for Providing for Journeys for Foot* in 2000 which provide a useful basis for assessing conditions from a pedestrian's perspective. Standards for minimum footway widths and other features of the pedestrian environment are set out.

Pedestrian Environment Review System (PERS)

- 1.10 PERS is a tool that measures the quality of the pedestrian environment through subjective review and then provides an objective measure for pedestrian quality. The auditing process allows for an overall review of the pedestrian environment around the proposed worksites.
- 1.11 TfL has recognised PERS as an appropriate tool to fully evaluate the pedestrian environment. TfL has commissioned a version of PERS specifically for use within London to identify where pedestrian environments require improvements.
- 1.12 PERS is produced by Transport Research Laboratory (TRL) and is described as:
"A systematic [computer programme] process designed to assess the quality of the pedestrian environment within a framework that promotes objectivity."
- 1.13 The review process allows for a wide range of information to be collected and presented in a number of analytical formats. In principle, PERS reviews the environment from the end-user's perspective, with emphasis placed on the viewpoint of a vulnerable pedestrian.
- 1.14 PERS takes into consideration the 5C's outlined in paragraph 1.7 above and works on a simple scoring method that breaks down various auditing criteria based on the pedestrian environment. Each characteristic is scored on a range from -3 to +3, where +3 is the highest score and -3 the lowest.



The Review Process

- 1.15 PERS as an audit tool consists of two parts:
- Audit sheets with accompanying guidance for use in the field to score environments and note comments; and
 - Software that is used to store results and produce presentational output.
- 1.16 The approach that was adopted for the purposes of this study follows that recommended by TRL and is summarised in Table 1.1.

TABLE 1.1 APPROACH TO THE PERS ANALYSIS

Stage	Task
1: Definition of Study Area	The study area is defined on a base map, with the extent of the pedestrian environment to be reviewed clearly identified.
2: Collation of Existing Information	Available information regarding existing conditions such as accident statistics and pedestrian flows is collated.
3: On-Street Evaluation	The auditor reviews their assigned environment using the summary sheets and scoring guides. Scores and comments are noted down as later inputs to the PERS software.
4: Data Input and Analysis	The scores gathered are entered into the PERS software for each environment reviewed. The software assigns each environment and sub-criteria an overall score.
5: Display and Review of Outputs	The PERS software may be used to generate reports and charts to display all aspects of the auditing data gathered.

1.17 Typical PERS audits examine three elements which together make up the pedestrian environment - namely links, crossings and public transport waiting areas. Each element is assessed in terms of the existing level of service and quality provided for pedestrians (see Table 1.2).

TABLE 1.2 PERS TYPOLOGY OF PEDESTRIAN ENVIRONMENTS

Environment Element	Description
Links	Any footway, footpath or highway. They can be divided into sections if very long or reviewed in total.
Crossings	Any designated or undesignated crossing where a pedestrian route intersects with a highway. You may choose to include side road junction crossings or not, dependent on the audit taking place.
Public Transport Waiting Areas	Any designated area where people may wait in order to use public transport (typically bus services)

1.18 Only links and crossings were examined in this audit because existing public transport waiting areas are not expected to be affected during the construction or operation of the NLE.

1.19 Although quantitative methods are used when reviewing pedestrian environments, within PERS much of the auditing is also qualitative, using the judgement of the auditor. This allows the 'feel' of an environment to be gauged and assessed.

1.20 Reviewers also have the option to designate links and crossings as local, strategic or neutral. This designation will weigh the scoring criteria differently holding strategic links to a higher standard

than local links. For this audit, all links and crossings analysed were designated as 'neutral'. This allows for each facility to be graded equally based on the same weighting profile. Furthermore, this enables straightforward comparisons to be made between links and crossings within the assessment area.

Northern Line Extension Context

- 1.21 This PERS audit was conducted to determine baseline conditions for the links and crossings near the NLE worksites. Both links and crossings were analysed using the PERS guidelines. This will help to:
 - i) identify suitable alternative footways where disruptions are expected during NLE construction; and
 - ii) identify current issues to be addressed through the delivery of the NLE and other developments in the area. This is particularly relevant in the case of the permanent shafts and stations that are being constructed.
- 1.22 The NLE will have either four or six worksites depending on the construction methodology used. Two construction options are currently being considered - Construction Option A and Construction Option B - on which more information is provided in Chapter 4 of the Environment Statement for the NLE.
- 1.23 These worksites are centred in five areas (see Table 1.3 & Figure 1.1). Except in localised areas, construction activities are not expected to dramatically impact on the pedestrian environment. Please note the the size of the worksites shown in the figures in this report are indicative.

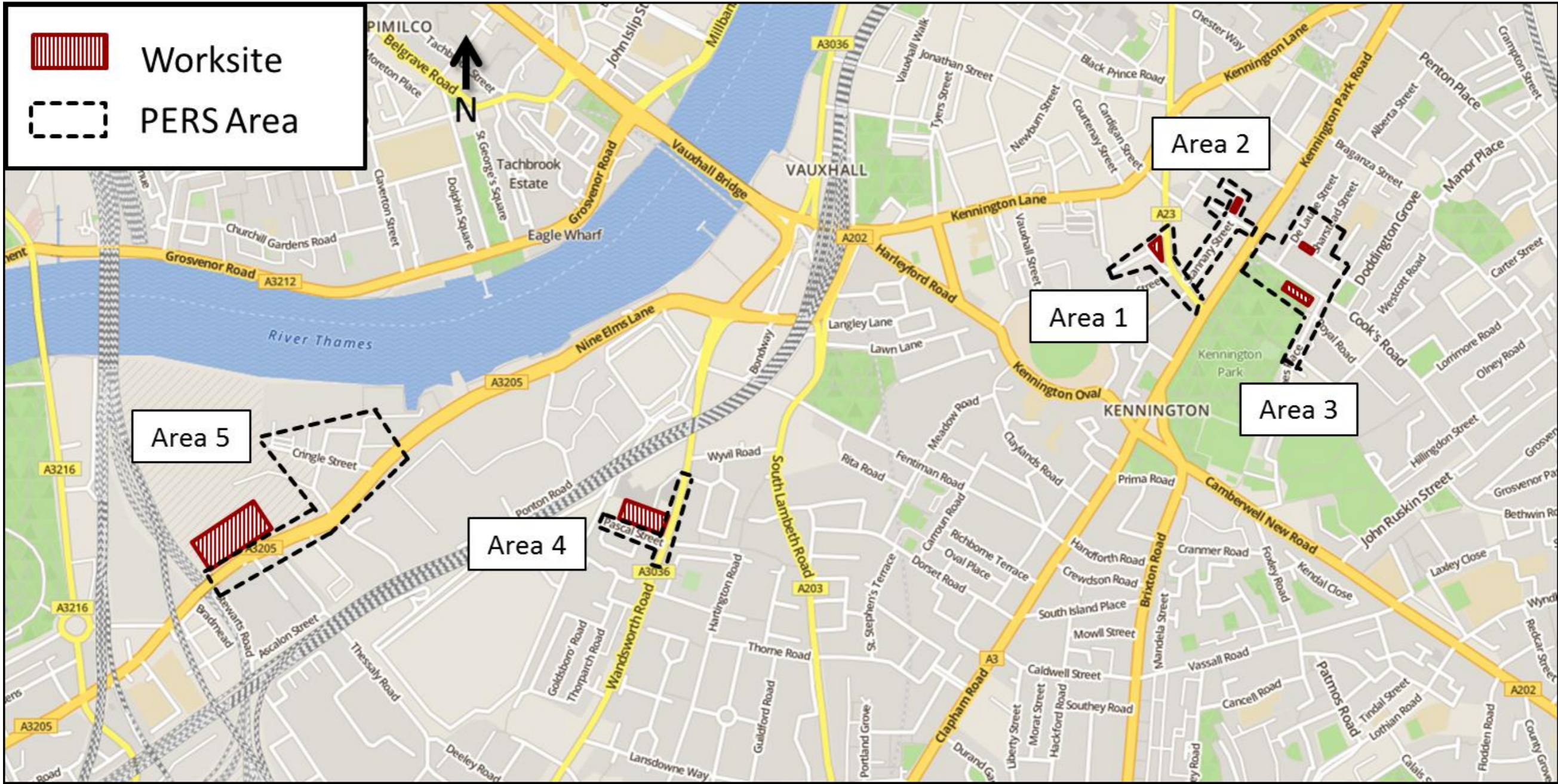
TABLE 1.3 AREAS WITH ASSOCIATED WORKSITES

Area	Worksite Location	Purpose	Construction Option
1	Kennington Green	Permanent shaft	A and B
2	Radcot Street	Temporary shaft	A only
3	Kennington Park	Permanent shaft	A and B
	Harmsworth Street	Temporary shaft	A only
4	Nine Elms	Station	A and B
5	Battersea Power Station	Station	A and B

1.24 The footways audited in this report were chosen as they were either likely to be impacted by construction activities or likely to have additional pedestrians diverted on to them. This was based on the information provided in Appendix C1.

1.25 Conducting a PERS audit on the areas impacted by NLE construction brings about some context specific considerations. Many of the audited footways are in residential areas, are of uniform gradient, do not contain tactile information and do not have legibility signage. Given the residential context, not having tactile information and legibility signage are not deemed to be major detriments and considering them as such would have unfairly penalised the residential links. As such, these factors were not analysed for any of the links. Additionally, the planned construction activities are not expected to significantly affect these factors.

FIGURE 1.1 PERS AREA MAP



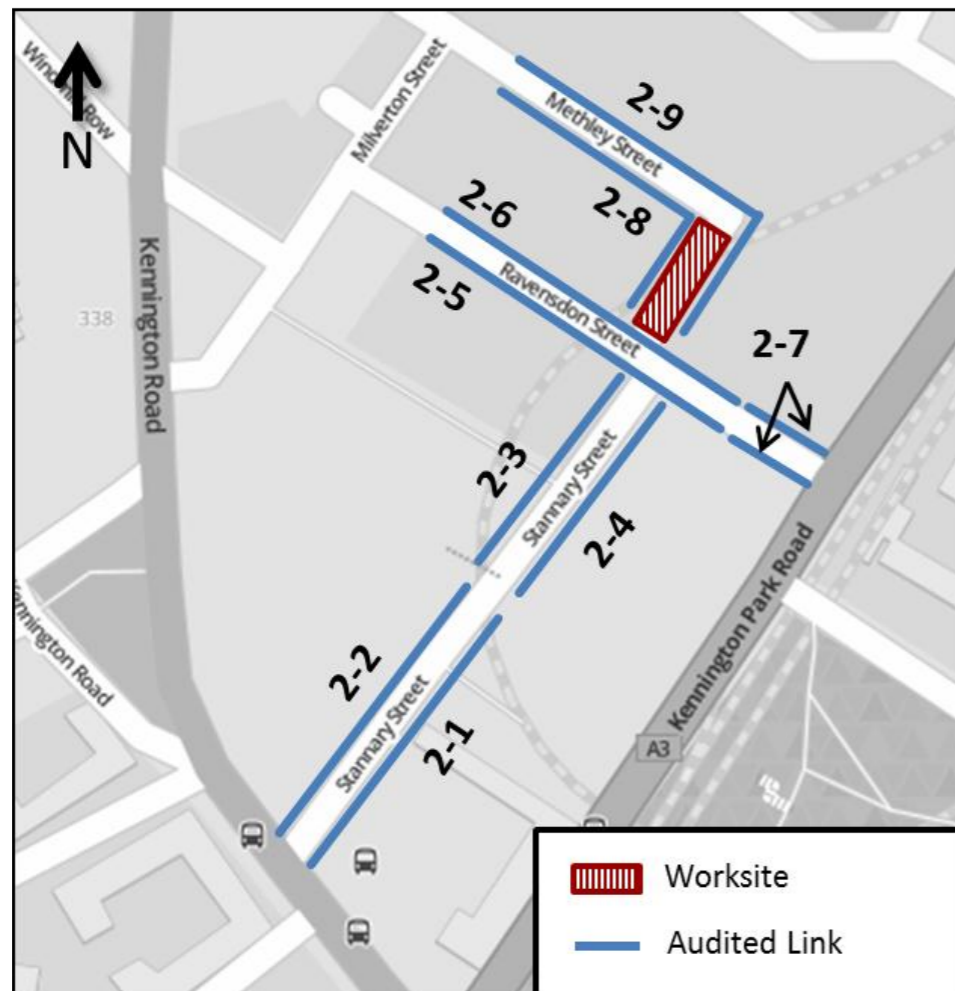
2 Link Assessment

2.1 The following links have been included within this PERS audit:

Area 1 - Kennington Green

- Link 1-1 - Kennington Road South, west side
- Link 1-2 - Kennington Road South, east side
- Link 1-3 - Kennington Road North, west side
- Link 1-4 - Kennington Road North, east side
- Link 1-5 - Kennington (Green) North, north side
- Link 1-6 - Kennington (Green) North, south side
- Link 1-7 - Kennington (Green) West, west side
- Link 1-8 - Kennington (Green) West, east side
- Link 1-9 - Montford Place, north side
- Link 1-10 - Montford Place, south side

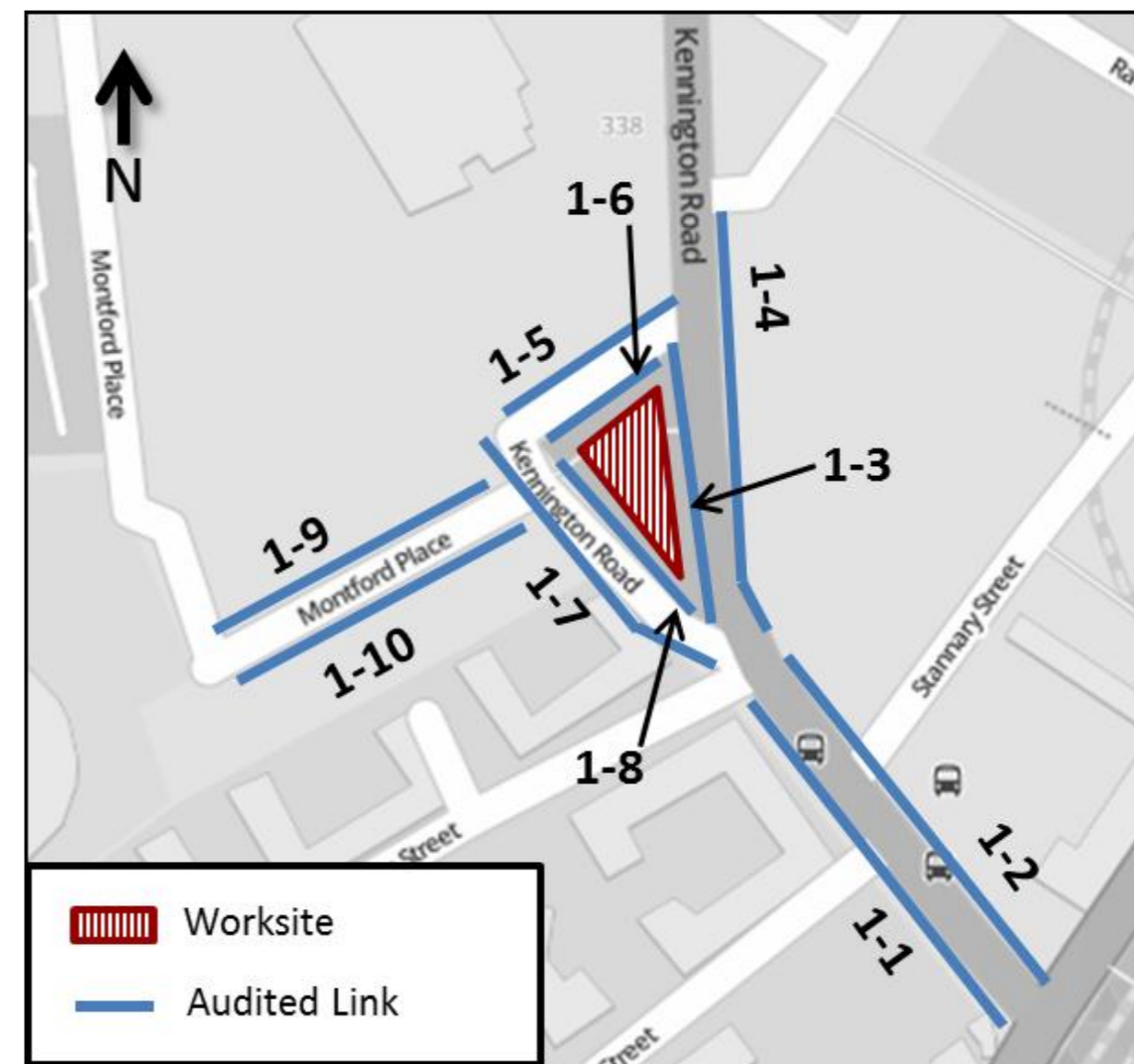
FIGURE 2.1 PEDESTRIAN LINKS ASSESSED AT AREA 1



Area 2 - Radcot Street

- Link 2-1 - Stannary Street South, south side
- Link 2-2 - Stannary Street South, south side
- Link 2-3 - Stannary Street North, north Side
- Link 2-4 - Stannary Street North, south side
- Link 2-5 - Ravensdon Street North, south side
- Link 2-6 - Ravensdon Street North, north side
- Link 2-7 - Ravensdon Street South, both sides at the point it narrows (close to junction with Kennington Park Road)
- Link 2-8 - Radcot/Methley Street south west
- Link 2-9 - Radcot/Methley Street north east

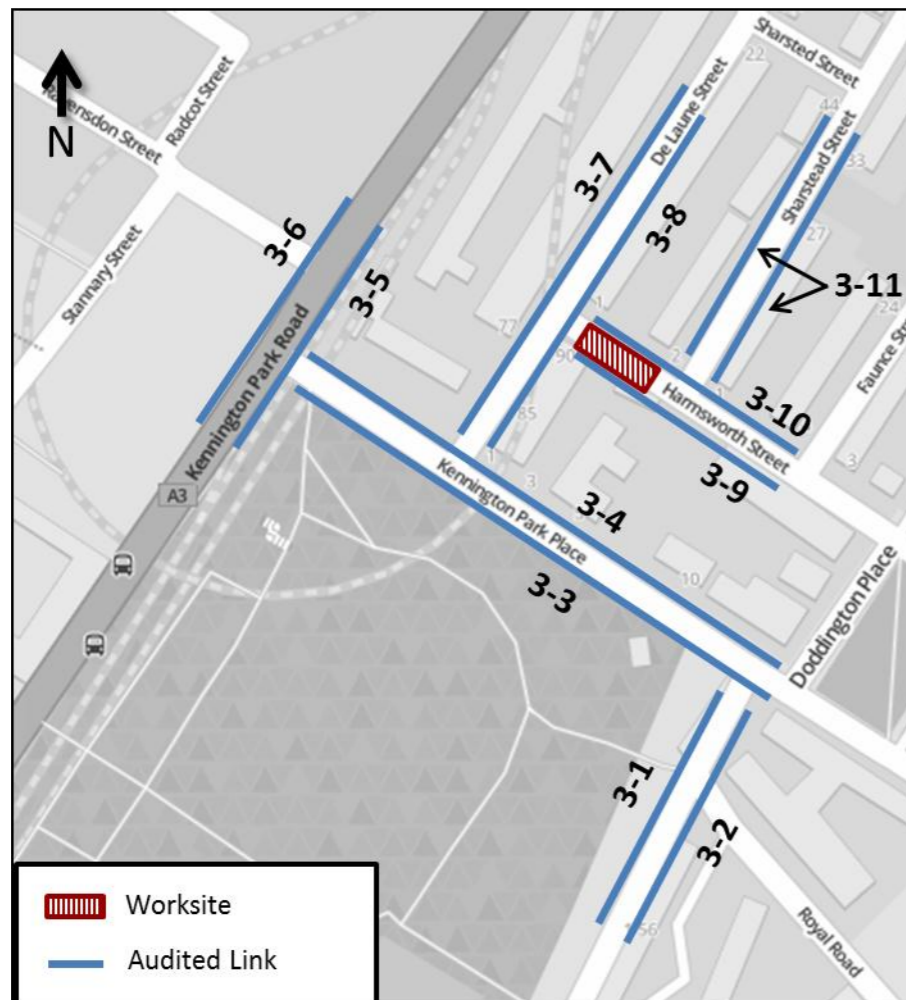
FIGURE 2.2 PEDESTRIAN LINKS ASSESSED IN AREA 2



Area 3 - Kennington Park and Harmsworth Street

- Link 3-1 - St. Agnes Place, west side
- Link 3-2 - St. Agnes Place, east side
- Link 3-3 - Kennington Park Place, south side
- Link 3-4 - Kennington Park Place, north side
- Link 3-5 - Kennington Park Road, east side
- Link 3-6 - Kennington Park Road, west side
- Link 3-7 - De Laune Street, west side
- Link 3-8 - De Laune Street, east side
- Link 3-9 - Harmsworth Street, south side
- Link 3-10 - Harmsworth Street, north side
- Link 3-11 - Sharsted Street, both sides

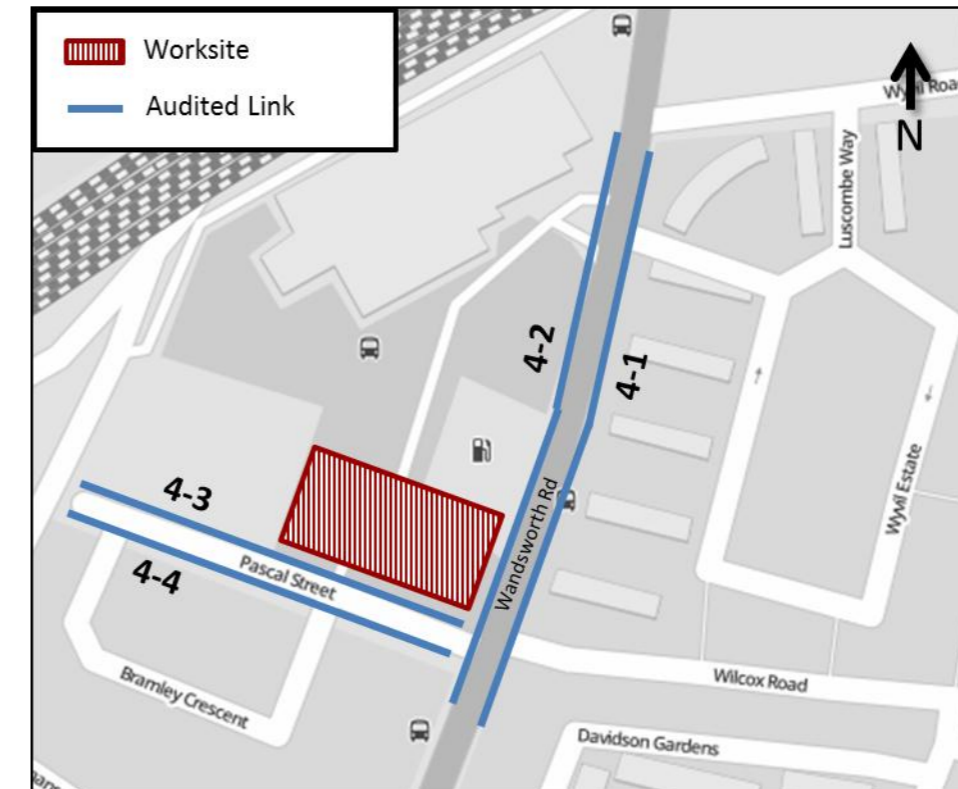
FIGURE 2.3 PEDESTRIAN LINKS ASSESSED IN AREA 3



Area 4 - Nine Elms

- Link 4-1 - Wandsworth Road, east side
- Link 4-2 - Wandsworth Road, west side
- Link 4-3 - Pascal Street, north side
- Link 4-4 - Pascal Street, south side

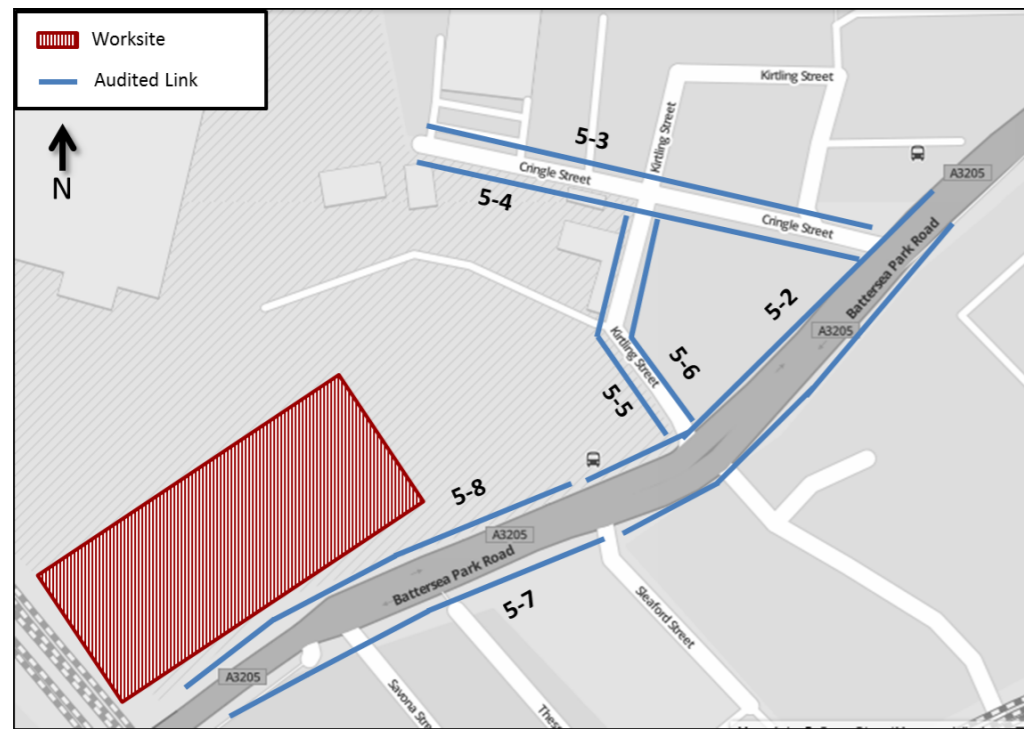
FIGURE 2.4 PEDESTRIAN LINKS ASSESSED IN AREA 4



Area 5 - Battersea Power Station

- Link 5-1 - Battersea Park Road, east - south side
- Link 5-2 - Battersea Park Road, east - north side
- Link 5-3 - Cringle Street, north side
- Link 5-4 - Cringle Street, south side
- Link 5-5 - Kirtling Street, west side
- Link 5-6 - Kirtling Street, east side
- Link 5-7 - Battersea Park Road, west - north side
- Link 5-8 - Battersea Park Road, west - south side

FIGURE 2.5 PEDESTRIAN LINKS ASSESSED IN AREA 5



Link Assessment Criteria

2.2 Links were examined according to various PERS criteria. Table 2.1 describes the assessment criteria used in the PERS audit in detail.

TABLE 2.1 PERS ASSESSMENT CRITERIA

Criteria	Description
Effective Width	'Effective width' is the space within a link available for pedestrian movement. The Chartered Institution of Highways & Transportation's <i>Guidelines for Providing for Journeys on Foot</i> recommends an absolute minimum width of 1.8m for footways with 2m being a desirable minimum and the preferred width being 2.6m.
Dropped Kerbs	'Dropped kerbs' are concerned with the physical barrier that kerbs can present to vulnerable pedestrians. This category requires consideration of the degree to which any kerbs encountered along a particular link are sufficiently dropped, their location and alignment. Where kerbs on pedestrian desire-lines are not fully dropped they can represent a barrier to mobility impaired pedestrians.
Obstructions	'Obstructions' are physical barriers to pedestrian flow. Obstructions in the footway can have a number of negative effects on level of service to pedestrians. Obstructions can take a number of forms and may be permanent or temporary. They can include street furniture, footway parking or parking across uncontrolled crossing points, bus stops and waiting passengers, shop signs and goods, streetworks, vegetation and advertising hoardings.
Permeability	'Permeability' is the extent to which pedestrians can make informal movements on the link in order to serve their own personal journey purposes. Where links are concerned this generally relates to the ease of crossing a link or leaving or joining it in order to serve personal desire-lines, rather than having to rely on designated crossings.
Lighting	'Lighting' deals with the quality of lighting on a link. Lighting of a pedestrian route can have a strong influence on pedestrians' perceptions of personal security and hence of the viability of the link after dark for some pedestrians. The quality of lighting is likely to be determined by frequency, nature, intensity and continuity.
Personal Security	'Personal security' deals with environmental features that relate to

Criteria	Description
	individual pedestrians' vulnerability to, or fear of, crime.
Surface Quality	'Surface quality' deals with the evenness, absence of trip hazards and frictional qualities of horizontal surfaces on which pedestrians may stand or walk. Surface quality is particularly significant for pedestrians.
User Conflict	'User Conflict' deals with hazards to pedestrians as a result of making conflicting movements with other users. While related to road safety, user conflict is a broader term that encompasses hazards that could lead to injury or fear of injury as well as the activity of other users that may prevent pedestrians behaving as they would wish.
Quality of Environment	'Quality of the environment' concerns the degree to which a link is pleasant to use. This scoring category is concerned with the general ambience of a link.
Maintenance	'Maintenance' is related to environmental quality but more specifically reflects the effectiveness of the management of a facility. Damage to street furniture or other facilities, maintenance of soft landscaping, the accumulation of litter, fallen leaves, chewing gum or standing surface water can all affect pedestrians' perceptions of the environment.

*Adapted from PERS Review Handbook (May, 2006)

- 2.3 An overall score for each link is provided by the PERS software. Each link is given a Red, Amber, Green (RAG) colour rating based on their overall score.
- Red: Negative Overall
 - Amber: Average Overall
 - Green: Positive Overall
- 2.4 Scores for the different criteria are entered individually into the software. The criteria are weighted differently according to the effect they have on the pedestrian environment. For example, 'Personal Security' is weighted five times greater than 'Maintenance'. This reflects the fact that when a footway is perceived as unsafe, even when properly maintained, the pedestrian environment is poor and people are unlikely to use it.
- 2.5 A total of 40 links were assessed as part of the audit. A summary table of the results are presented in Table 2.2. Figure 2.6 - Figure 2.10 provide maps of the overall RAG scores.
- 2.6 Copies of all the link site audit sheets are presented in Appendix A.

Existing Pedestrian Conditions

TABLE 2.2 SUMMARY OF LINK SCORES

	RAG	Effective Width	Dropped Kerbs	Obstructions	Permeability	Lighting	Tactile Information	Personal Security	Surface Quality	User Conflict	Quality of Environment	Maintenance
Link 1-1	83	3	3	-2	1	1	3	1	3	1	-1	1
Link 1-2	96	3	3	3	1	-1	3	0	3	2	0	3
Link 1-3	113	2	3	0	2	2	3	3	3	2	1	3
Link 1-4	124	3	3	1	2	2	3	2	3	3	-1	3
Link 1-5	-51	-3	-2	-3	2	-1	-3	1	-3	-3	-2	-2
Link 1-6	67	2	2	2	2	-2	-3	2	1	2	1	1
Link 1-7	15	-3	-3	2	1	3	-3	2	-1	0	1	1
Link 1-8	61	3	-3	2	1	2	-3	2	-2	3	2	2
Link 1-9	57	2	-3	1	1	3	-3	1	1	3	-1	0
Link 1-10	38	-2	-3	1	2	3	-3	2	1	2	0	1
Link 2-1	-46	2	-3	-1	-2	-1	-3	-1	-2	-3	-2	-3
Link 2-2	44	3	3	3	1	-2	-2	-1	-2	3	-2	-1
Link 2-3	58	3	2	2	1	-2	-3	-1	2	3	1	2
Link 2-4	67	2	2	2	-1	-2	0	1	1	3	0	2
Link 2-5	78	2	0	1	2	2	-3	1	2	3	2	2
Link 2-6	89	2	2	3	1	2	-2	2	2	3	2	2
Link 2-7	-43	-3	-2	-2	2	-2	-2	-1	2	-3	-3	0
Link 2-8	64	2	-1	2	1	1	-3	2	-1	3	2	3
Link 2-9	60	2	-3	3	0	2	-3	2	-1	3	2	3

	RAG	Effective Width	Dropped Kerbs	Obstructions	Permeability	Lighting	Tactile Information	Personal Security	Surface Quality	User Conflict	Quality of Environment	Maintenance
Link 3-1	13	0	-2	1	0	-1	-2	0	-1	2	1	-2
Link 3-2	1	1	-3	1	-2	-2	-2	-1	0	2	0	0
Link 3-3	43	2	-3	0	0	0	-3	1	1	3	-1	1
Link 3-4	-2	0	-1	1	0	-2	0	-1	-2	1	-2	-1
Link 3-5	112	2	3	3	1	1	3	2	2	3	1	2
Link 3-6	-2	-1	0	-1	-1	-1	0	0	1	-1	-1	0
Link 3-7	90	0	0	2	1	2	1	3	1	3	2	2
Link 3-8	22	-2	2	-3	1	-2	3	2	-2	0	2	2
Link 3-9	-2	-3	0	-1	-1	2	-1	-2	1	3	-3	-3
Link 3-10	103	2	2	2	2	2	2	2	2	2	1	1
Link 3-11	72	0	1	-1	1	1	1	2	2	2	2	3
Link 4-1	115	2	3	2	1	3	3	1	3	3	2	3
Link 4-2	114	1	2	2	2	3	3	2	3	3	1	3
Link 4-3	-34	1	-3	3	0	-3	-3	-2	-2	3	-3	-3
Link 4-4	48	1	1	2	1	1	-2	0	-1	3	-2	-3
Link 5-1	-8	0	1	-1	1	0	-1	-3	-2	-2	-3	-3
Link 5-2	14	1	1	1	0	2	0	-2	-1	-2	-1	0
Link 5-3	-85	-2	-2	-2	-3	-1	-3	-3	-2	-3	-3	-3
Link 5-4	-75	-1	-2	-2	-3	-2	-3	-3	-1	-2	-3	-3
Link 5-5	-46	0	-3	-1	-2	-1	-3	-3	-2	0	-3	-2
Link 5-6	-7	0	-3	0	-1	0	-3	-2	0	2	-3	-2
Link 5-7	4	0	0	-1	0	2	0	-2	-3	0	0	-3
Link 5-8	86	1	1	2	1	2	2	1	3	3	-3	-2

FIGURE 2.6 OVERALL RAG SCORES FOR AREA 1 - LINKS

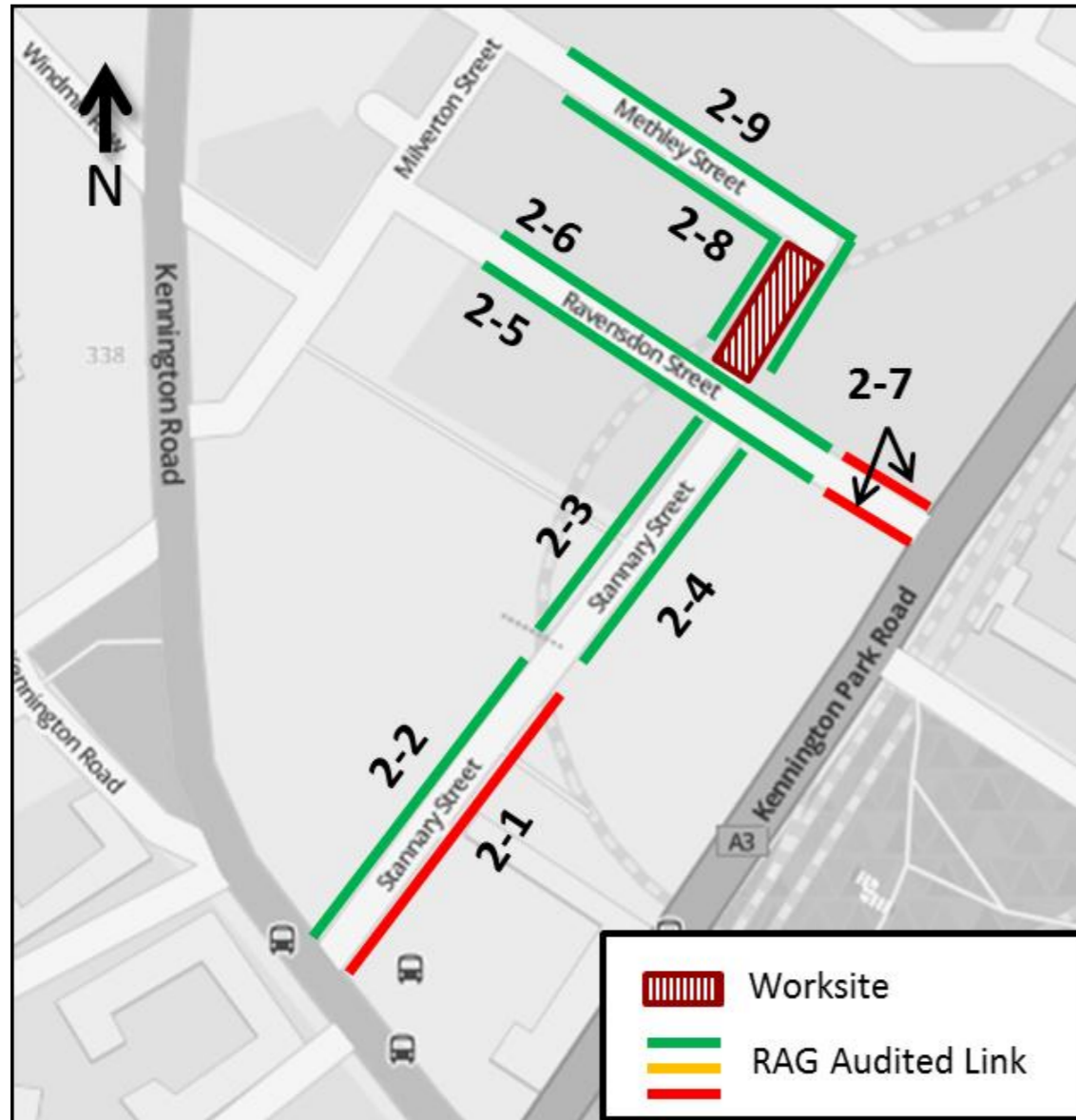


FIGURE 2.7 OVERALL RAG SCORES FOR AREA 2 - LINKS

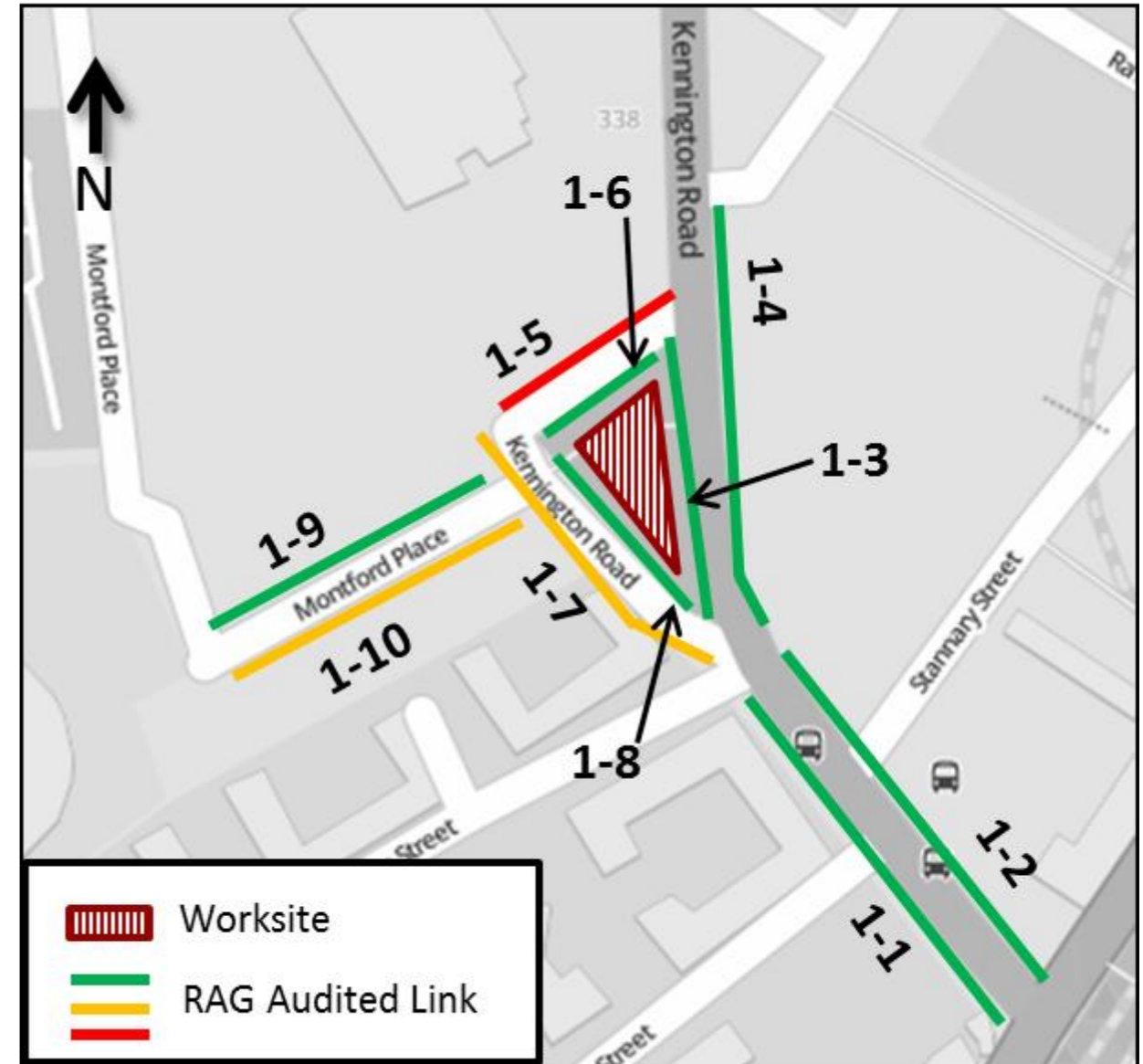


FIGURE 2.8 OVERALL RAG SCORES FOR AREA 3 - LINKS

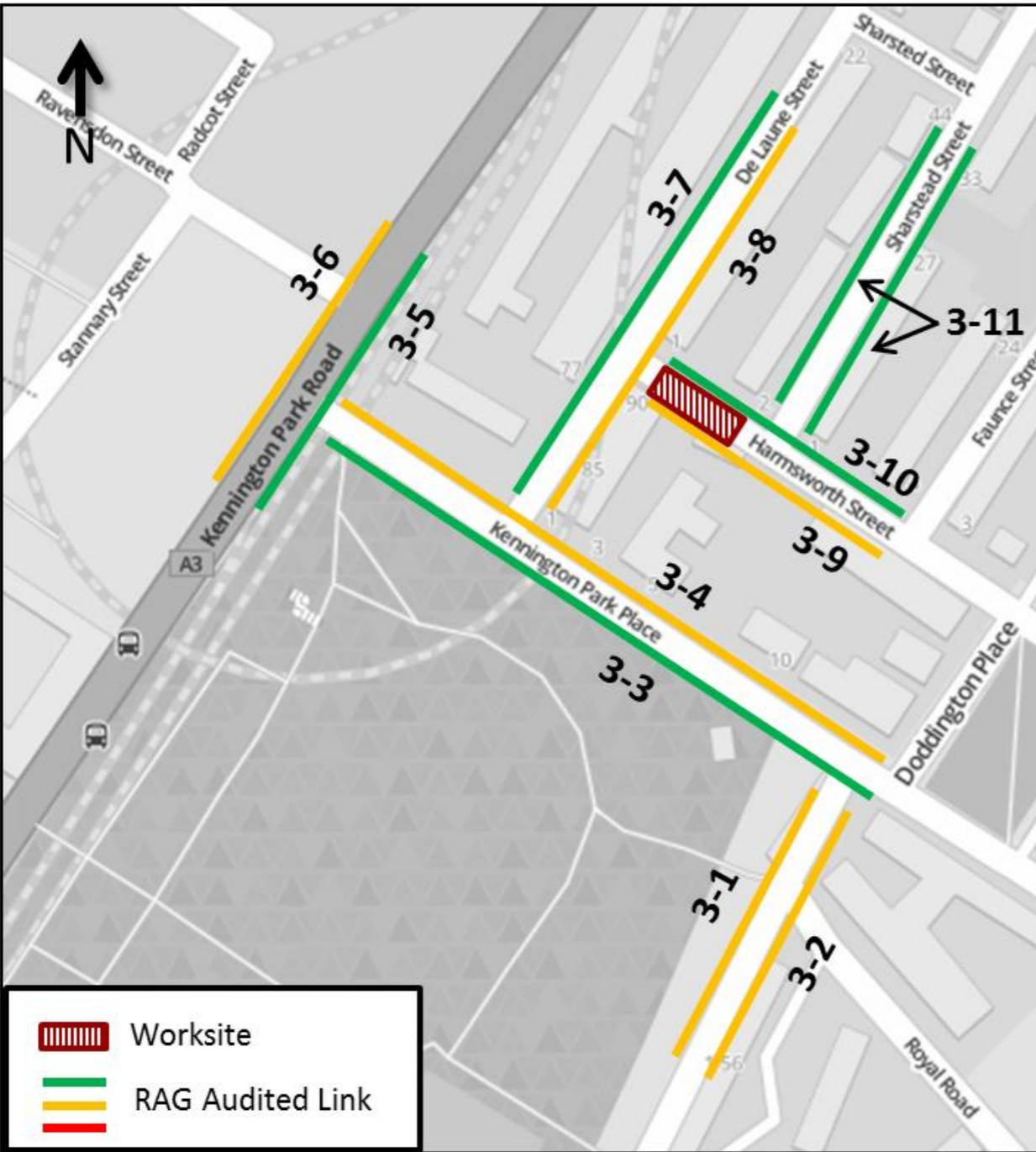
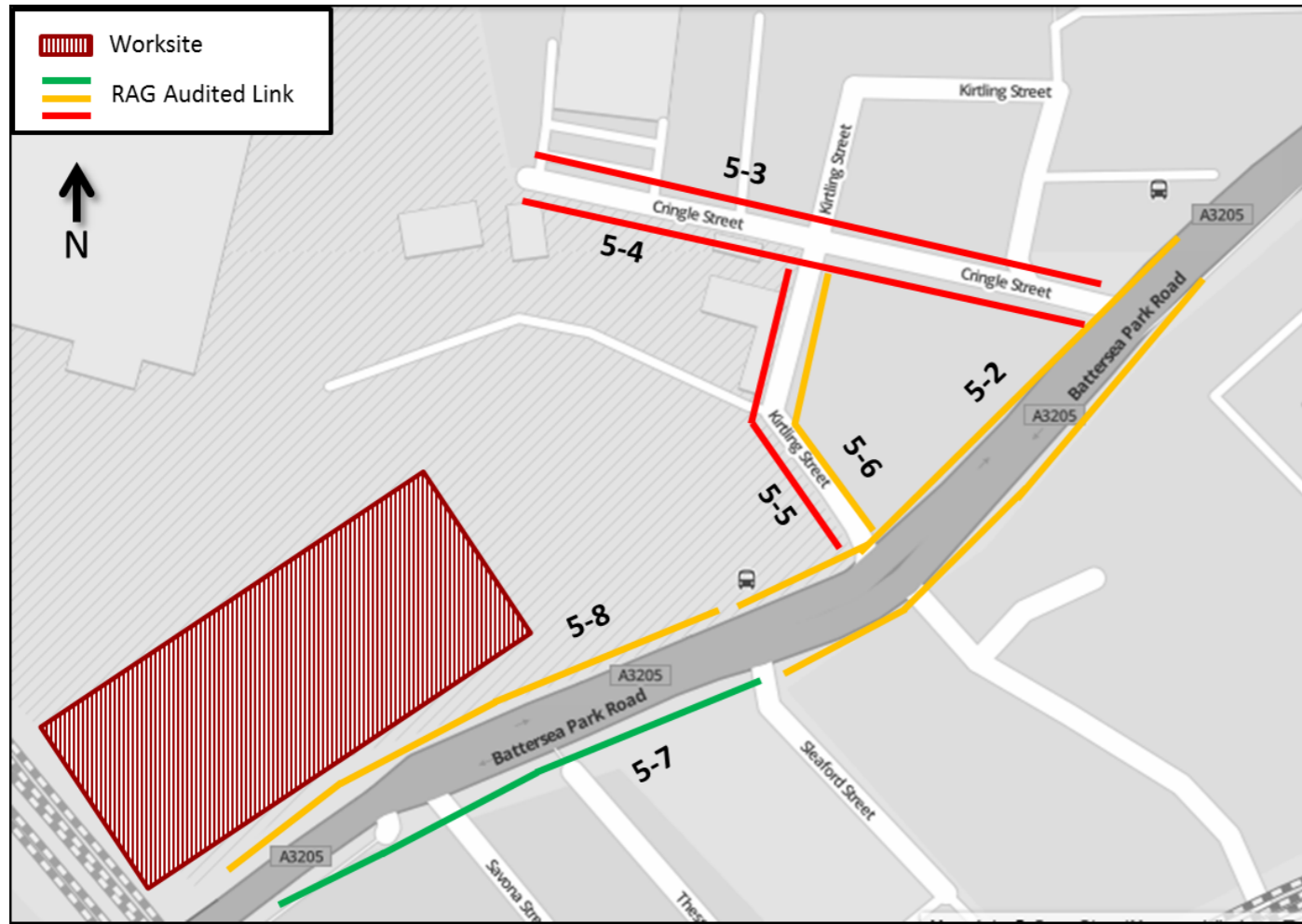


FIGURE 2.9 OVERALL RAG SCORES FOR AREA 4 - LINKS



FIGURE 2.10 OVERALL RAG SCORES FOR AREA 5 - LINKS



3 Detailed Assessment

3.1 A general commentary outlining the key observations and feasible options for improvements has been provided for the following 18 links that scored amber or red:

Area 1 - Kennington Green

- Link 1-5 - Kennington (Green) North, north side;
- Link 1-7 - Kennington (Green) West, west side;
- Link 1-10 - Montford Place, south side;

Area 2 - Radcot Street

- Link 2-1 - Stannary Street South, south side;
- Link 2-7 - Ravensdon Street South, at the point it narrows;

Area 3 - Kennington Park and Harmsworth Street

- Link 3-1 - St. Agnes Place, west side;
- Link 3-2 - St. Agnes Place, east side;
- Link 3-4 - Kennington Park Place, north side;
- Link 3-6 - Kennington Park Road, west side;
- Link 3-8 - De Laune Street, east side;
- Link 3-9 - Harmsworth Street, south side;

Area 4 - Nine Elms

- Link 4-3 - Pascal Street, north side;

Area 5 - Battersea Power Station

- Link 5-1 - Battersea Park Road, south side;
- Link 5-2 - Battersea Park Road, north side;
- Link 5-3 - Cringle Street, north side;
- Link 5-4 - Cringle Street, south side;
- Link 5-5 - Kirtling Street, west side;
- Link 5-6 - Kirtling Street, east side; and
- Link 5-7 - Battersea Park Road, west - north side.

Link 1-5: Kennington Road (Green) North, south side

Key Observations

RAG Score: **-51**

- Parked vehicles overhang footway;
- Vegetation blocks almost entire footway; and
- Footway, with obstructions, is not wide enough for large wheelchairs or pushchairs.

3.2 This narrow footway is made almost impassable by the many obstructions throughout. Bollards are installed along the footway which further limits the clear width. Wheelie bins appear to be permanently stored on the footway which, when combined with the bollards, leave less than 30cm of clear footway to pass through.

3.3 Vehicles parked in driveways overhang the footway forcing pedestrians to walk around them.

3.4 Untrimmed vegetation is growing into the footway. This problem is significant as the overgrowth is so extensive that pedestrians are forced to walk in the roadway.

Improvement options

- Widen footway into roadway;
- Prevent vehicles from overhanging footway;
- Do not allow residents to store wheelie bins on footway; and
- Trim vegetation to allow full use of footway.

Figure 3.1 Photographs of Link 1-5



Existing Pedestrian Conditions

Link 1-7: Kennington Road (Green) West, west side

Key Observations

RAG Score:

15

- Footway is very narrow in one area;
- Greenery intrudes into footway;
- No dropped kerbs; and
- Inappropriate sign placement.

- 3.5 This footway receives an amber rating mainly due to a narrow section south of the junction with Montford Place. This area would be difficult to push a wheelchair or wide pushchair through without coming close to the kerb. This issue is exacerbated by encroaching greenery which reduces the width of this already narrow footway.
- 3.6 At the junction with Montford Place, there are no dropped kerbs. The north side of the junction would be especially difficult for a wheelchair as the kerb height is significant.
- 3.7 The sign identifying Montford Place is in a poor location for pedestrians. Although the footway is wide enough to accommodate the sign and pedestrian movements, changes in footway width could cause this to be an issue.

Improvement options

- Trim greenery to allow full use of footway;
- Widen footway into roadway;
- Install dropped kerbs with tactile and colour surfacing; and
- Relocate sign so as to not interfere with footway.

FIGURE 3.2 PHOTOGRAPHS OF LINK 1-7



Link 1-10: Montford Place, south side

Key Observations

RAG Score:

38

- Footway narrows along the easterly section;
- Obstructions occur throughout; and
- Poor surface quality.

- 3.8 This footway receives a poor rating mainly due to the easterly section. The footway narrows significantly and also has some temporary (wheelie bins) and permanent obstructions (lamp posts) that further reduce the clear width. This section does not have the same residential frontages that the western section does.
- 3.9 There are no dropped kerbs on this footway which makes it difficult for wheelchair users to accessing the footway and residences on this street.
- 3.10 The surface quality of this footway is generally poor throughout. The surface material changes and is uneven in many areas.

Improvement options

- Install dropped kerbs at junction with Kennington Road & Montford Place;
- Repave footway; and
- Limit placement of temporary obstacles on footway.

FIGURE 3.3 PHOTOGRAPHS OF LINK 1-10



Link 2-1: Stannary Street South, south side

Key Observations

RAG Score:

-46

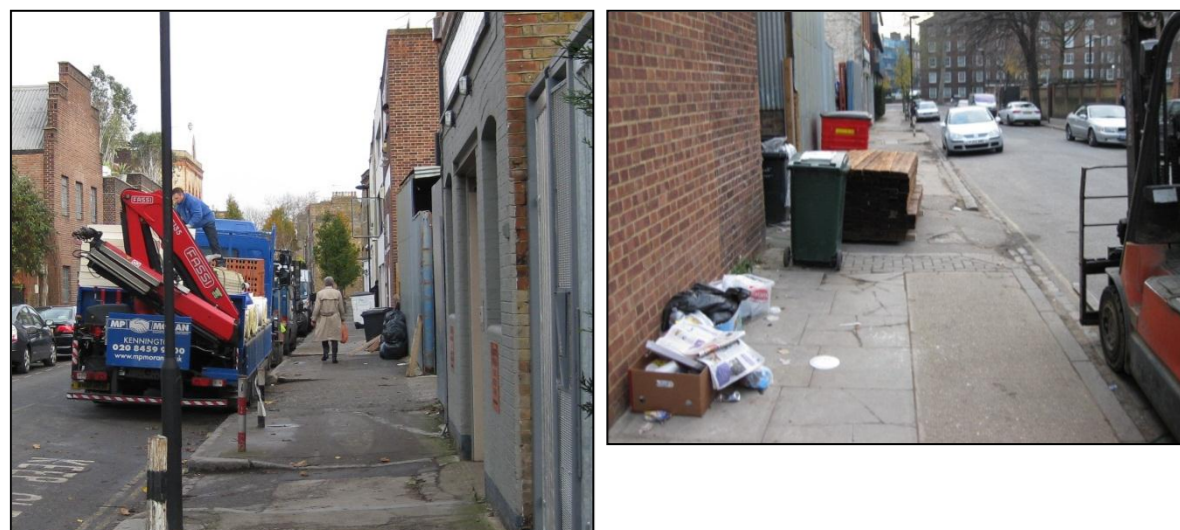
- User conflict with builders merchant;
- Footway in need of repair; and
- Cluttered footway.

- 3.11 The major issue with this link is the footway near the building merchant. The merchant only has sufficient space on site to accommodate one delivery vehicle. Any additional delivery vehicles are loaded and unloaded from the street. This causes conflicts with pedestrians as forklifts and workers are constantly crossing and occupying the footway. Additionally, customers load purchased goods into their vehicles from the footway. This causes a temporary obstruction which could impede a wheelchair, pushchair and pedestrians.
- 3.12 The footway and kerbs are also in need of repair in front of the building merchant and other businesses. Cracked and uneven paving stones occur throughout this link. Dropped kerbs are uneven and would be an impediment to a wheelchair.
- 3.13 At the time of this audit, the footway was very cluttered. This was due to rubbish, wheelie bins and building supplies left haphazardly throughout the footway.

Improvement options

- Discuss ways to improve the building merchants delivery area to limit the number of trucks loaded on the street;
- Repair footways and kerbs to a standard that allows HGVs to occasionally drive on them (when manoeuvring into the yard); and
- Prevent residents and businesses from using the footway as a storage area for rubbish.

FIGURE 3.4 PHOTOGRAPHS OF LINK 2-1



Link 2-7: Ravensdon Street South, at the point it narrows

Key Observations

RAG Score:

-43

- Street lamp and bollards obstruct footway;
- Footway is not wide enough for large wheelchairs or pushchairs; and
- Lighting is inadequate.

- 3.14 Restricted width is the main reason that this footway received a red rating. Wheelchairs and pushchairs would have difficulty navigating as the footways are so narrow. Pedestrians walking two abreast would need to walk single file through this section. The narrow footways create user conflicts where pedestrians would be forced to walk in the street should they meet another pedestrian on the footway.
- 3.15 A street lamp and bollards further obstruct the south side of this footway. The bollards are in a straight line, but the street lamp is out of line from them which serves to reduce the clear width of the footway.
- 3.16 There is one street lamp on this link. This would be sufficient on most streets but that lack of private frontages and tall blank walls requires better pedestrian oriented lighting.

Improvement options

- Move bollards to kerb edge to increase footway width; and
- Improve lighting throughout.

FIGURE 3.5 PHOTOGRAPHS OF LINK 2-7



Existing Pedestrian Conditions

Link 3-1 & Link 3-2: St. Agnes Place

Key Observations

RAG Score: Link 3-1:

13

Link 3-2:

1

- █ Generally poor environment;
- █ No dropped kerbs at Royal Road; and
- █ Frontages are poor.

- 3.17 Links on both side of St Agnes Place suffer from the same generally poor pedestrian environment. Permeability is poor due to parked cars, pedestrian barriers and no designated crossing areas. The surface quality is made of aesthetically inferior materials (tarmac) and has not been well maintained. The frontage on the west side is Kennington Park and is fenced except for one park access point. The east side is fronted by building that is set back from the footway and is bordered by a low wall and fence.
- 3.18 Along the footway adjacent to the park, leaves are strewn about the footway and in some areas, almost entirely cover the footway.
- 3.19 There are no dropped kerbs except at the junction with Kennington Park Place.
- 3.20 There is a pedestrian barrier at the entrance to the park at the junction with Royal Road. The barrier is heavily damaged from multiple impacts by cars and encroaches on pedestrian space.

Improvement options

- █ Remove pedestrian barrier, replace with bollards;
- █ Install dropped kerbs at junction with Royal Road; and
- █ Improve maintenance on footway adjacent to park.

FIGURE 3.6 PHOTOGRAPHS OF LINK 3-1



FIGURE 3.7 PHOTOGRAPHS OF LINK 3-2



Link 3-4: Kennington Park Place, north side

Key Observations

RAG Score:

-2

- █ Obstructions limit clear footway width;
- █ Dropped kerbs and tactile information are not consistently implemented; and
- █ Poor surface and poorly maintained.

- 3.21 At the junction with Kennington Park Road, dropped kerbs and associated tactile information have been installed. However, at entrances to private drives, kerbs remain an obstacle to those in wheelchairs and with pushchairs.
- 3.22 There are a number of obstructions between De Laune Street and Kennington Park Road which significantly reduce the clear width of the footway (electrical boxes).
- 3.23 The surface of the footway has been repaired and patched many times. This has resulted in many different surface treatments that do not always match evenly. This creates a trip hazard and is visually distracting.

Improvement options

- █ Install dropped kerbs at private driveways; and
- █ Resurface patched footways;

FIGURE 3.8 PHOTOGRAPHS OF LINK 3-4



Link 3-6: Kennington Park Road, west side

Key Observations

RAG Score:

-2

- Pinch point near south crossing;
- Footway narrows at junction with Kennington Park Place;
- Wheelie bins stored on footway; and
- Empty frontages.

- 3.24 There are many areas within the link that need improvement. Except for a pinch point due to a poorly placed cycle rack, there is sufficient width for wheelchairs, pushchairs and flows of pedestrians in both directions. There are empty frontages near the junction with Kennington Park Place that cause the footway to narrow.
- 3.25 A recently removed pedestrian barricade gives the impression that there may be more improvements scheduled for this junction.

Improvement options

- Remove cycle rack near south crossing; and
- Limit storage of wheelie bins on footway.

FIGURE 3.9 PHOTOGRAPHS OF LINK 3-6



Link 3-8: De Laune Street, east side

Key Observations

RAG Score:

22

- Footway is very narrow in one area;
- Poor quality surface; and
- Footway is cluttered with wheelie bins.

- 3.26 The footway is of an acceptable width along most of this link. A tree trunk has grown so large that it has reduced the footway width so much so that a wheelchair would have difficulty navigating around it. The roots of this tree have also caused the surface to become uneven and a trip hazard.
- 3.27 Although the footway is of adequate width, the storage of wheelie bins and the presence of street lamp columns in the footway reduce the clear width significantly.

Improvement options

- Resurface footway near large tree;
- Fix uneven surface in other areas; and
- Restrict storage of wheelie bins on footway.

FIGURE 3.10 PHOTOGRAPHS OF LINK 3-8



Existing Pedestrian Conditions

Link 3-9: Harmsworth Street, south side

Key Observations

RAG Score:

-2

- Footway is narrow throughout;
- Lack of landscaping and residential frontages; and
- Little activity on street.

- 3.28 The major issue with this footway is its substandard width along its length. With the addition of street lamps, the footway would be difficult to navigate a wheelchair or pushchair through.
- 3.29 The footway is bordered almost entirely by a brick wall. This, with the addition of parked cars, causes this narrow footway to feel even more constrained.
- 3.30 There is also a driveway that does not have dropped kerbs and would be difficult for a wheelchair or pushchair to cross.

Improvement options

- Widen footway into street; and
- Add dropped kerb at side entrance.

FIGURE 3.11 PHOTOGRAPHS OF LINK 3-9



Link 4-3: Pascal Street, north side

Key Observations

RAG Score:

-34

- No dropped kerbs;
- Poor lighting;
- Footway degrades and stops to the west of Wandsworth Road; and
- Maintenance and quality of environment are very poor (e.g. graffiti, rubbish).

- 3.31 This footway is adjacent to the Sainsbury's car park and is bordered by a brick wall. The surface quality between Wandsworth Road and the entrance to Sainsbury's is generally very good. On the west side of the entrance, the surface degrades until the footway ends abruptly at a loading bay while the roadway continues for an additional 40 meters. In most instances, the footway ending would be unacceptable, but, given that this is a dead end road with nothing to access beyond the loading bay, a footway is likely not needed.
- 3.32 There are no dropped kerbs at the entrance to the Sainsbury's car park which will impede the movement of those in a wheelchair.

Improvement options

- Add dropped kerbs at entrance to Sainsbury's car park;
- Increase cleaning and graffiti removal; and
- Improve lighting.

FIGURE 3.12 PHOTOGRAPHS OF LINK 4-3



Link 5-1 & 5-2: Battersea Park Road, east, north & south side

Key Observations

RAG Score: Link 5-1:

-8

Link 5-2:

14

- Shared cycle lane and footway is poorly implemented;
- High speed road with many HGVs;
- Poor quality surface; and
- Personal security is poor.

- 3.33 The road has many HGVs travelling at high speed which could be intimidating, especially where the footway narrows or is bordered by a brick wall. The lorries and HGVs bring associated safety, noise and pollution concerns that make the unpleasant for pedestrians.
- 3.34 The density of residential, retail and work place destinations in the area is low. The footway is in generally poor condition with a poorly implemented shared cycle lane on the footway that weaves around lamp poles and sign posts. The painted line that delineates the cycle lane is so thick with paint that it becomes a hazard to both pedestrians and cyclists.
- 3.35 The surface of these footways is average. When installed, they would have been of high quality. However, due to a lack of maintenance they have degraded. There are areas where water collects and much of the footway is covered in sand and dirt.
- 3.36 There is dropped kerb and tactile information, but again, due to a lack of maintenance they are in poor condition.
- 3.37 Personal security in this area is a major concern. As there are few destinations in the area, and very few pedestrians use the foot way (50 per hour) the area feels deserted at times. There are also no frontages along the footway and the area is characterised by brick walls, chain link fences and an empty office building.

Improvement options

- Move cycle lane in footway to bus lane;
- Implement traffic calming measures;
- Increase maintenance and cleaning of footway; and
- Encourage redevelopment and a change in land use in the area.

FIGURE 3.13 PHOTOGRAPHS OF LINK 5-1



FIGURE 3.14 PHOTOGRAPHS OF LINK 5-2



Existing Pedestrian Conditions

Link 5-3 & 5-4: Cringle Street, north and south side

Key Observations

RAG Score: Link 5-3:

-85

Link 5-4:

-75

- Intimidating pedestrian environment;
- Footways in generally poor condition; and
- HGVs often use footways as extension of roadway.

- 3.38 The pedestrian environment on Cringle Street more closely resembles a construction site than a public footway.
- 3.39 HGVs are continuously accessing the nearby industrial sites and the biggest danger for pedestrians in this area is that these vehicles use the footway to manoeuvre and park on. As the footways are used as road space, they are in very poor condition. Paving stones are broken and uneven and there is enough dirt accumulated in areas that it is not possible to see the paving stones underneath. There are dropped kerbs but many are of such poor quality that a wheelchair would not be able to use them.
- 3.40 The quality of the environment and personal security are both low due to the type of activity on the street, namely the lorries and the danger, noise and pollution associated with them. Pedestrians are not common in this area and need to be aware of the lorries moving around them as drivers may not expect them.
- 3.41 As this area is characterised by heavy industry and waste transfer facilities, the footways, as potentially dangerous and uncomfortable as they are, are not out of context.

Improvement options

- Encourage redevelopment and a change in land use in the area;
- Increase maintenance to reduce tripping hazards and improve aesthetics;
- Prevent lorries from driving on footway; and
- Rebuild dropped kerbs.

FIGURE 3.15 PHOTOGRAPHS OF LINK 5-3

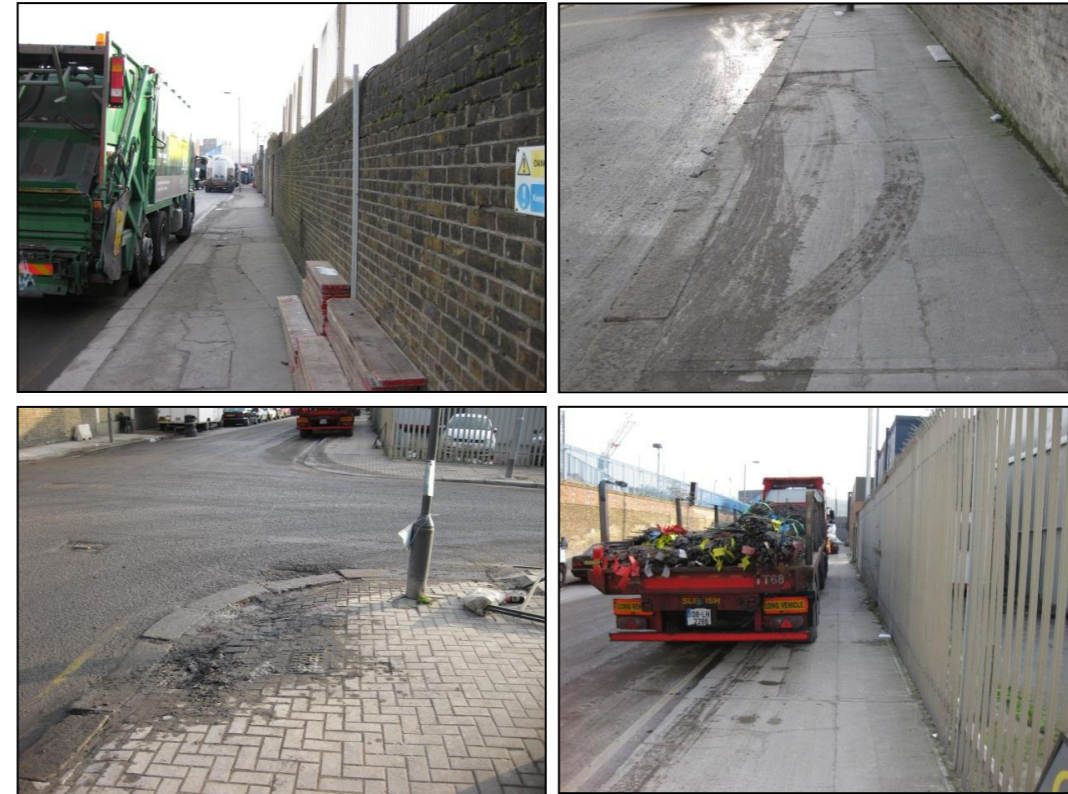


FIGURE 3.16 PHOTOGRAPHS OF LINK 5-4



Link 5-5 & 5-6: Kirtling Street, west & east side

Key Observations

RAG Score: Link 5-5:

-46

Link 5-6:

-7

- No dropped kerbs or tactile information;
- Poor quality surface; and
- Footways are bordered by empty store fronts and brick/metal wall.

- 3.42 While there is little physically wrong with these footways, they receive a red and yellow rating because of the surrounding environment.
- 3.43 **West footway:** This footway is bordered by a brick wall for almost the entirety of its length. There is an entrance to Battersea Power Station that does not have dropped kerbs or tactile information.
- 3.44 **East Footway:** Although there are commercial frontages along this section of footway, many appear inactive. The footway appears as though it was upgraded when these buildings were built. This is a contributing factor that gave this section a yellow rating.
- 3.45 With the almost continuous stream of lorries using the roadway, the pedestrian environment is severely degraded. The pollution, noise and danger associated with this volume of lorries is a key factor reducing personal security, the quality of the environment, permeability and increasing user conflict of these two footways.
- 3.46 One of the only ways to improve these footways is to changing their surroundings.

Improvement options

- Encourage redevelopment and a change in land use in the area; and
- Install dropped kerbs and tactile information.

FIGURE 3.17 PHOTOGRAPHS OF LINK 5-5 & 5-6



Link 5-7: Battersea Park Road, west, north side

Key Observations

RAG Score: Link 5-7:

4

- Clear width is poor due to obstructions in footway;
- High speed road with many HGVs;
- Poor quality surface; and
- Personal security is poor.

- 3.47 The road has many HGVs travelling at high speed which could be intimidating. The lorries and HGVs bring associated safety, noise and pollution concerns that make the unpleasant for pedestrians.
- 3.48 The density of residential, retail and work place destinations in the area is low largely due to the vacant Battersea Powers Station site that borders the footway. The hoarding from this site has been built to the edge of the footway which serves to make the footway look and feel more constrained than it actually is.
- 3.49 The surface of this footway is poor. There are many different textured surfaces where the footway has been patched. These surfaces do not always meet evenly which creates a tripping hazard.
- 3.50 Personal security in this area is a major concern. As there are few destinations in the area, and very few pedestrians use the foot way (50 per hour) the area feels deserted at times. There are also no frontages along the footway.

Improvement options

- Implement traffic calming measures;
- Increase maintenance and cleaning of footway; and
- Encourage redevelopment and a change in land use in the area.

Figure 3.18 Photographs of Link 5-7



Existing Pedestrian Conditions

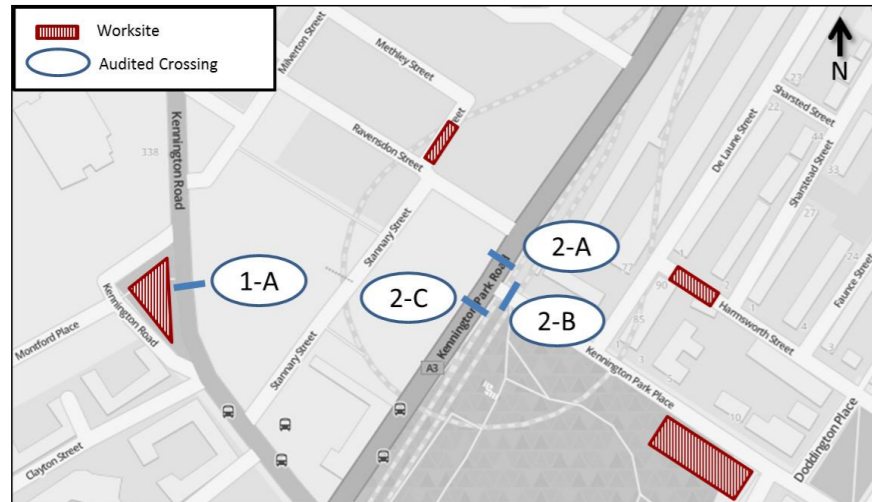
Crossing Performance

3.51 The following crossings have been included within this PERS audit:

Areas 1, 2 & 3

- Crossing 1-A - Kennington Road
- Crossing 2-A - Kennington Park Road, north
- Crossing 2-B - Kennington Park Place, east
- Crossing 2-C - Kennington Park Road, south

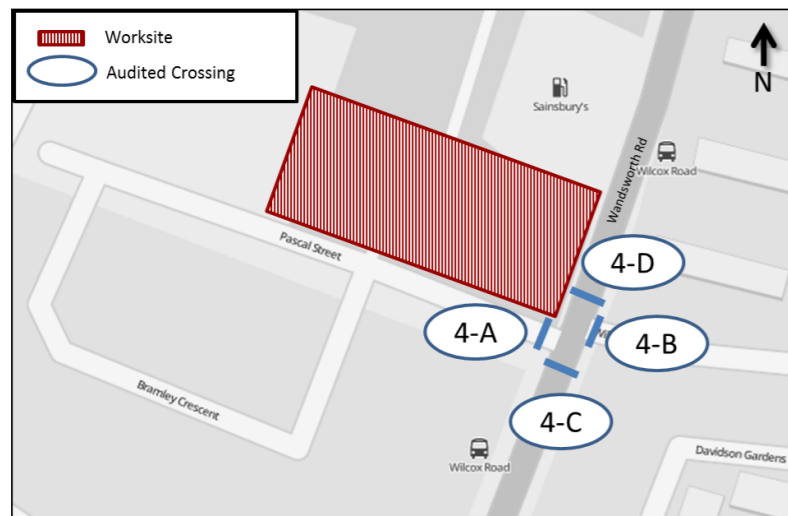
FIGURE 3.19 AREAS 1, 2 & 3 - AUDITED CROSSINGS



Area 4

- Crossing 4-A - Pascal Street, west
- Crossing 4-B - Wilcox Road, east
- Crossing 4-C - Wandsworth Road, south
- Crossing 4-D - Wandsworth Road, north

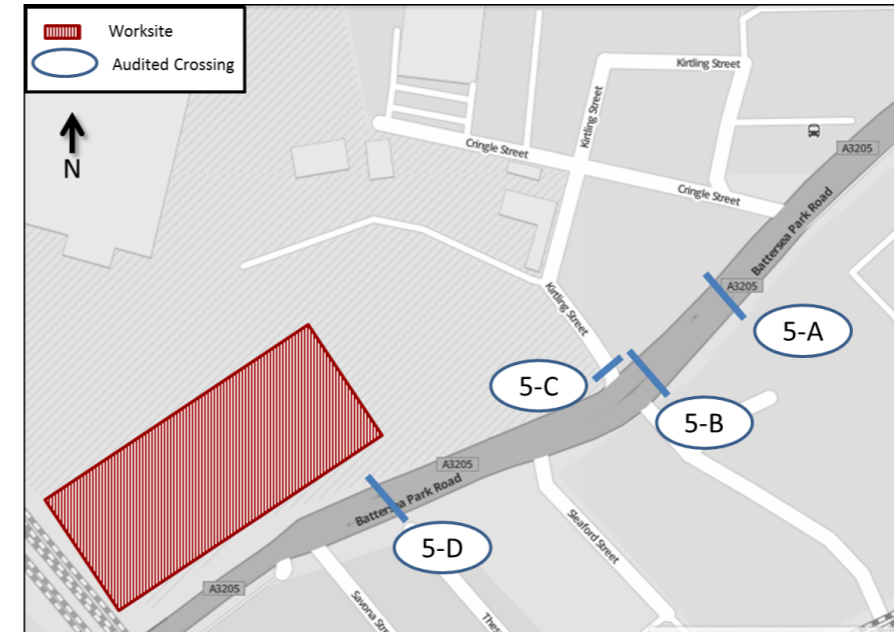
FIGURE 3.20 AREA 4 - AUDITED CROSSINGS



Area 5

- Crossing 5-A - Battersea Park Road, north
- Crossing 5-B - Battersea Park Road, east
- Crossing 5-C - Kirtling Street, north
- Crossing 5-D - Battersea Park Road, West

FIGURE 3.21 AREA 5 - AUDITED CROSSINGS



3.52 A total of 11 pedestrian crossings were assessed as part of the audit of these areas. A summary of the results are presented in Table 3.1. Figure 3.22 - Figure 3.24 provide maps of the overall Red, Amber, Green (RAG) scores;

- Red: Negative Overall
- Amber: Average Overall
- Green: Positive Overall

3.53 Copies of the pedestrian crossing site audit sheets are presented in Appendix B.

TABLE 3.1 SUMMARY OF PEDESTRIAN CROSSING SCORES

	RAG	Crossing Provision	Deviation from the desire line	Performance	Crossing Capacity	Delay	Legibility	Legibility for sensory impaired people	Dropped Kerbs	Gradient	Obstructions	Surface Quality	Maintenance
Crossing 1-A	108	3	0	3	3	3	3	3	2	3	3	3	3
Crossing 2-A	117	3	3	3	3	3	3	3	3	3	3	2	3
Crossing 2-B	120	3	3	3	3	3	3	3	3	3	3	3	3
Crossing 2-C	89	3	3	3	-1	3	-1	2	3	3	3	-1	0
Crossing 4-A	101	3	0	3	3	3	3	3	2	3	3	1	2
Crossing 4-B	108	2	1	3	3	3	3	3	3	3	3	3	2
Crossing 4-C	120	3	3	3	3	3	3	3	3	3	3	3	3
Crossing 4-D	111	3	3	3	3	3	1	3	3	2	3	1	3
Crossing 5-A	52	1	1	2	-1	0	3	1	2	3	0	-1	-2
Crossing 5-B	104	3	3	3	3	1	3	2	3	3	3	1	2
Crossing 5-C	106	3	2	2	2	3	3	3	2	3	3	3	1
Crossing 5-D	33	1	-1	-1	0	-2	-1	2	2	3	3	1	-1

FIGURE 3.22 OVERALL RAG SCORES FOR AREAS 1, 2 & 3 - CROSSINGS

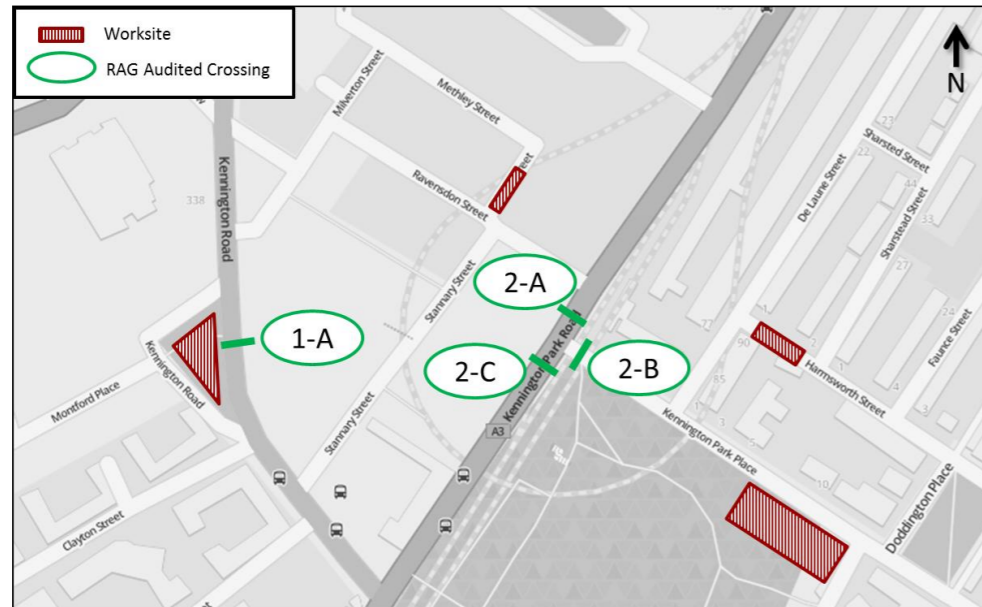


FIGURE 3.23 OVERALL RAG SCORES FOR AREA 4 - CROSSINGS

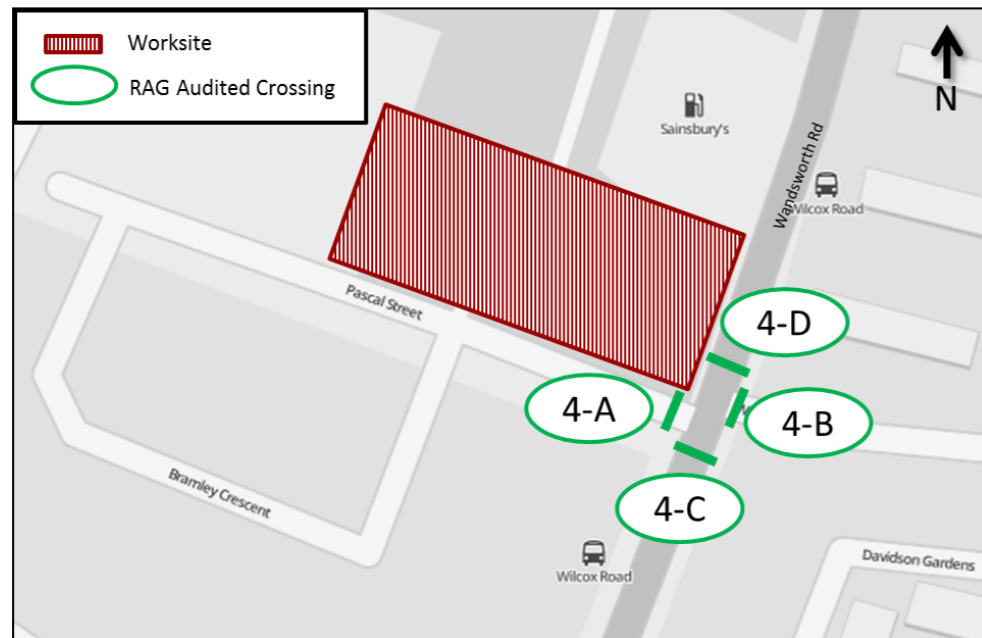


FIGURE 3.24 OVERALL RAG SCORES FOR AREA 5 - CROSSINGS



- 3.54 As seen in Table 3.1 and Figure 3.22 - Figure 3.24 all of the pedestrian crossings audited received a green rating.
- 3.55 Crossing 2-C and 5-A received the lowest ratings in this audit. Although both scored a green rating, these crossing could benefit from improvement.
- 3.56 Crossing 2-C has dropped kerbs, tactile information and proper signalling equipment. Its deficiency lies in the overall width of the crossing and the surface treatment in the roadway. Although the crossing is of adequate width, when compared to the other crossings at this junction, it seems very narrow. The crossing surface, where it crosses the northbound traffic lane, has a colour contrasting surface that is damaged and missing where some repair work has been completed.
- 3.57 Crossing 5-A, while up to standard in terms of crossing width, dropped kerbs, tactile information and signalling equipment, loses points due to a lack of maintenance and a narrow island. The dirt and sand that has accumulated in the dropped kerbs has entirely covered the first row of tactile information and partially covered the second. This has happened on both sides of the island and the south side of the roadway. The width of the island is also narrow and obstructed by traffic sign and lamp poles making it difficult for a wheelchair user to navigate.
- 3.58 Based on data obtained from TfL, crossing 2-B was the only crossing examined in this audit which has recorded a serious pedestrian accident. This accident will be discussed in detail in Chapter 6.

FIGURE 3.25 PHOTOGRAPHS OF CROSSING 2-C



FIGURE 3.26 PHOTOGRAPHS OF CROSSING 5-A



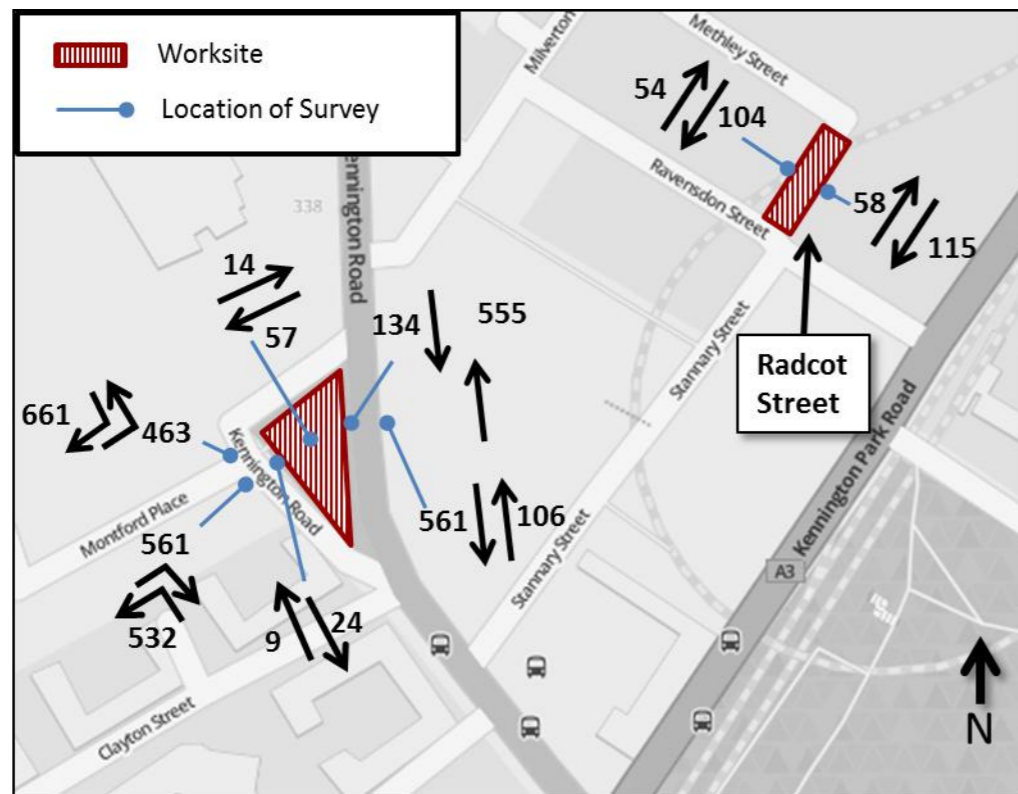
4 Pedestrian Surveys

4.1 Pedestrian survey data was obtained for strategic footways around NLE worksites. This data was provided by TfL and was collected between 0700 -1900 on the 13 - 15 November 2012 and is contained in full in Appendix C. A description of the pedestrian counts in relation to the PERS link assessments follows.

Areas 1 & 2

4.2 Pedestrian surveys were undertaken around Kennington Green and on both sides of Radcot Street in Areas 1 & 2(Figure 4.1).

FIGURE 4.1 AREAS 1& 2 TOTAL PEDESTRIAN FLOWS (0700 -1900)



Radcot Street

4.3 Radcot Street was surveyed on Thursday 15 November 2012 on a dry day from 0700 to 1900. This residential street experienced 12-hour pedestrian flows of 158 on the north side and 173 on the south side of the street. The PERS audit shows a green rating for both of these links with poor surface quality cited as the worst criterion. Six mobility impaired adults used this footway during the 12 hour survey.

Kennington Green

4.4 Surveys of pedestrian activity around Kennington Green were undertaken on Wednesday 14 November 2012 on a dry day.

4.5 Pedestrian flows on both sides of Kennington Road, to the east of Kennington Green, were greater than 650 pedestrians over 12 hours. Immediately to the north and south of the Green, Kennington Road is characterised by shops and services. The PERS audit identified link 2-3 & 1.1-4 as green as having no major deficiencies. 54 mobility restricted adults and children used these footways over the 12 hour survey period. The majority of these (47) were children in a pushchair or being carried.

4.6 The path through Kennington Green sees comparatively low volumes of pedestrian traffic with only 71 people traversing this footpath in both directions. The path through Kennington Green does not follow any particular desire line, except to access to the pelican crossing at Kennington Road. In this area, the east side of Kennington Road does not have retail or residential frontages and the footway is bordered by a brick wall for over 100m.

4.7 Similarly, pedestrian traffic on the west sided of Kennington Road, to the west of Kennington Green, is also low. This footway was used by 33 people over 12 hours. 2 of these were mobility impaired children.

4.8 Montford Place, at the intersection with Kennington Road, experiences high volumes of pedestrians. Pedestrian counts here show more than 2,000 people using the footways on each side of Montford Place. The PERS analysis on the north and west side of Kennington Green received a rating of red and yellow, respectively. This is problematic considering the number of pedestrians using these footways.

4.9 A survey of the pedestrian crossing on Kennington Road at Kennington Green was undertaken on 26 March 2013 during the am, inter and pm peaks. A summary of this survey are included in Table 4.1 with complete data in Appendix C.

TABLE 4.1 PEDESTRIAN CROSSING DATA - KENNINGTON ROAD AT KENNINGTON GREEN

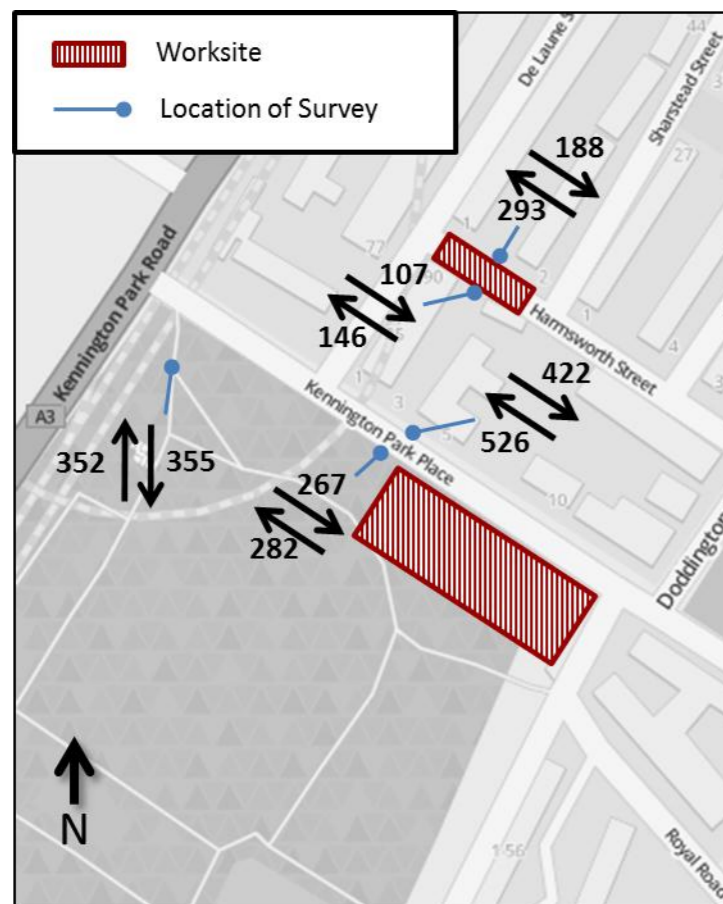
	No. of times signal was activated:	Pedestrian crossings movements during Red Man:	Pedestrian crossings movements during Green Man /Flashing Green:	Total
AM Peak (0700-1000)	40	70	27	97
Inter Peak (1200-1400)	16	59	10	69
PM Peak (1600-1900)	24	78	26	104

4.10 As seen in Table 4.1, this crossing is not used often during the peak periods. Over the three hour am peak, only 30 people per hour used this crossing. Additionally, the majority of pedestrians crossed Kennington Road during the red man phase. This, as noted by the surveyor, was due to a long signal cycle and gaps in traffic flows. This meant that while waiting for the green man, pedestrians could easily cross to the island during a gap in traffic.

Area 3

- 4.11 The footways on the north and south side of Harmsworth Street experienced pedestrian flows of 481 and 253 respectively over the 12 hour survey period. It is not unexpected that the north side footway had more traffic as it is a more pleasant environment and provides access to the residential streets to the north (amber vs. green rating). Of the 734 pedestrian that used Harmsworth Street, 22 of them were mobility impaired.
- 4.12 Kennington Park Place experienced combined flows of almost 1,500 pedestrians over the 0700-1900 period. This road acts as a main pedestrian thoroughfare connecting the residential neighbourhood to the east with the retail and commercial areas to the west, along Kennington Park Road. Flows may be higher here as the park can act as a barrier, forcing pedestrians to Kennington Park Place. There were 75 mobility impaired pedestrians that used this corridor over the 12 hour survey. There is an alternate route through the park; however, flows on this route are less than half at 707.

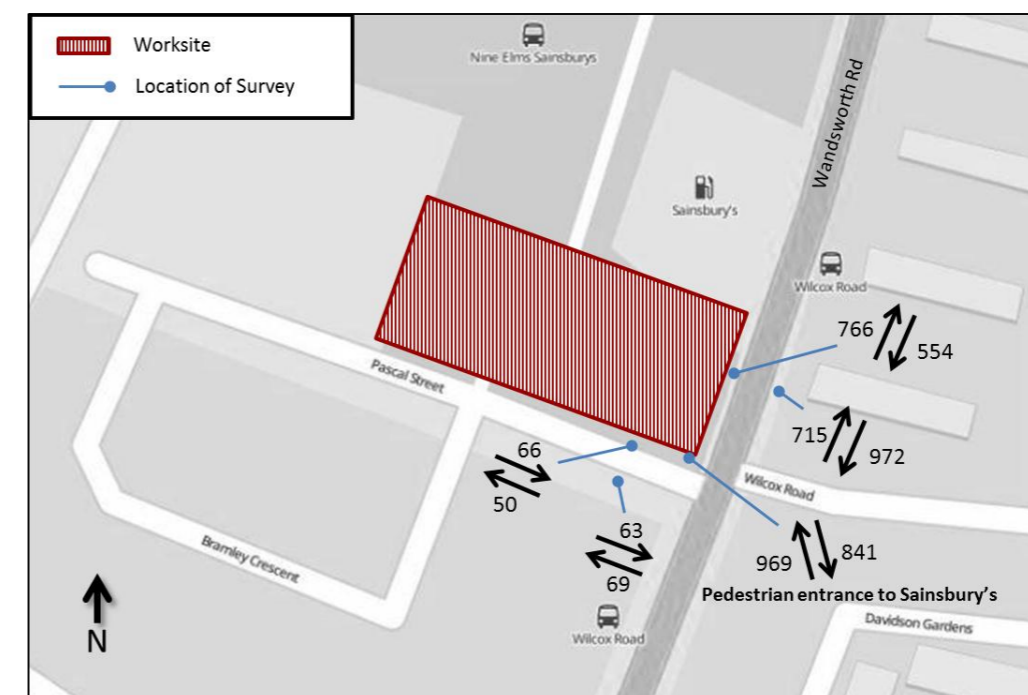
FIGURE 4.2 AREA 3 TOTAL PEDESTRIAN FLOWS (0700 -1900)



Area 4

- 4.13 The number of pedestrian movements in Area 4 is much higher than the other areas. This is attributable to the fact that the surveys were undertaken on a street containing commercial activities and near a large supermarket. The pedestrian entrance to Sainsbury's, the southernmost collection site shown in Figure 4.3, has the highest pedestrian flows of all surveyed sites at 1,810 during the 12 hour survey period. Of these, 135 were mobility impaired. The two survey locations on the east and west side of Wandsworth Road had pedestrian flows of 1,687 and 1,320, respectively. There were 80 pedestrians with mobility impediments moving through this corridor. Despite the large numbers of pedestrians using these footways, capacity should not be an issue as both received high ratings in the PERS audit.
- 4.14 The pedestrian traffic on Pascal Street is low when compared to the other surveyed sites. Total pedestrian traffic along both sides of Pascal Street was 248 (0700-1900).

FIGURE 4.3 AREA 4 TOTAL PEDESTRIAN FLOWS (0700 -1900)

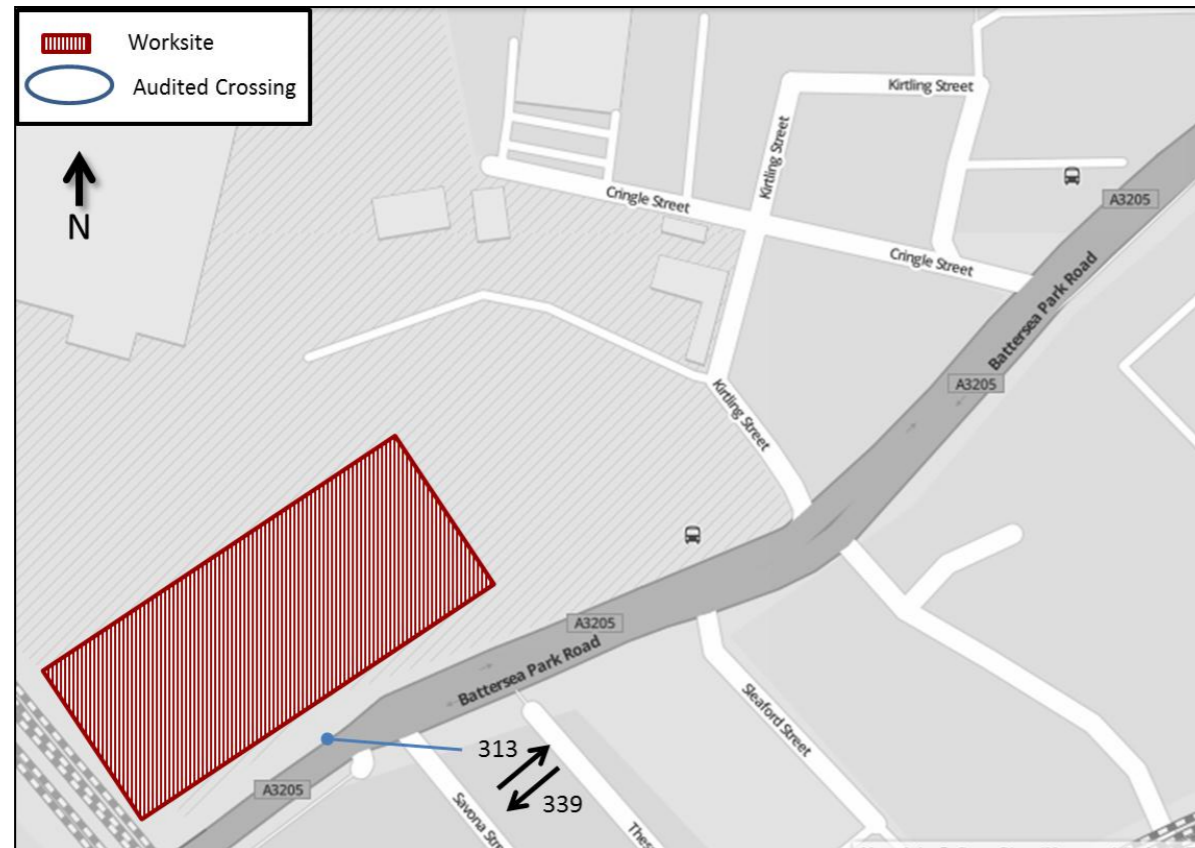


Existing Pedestrian Conditions

Area 5

- 4.15 There was only one pedestrian count undertaken in Area 5, on the north side of Battersea Park Road (Figure 4.4). Considering the surrounding environment, quality of the footway and lack of origins and destinations in the area, this footway is used by 652 pedestrians from 0700 to 1900. Although this footway was not audited in this report, it shares similar characteristics to Link 5-2 to the east which received an amber rating.

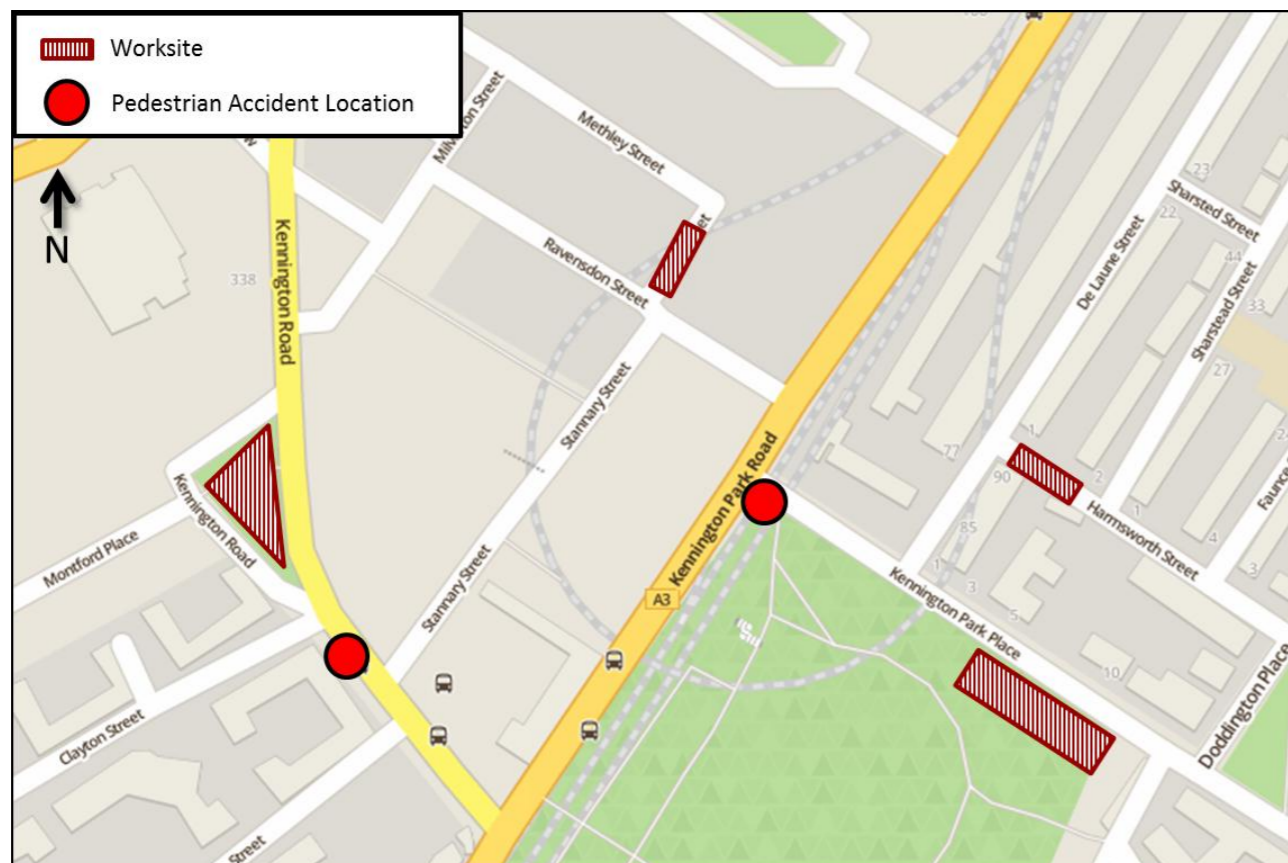
FIGURE 4.4 AREA 5 PEDESTRIAN COUNTS (0700 -1900)



5 Pedestrian Accidents

- 5.1 Accident data was provided by TfL in December 2012 and includes serious and fatal accidents that occurred between 16 July 2009 and 27-June 2012. There were two non-fatal but serious pedestrian accidents in the audited areas (Figure 5.1). As previously described, one accident occurred at crossing 2-B. The other accident occurred near link 2-1.
- 5.2 The accident near crossing 2-B occurred at noon on 17 March 2010. A pedestrian was struck and seriously injured by a vehicle turning right from Kennington Park Road to Kennington Park Place. This is a signalised junction and the pedestrian was on a marked crossing. The pedestrian was crossing against the red-man signal. Crossing 2-B received a green rating in the audit and little improvement is proposed.
- 5.3 The accident near Link 2-1 occurred at 16:47 on 13 April 2010. A pedestrian was seriously injured when attempting to cross the road and was struck by an oncoming car. It appears that this accident happened at, or very near to, an uncontrolled crossing.
- 5.4 Both of these sites received a green rating in the PERS audit and, from onsite experience, nothing about these two locations suggest that pedestrian safety issues would be exacerbated by the NLE scheme proposals.

FIGURE 5.1 LOCATION OF PEDESTRIAN ACCIDENTS



6 PERS Audit Summary

- 6.1 Steer Davies Gleave has undertaken a PERS audit of the existing pedestrian environment around the proposed NLE worksites. Data for the links audit was collected on Thursday 13 December 2012. Data for the pedestrian crossings audit was collected on Friday 4 January 2013.
- 6.2 A total of 40 links and 11 crossings were reviewed and the resulting scores are mainly positive with 22 links classed as green (positive overall) and no crossings classed as amber or red (average overall). Those links that are classed as amber or red are listed below:
- Area 1 - Kennington Green
- Link 1-5 - Kennington (Green) North, north side;
 - Link 1-7 - Kennington (Green) West, west side;
 - Link 1-10 - Montford Place, south side;
- Area 2 - Radcot Street
- Link 2-1 - Stannary Street South, south side;
 - Link 2-7 - Ravensdon Street South, at the point it narrows;
- Area 3 - Kennington Park and Harmsworth Street
- Link 3-1 - St. Agnes Place, west side;
 - Link 3-2 - St. Agnes Place, east side;
 - Link 3-4 - Kennington Park Place, north side;
 - Link 3-6 - Kennington Park Road, west side;
 - Link 3-8 - De Laune Street, east side;
 - Link 3-9 - Harmsworth Street, south side;
- Area 4 - Nine Elms
- Link 4-3 - Pascal Street, north side;
 - Link 5-1 - Battersea Park Road, south side;
- Area 5 - Battersea Power Station
- Link 5-1 - Battersea Park Road, south side;
 - Link 5-2 - Battersea Park Road, north side;
 - Link 5-3 - Cringle Street, north side;
 - Link 5-4 - Cringle Street, south side;
 - Link 5-5 - Kirtling Street, west side;
 - Link 5-6 - Kirtling Street, east side; and
 - Link 5-7 - Battersea Park Road, west - north side.
- 6.3 With the exception of Area 5, the links and crossings performed well, with the majority of assessment parameters scoring average or good.

Areas 1, 2, 3 & 4

- 6.4 Areas 1, 2 & 3 are characterised by residential land uses and although the footways could be improved, they are adequate in the given context. Many lost marks due to obstructions left in the footway by residents (wheelie bins, bicycles etc.).
- 6.5 The footways in Area 4 all scored average or better. The footways along Wandsworth Road were especially good considering the volume and speed of traffic on the roadway.
- 6.6 The pedestrian crossings in these areas were good overall. They do not require pedestrians to wait long for signals to show a green man nor deviate from desire lines. All crossings had dropped kerbs with tactile paving and minimal obstructions. Crossings on main roads normally had islands between the two lanes of traffic.

Area 5

- 6.7 The outlier in this audit is Area 5 (Battersea Park Road, Kirtling Street and Cringle Street). The pedestrian environment in this area is generally very poor. This is largely due to factors that are very difficult to change. The land use in the area is dominated by heavy industry which can include activities that negatively impact the pedestrian environment. A solid waste transfer station and concrete manufacturing facility generate a significant number of HGVs on Kirtling Street and Cringle Street in particular. The associated safety issues, air pollution and noise create an intimidating environment for pedestrians. HGVs using the footway as an extension of the road for manoeuvring and parking are represent particular safety hazards for pedestrians.
- 6.8 The crossings in Area 5 were the poorest of those surveyed. While the crossings were functionally adequate, the maintenance and cleanliness of them is generally very poor. Dropped kerbs and tactile paving is installed, but they are not flush with the roadway and in some instances, have accumulated so much sand and dirt that the tactile paving is almost covered.
- 6.9 There are limited improvements that can be made to the pedestrian environment without significant changes to the surrounding urban environment. It is noted that significant changes are planned as part of the wider development of the Opportunity Area, and this will help to improve conditions for pedestrians in this area in the short to medium term.

APPENDIX

A

PERS AUDIT SHEETS - LINKS

1-1 Link Assessment Form				Page 1 of 2		1-1 Link Assessment Form				Page 2 of 2							
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-1		Parameter		Checklist Factors		Checklist		Overall Score		Comments			
Link Name: Kennington Road S-West side				Date: 13/12/2012 Time: 3:50:00 PM								-3 to +3					
Auditor: Grant Fletcher																	
Parameter	Checklist Factors	Checklist		Overall Score	Comments												
		+ve	+/-	-3 to +3													
Effective Width	Width for pedestrian flow	✓		3	+		Tactile Information	Evident	✓		3		+				
	Wheelchair accessibility	✓						Consistent/correct	✓								
	All sections acceptable width	✓			Maintained			✓		-							
	Separation from traffic	✓			Appropriate Colour			✓									
	Allowance for obstructions	✓			Interruptions			✓									
	Pedestrian congestion	✓			Tapping line			✓									
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			1		+				
	Adequate capacity	✓						Location							-		
	Level dropped/flush	✓			Assists navigation												
	Gradient of drop	✓			Enhanced visibility / obstructions												
	Consistency	✓			Space identification												
Frequency of dropped kerbs	✓		Made to specification														
Gradient	Severity				+		Personal Security	Perceived/sense of crime		✓	3		+				
	Steps/ramps							Activity on the street	✓						-		
	Rest points				Lighting			✓									
	Undulations				Police presence			✓									
	Handrail provision				CCTV				✓								
Presence of cross falls			Visual appeal		✓												
Obstructions	Presence of obstructions		✓	-2	+		Surface Quality	Smoothness/trip hazards	✓		3		+				
	Location/alignment		✓					Surface friction	✓						-		
	Overhead obstructions	✓			Slippery surfaces			✓									
	Tapering/opaque obstructions		✓		UKPMS CVI hierarchy			✓									
	Tactile warnings		✓		Maintenance			✓									
Sightline reduction		✓	Context suitability	✓													
Permeability	Frequency of crossing points		✓	1	+		User Conflict	Conflicting movements		✓	1		+				
	Parked cars/physical barriers	✓						User flows		✓					-		
	Traffic flow		✓		Encroachment on pedestrian space				✓								
	Dropped kerbs	✓			Segregation from cyclists			✓									
	Pedestrian barriers	✓			Bus queues an obstruction				✓								
Sightlines	✓		Adequate space provision	✓													
Legibility	Signage provision				+		Quality of Environment	Traffic/noise		✓	-1		+				
	Signage clarity							Aesthetics		✓					-		
	Information boards				Soft landscaping				✓								
	Distances given on signs				Quality of materials				✓								
	Sightlines				Quality of private frontages				✓								
Built form aids navigation			Sense of place		✓												
Lighting	Intensity/Frequency		✓	1	+		Maintenance	Cleanliness	✓		1		+				
	Definition/colour		✓					Drainage	✓						-		
	Maintenance	✓			Evidence of neglect			✓									
	Context Suitability	✓			Seasonal foliage				✓								
	After-dark	✓			Graffiti				✓								
Obstructions	✓		Landscaping		✓												
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS											
						Next Link		Name: Kennington Road S-East side				Ref: Link 1-2					
						Previous Link		Name:				Ref:					
						OTHER NOTES:											

1-2 Link Assessment Form				Page 1 of 2		1-2 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-2		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kennington Road S-East side				Date: 13/12/2012 Time: 4:00:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		3	+		Tactile Information	Evident	✓		3				
	Wheelchair accessibility	✓						Consistent/correct	✓						
	All sections acceptable width	✓			Maintained			✓		+					
	Separation from traffic	✓			Appropriate Colour			✓		-					
	Allowance for obstructions	✓			Interruptions			✓							
	Pedestrian congestion	✓			Tapping line			✓							
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			0				
	Adequate capacity	✓						Location							+
	Level dropped/flush	✓			Assists navigation					-					
	Gradient of drop	✓			Enhanced visibility / obstructions										
	Consistency	✓			Space identification										
Gradient	Severity						Personal Security	Made to specification			0				
	Steps/ramps							Perceived/sense of crime		✓					+
	Rest points							Activity on the street	✓						-
	Undulations							Lighting		✓					
	Handrail provision							Police presence	✓						
Obstructions	Presence of obstructions	✓		3	+		Surface Quality	CCTV		✓	3				
	Location/alignment	✓						Visual appeal		✓					+
	Overhead obstructions	✓			Smoothness/trip hazards			✓		-					
	Tapering/opaque obstructions	✓			Surface friction			✓							
	Tactile warnings	✓			Slippery surfaces			✓							
Permeability	Sightline reduction	✓		1	-		User Conflict	UKPMS CVI hierarchy	✓		2				
	Frequency of crossing points		✓					Maintenance	✓						+
	Parked cars/physical barriers		✓		Context suitability			✓		-					
	Traffic flow				Conflicting movements				✓						
	Dropped kerbs	✓			User flows			✓							
Legibility	Pedestrian barriers	✓					Quality of Environment	Encroachment on pedestrian space	✓		0				
	Sightlines	✓						Segregation from cyclists	✓						+
	Signage provision							Bus queues an obstruction	✓						-
	Signage clarity							Adequate space provision	✓						
	Information boards							Traffic/noise		✓					
Lighting	Distances given on signs			-1	+		Maintenance	Aesthetics		✓	3				
	Sightlines							Soft landscaping		✓					+
	Built form aids navigation				Quality of materials				✓	-					
	Intensity/Frequency		✓		Quality of private frontages				✓						
	Definition/colour		✓		Sense of place				✓						
OTHER NOTES: Greyed out sections were not analysed.	Maintenance							Cleanliness	✓		3				
	Context Suitability		✓					Drainage	✓						+
	After-dark		✓					Evidence of neglect	✓						-
	Obstructions		✓					Seasonal foliage	✓						
								Graffiti	✓						
						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Kennington Road N-West side		Ref: Link 1-3					
						Previous Link		Name: Kennington Road S-West side		Ref: Link 1-1					
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:									

1-3 Link Assessment Form				Page 1 of 2		1-3 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-3		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kennington Road N-West side				Date: 13/12/2012 Time: 4:15:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident	✓		3		+		
	Wheelchair accessibility	✓						Consistent/correct	✓						
	All sections acceptable width		✓					Maintained	✓						
	Separation from traffic		✓		Appropriate Colour			✓							
	Allowance for obstructions	✓			Interruptions			✓							
	Pedestrian congestion	✓			Tapping line			✓							
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			3		+		
	Adequate capacity	✓						Location							
	Level dropped/flush	✓						Assists navigation							
	Gradient of drop	✓						Enhanced visibility / obstructions							
	Consistency	✓						Space identification							
Gradient	Severity			3	-		Personal Security	Perceived/sense of crime	✓		3		+		
	Steps/ramps							Activity on the street	✓						
	Rest points							Lighting	✓						
	Undulations							Police presence	✓						
	Handrail provision							CCTV	✓						
Obstructions	Presence of obstructions		✓	0	+		Surface Quality	Smoothness/trip hazards	✓		3		-		
	Location/alignment		✓					Surface friction	✓						
	Overhead obstructions	✓						Slippery surfaces	✓						
	Tapering/opaque obstructions							UKPMS CVI hierarchy	✓						
	Tactile warnings		✓					Maintenance	✓						
Permeability	Frequency of crossing points		✓	2	-		User Conflict	Context suitability	✓		2		+		
	Parked cars/physical barriers	✓						Conflicting movements	✓						
	Traffic flow		✓					User flows	✓						
	Dropped kerbs	✓						Encroachment on pedestrian space	✓						
	Pedestrian barriers	✓						Segregation from cyclists	✓						
Legibility	Signage provision			2	+		Quality of Environment	Bus queues an obstruction	✓		1		-		
	Signage clarity							Adequate space provision		✓					
	Information boards							Traffic/noise		✓					
	Distances given on signs							Aesthetics		✓					
	Sightlines							Soft landscaping		✓					
Lighting	Intensity/Frequency		✓	2	-		Maintenance	Quality of materials		✓	3		+		
	Definition/colour	✓						Cleanliness	✓						
	Maintenance	✓						Drainage	✓						
	Context Suitability		✓					Evidence of neglect	✓						
	After-dark		✓					Seasonal foliage	✓						
OTHER NOTES: Greyed out sections were not analysed.															

1-4 Link Assessment Form				Page 1 of 2		1-4 Link Assessment Form				Page 2 of 2						
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-4		Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Kennington Road N-East side				Date: 13/12/2012 Time: 4:25:00 PM								-3 to +3				
Auditor: Grant Fletcher																
Parameter	Checklist Factors	Checklist		Overall Score	Comments											
		+ve	+/-	-3 to +3												
Effective Width	Width for pedestrian flow	✓		3	+		Tactile Information	Evident	✓		3		+			
	Wheelchair accessibility	✓						Consistent/correct	✓							
	All sections acceptable width	✓			Maintained			✓		-						
	Separation from traffic	✓			Appropriate Colour			✓								
	Allowance for obstructions	✓			Interruptions			✓								
	Pedestrian congestion	✓			Tapping line			✓								
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			2		+			
	Adequate capacity	✓						Location								
	Level dropped/flush	✓						Assists navigation							-	
	Gradient of drop	✓						Enhanced visibility / obstructions								
	Consistency	✓						Space identification								
Frequency of dropped kerbs	✓		Made to specification													
Gradient	Severity				+		Personal Security	Perceived/sense of crime		✓	2		+			
	Steps/ramps							Activity on the street	✓							
	Rest points							Lighting	✓						-	
	Undulations							Police presence	✓							
	Handrail provision							CCTV	✓							
Presence of cross falls			Visual appeal		✓											
Obstructions	Presence of obstructions	✓		1	+		Surface Quality	Smoothness/trip hazards	✓		3		+			
	Location/alignment	✓						Surface friction	✓							
	Overhead obstructions	✓						Slippery surfaces	✓						-	
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy	✓							
	Tactile warnings	✓						Maintenance	✓							
	Sightline reduction	✓						Context suitability	✓							
Permeability	Frequency of crossing points	✓		2	+		User Conflict	Conflicting movements	✓		3		+			
	Parked cars/physical barriers	✓						User flows	✓							
	Traffic flow		✓					Encroachment on pedestrian space	✓						-	
	Dropped kerbs	✓						Segregation from cyclists	✓							
	Pedestrian barriers	✓						Bus queues an obstruction	✓							
Sightlines	✓		Adequate space provision	✓												
Legibility	Signage provision				+		Quality of Environment	Traffic/noise		✓	-1		+			
	Signage clarity							Aesthetics		✓						
	Information boards							Soft landscaping		✓					-	
	Distances given on signs							Quality of materials		✓						
	Sightlines							Quality of private frontages		✓						
	Built form aids navigation							Sense of place		✓						
Lighting	Intensity/Frequency	✓		2	+		Maintenance	Cleanliness	✓		3		+			
	Definition/colour		✓					Drainage	✓							
	Maintenance	✓						Evidence of neglect	✓						-	
	Context Suitability		✓					Seasonal foliage	✓							
	After-dark		✓					Graffiti	✓							
Obstructions	✓		Landscaping	✓												
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS										
						Next Link		Name: ##		Ref: #N/A						
						Previous Link		Name: Kennington Road N-West side		Ref: Link 1-3						
OTHER NOTES:																

1-5 Link Assessment Form					Page 1 of 2		1-5 Link Assessment Form					Page 2 of 2		
Location: Zone 1 Northern Line Extension					Parameter		Checklist Factors			Checklist		Overall Score	Comments	
Link Name: Kennington (Green) N - North side					Link Ref: Link 1-5					+ve +/- -ve		-3 to +3		
Auditor: Grant Fletcher					Date: 13/12/2012 Time: 4:35:00 PM									
Parameter	Checklist Factors	Checklist		Overall Score	Comments									
		+ve	+/-	-3 to +3										
Effective Width	Width for pedestrian flow		✓	-3	+	Very poor, not likely to accommodate a push chair.	Tactile Information	Evident		✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct		✓				
	All sections acceptable width		✓		-			Maintained		✓				
	Separation from traffic		✓					Appropriate Colour		✓				
	Allowance for obstructions		✓					Interruptions		✓				
	Pedestrian congestion		✓					Tapping line		✓				
Dropped Kerbs	Located on desire lines		✓	-2	+		Colour Contrast	Tonal contrast			1	+		
	Adequate capacity	✓						Location						
	Level dropped/flush		✓					Assists navigation						
	Gradient of drop		✓					Enhanced visibility / obstructions						
	Consistency		✓					Space identification						
Gradient	Severity			-	-		Personal Security	Made to specification			-3	-		
	Steps/ramps							Perceived/sense of crime	✓					
	Rest points							Activity on the street		✓				
	Undulations							Lighting		✓				
	Handrail provision							Police presence		✓				
Obstructions	Presence of obstructions		✓	-3	+	Narrow Footway to begin with, obstructions make it worse, bollards, street lamps etc.	Surface Quality	CCTV		✓	-3	+		
	Location/alignment		✓					Visual appeal	✓					
	Overhead obstructions		✓					Smoothness/trip hazards		✓				
	Tapering/opaque obstructions		✓					Surface friction		✓				
	Tactile warnings		✓					Slippery surfaces		✓				
	Sightline reduction		✓					UKPMS CVI hierarchy		✓				
Permeability	Frequency of crossing points		✓	2	+		User Conflict	Maintenance		✓	-3	-	Vehicles parked with end overhanging footway, rubbish bins stored in already narrow footway.	
	Parked cars/physical barriers		✓					Context suitability		✓				
	Traffic flow	✓						Conflicting movements		✓				
	Dropped kerbs		✓					User flows		✓				
	Pedestrian barriers	✓						Encroachment on pedestrian space		✓				
Legibility	Sightlines	✓		-	-		Quality of Environment	Segregation from cyclists	✓		-2	+		
	Signage provision							Bus queues an obstruction	✓					
	Signage clarity							Adequate space provision		✓				
	Information boards							Traffic/noise		✓				
	Distances given on signs							Aesthetics		✓				
	Sightlines							Soft landscaping		✓				
Lighting	Built form aids navigation			-1	+		Maintenance	Quality of materials		✓	-2	-		
	Intensity/Frequency		✓					Sense of place		✓				
	Definition/colour		✓					Cleanliness	✓					
	Maintenance		✓					Drainage	✓					
	Context Suitability		✓					Evidence of neglect		✓				
OTHER NOTES: Greyed out sections were not analysed.	After-dark		✓	-	-		LINKAGES TO OTHER REVIEW FORMS	Seasonal foliage		✓	-2	+		
	Obstructions	✓						Graffiti	✓					
								Landscaping		✓				
							Next Link		Name: Kennington (Green) N - South side		Ref: Link 1-6			
							Previous Link		Name: Kennington Road N-East side		Ref: Link 1-4			
OTHER NOTES: Greyed out sections were not analysed.							OTHER NOTES:							

1-6 Link Assessment Form				Page 1 of 2		1-6 Link Assessment Form				Page 2 of 2				
Location: Zone 1 Northern Line Extension				Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Kennington (Green) N - South side				Link Ref: Link 1-6				+ve +/- -ve		-3 to +3				
Auditor: Grant Fletcher				Date: 13/12/2012 Time: 4:35:00 PM										
Parameter	Checklist Factors	Checklist		Overall Score	Comments									
		+ve	+/-	-3 to +3										
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident			-3	+	None evident	
	Wheelchair accessibility		✓					Consistent/correct						✓
	All sections acceptable width		✓		-			Maintained				✓		
	Separation from traffic	✓						Appropriate Colour				✓		
	Allowance for obstructions	✓						Interruptions				✓		
	Pedestrian congestion	✓						Tapping line				✓		
Dropped Kerbs	Located on desire lines	✓		2	+		Colour Contrast	Tonal contrast			2	+		
	Adequate capacity	✓						Location						
	Level dropped/flush		✓					Assists navigation						
	Gradient of drop	✓						Enhanced visibility / obstructions						
	Consistency		✓					Space identification						
Gradient	Severity			2	-		Personal Security	Made to specification			1	-		
	Steps/ramps							Perceived/sense of crime	✓					
	Rest points							Activity on the street		✓				
	Undulations							Lighting						✓
	Handrail provision							Police presence		✓				
Obstructions	Presence of obstructions		✓	2	+		Surface Quality	CCTV		✓	2	+	Generally good throughout	
	Location/alignment	✓						Visual appeal	✓					
	Overhead obstructions	✓						Smoothness/trip hazards						✓
	Tapering/opaque obstructions	✓						Surface friction	✓					
	Tactile warnings		✓					Slippery surfaces	✓					
Permeability	Sightline reduction	✓		2	-		User Conflict	UKPMS CVI hierarchy			1	-	tree roots at west end could be a trip hazard.	
	Frequency of crossing points		✓					Maintenance	✓					
	Parked cars/physical barriers		✓					Context suitability		✓				
	Traffic flow	✓						Conflicting movements	✓					
	Dropped kerbs	✓						User flows	✓					
Legibility	Pedestrian barriers	✓		2	+		Quality of Environment	Segregation from cyclists	✓		1	+		
	Sightlines	✓						Encroachment on pedestrian space	✓					
	Signage provision							Segregation from cyclists	✓					
	Signage clarity							Bus queues an obstruction	✓					
	Information boards							Adequate space provision		✓				
Lighting	Distances given on signs			-2	-		Maintenance	Traffic/noise		✓	1	+		
	Sightlines							Cleanliness		✓				
	Built form aids navigation							Drainage		✓				
	Intensity/Frequency		✓					Evidence of neglect		✓				
	Definition/colour		✓					Seasonal foliage	✓					
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS								
						Next Link		Name: Kennington (Green) W - West side		Ref: Link 1-7				
						Previous Link		Name: Kennington (Green) N - North side		Ref: Link 1-5				
OTHER NOTES:														

1-7 Link Assessment Form					Page 1 of 2		1-7 Link Assessment Form					Page 2 of 2		
Location: Zone 1 Northern Line Extension					Parameter		Checklist Factors			Checklist		Overall Score	Comments	
Link Name: Kennington (Green) W - West side					Link Ref: Link 1-7					+ve +/- -ve		-3 to +3		
Auditor: Grant Fletcher					Date: 13/12/2012 Time: 2:40:00 PM									
Parameter	Checklist Factors	Checklist		Overall Score	Comments									
		+ve	+/-	-3 to +3										
Effective Width	Width for pedestrian flow		✓	-3	+	Very narrow near Montford St. Greenery encroaching at narrow area	Tactile Information	Evident		✓	-3	+	None at Montford Place	
	Wheelchair accessibility		✓					Consistent/correct		✓				
	All sections acceptable width		✓		-			Maintained		✓				
	Separation from traffic		✓					Appropriate Colour		✓				
	Allowance for obstructions		✓					Interruptions		✓				
	Pedestrian congestion		✓					Tapping line		✓				
Dropped Kerbs	Located on desire lines		✓	-3	+	No Dropped Kerbs at Montford Place	Colour Contrast	Tonal contrast			2	+		
	Adequate capacity		✓					Location						
	Level dropped/flush		✓					Assists navigation						
	Gradient of drop		✓					Enhanced visibility / obstructions						
	Consistency		✓					Space identification						
Gradient	Severity			2	-		Personal Security	Made to specification			-1	-		
	Steps/ramps							Perceived/sense of crime	✓					
	Rest points							Activity on the street	✓					
	Undulations							Lighting	✓					
	Handrail provision							Police presence		✓				
Obstructions	Presence of obstructions		✓	2	+		Surface Quality	CCTV		✓	0	+		
	Location/alignment		✓					Visual appeal		✓				
	Overhead obstructions	✓						Smoothness/trip hazards		✓				
	Tapering/opaque obstructions	✓						Surface friction		✓				
	Tactile warnings		✓					Slippery surfaces	✓					
Permeability	Sightline reduction	✓		1	-		User Conflict	UKPMS CVI hierarchy			1	-		
	Frequency of crossing points		✓					Maintenance		✓				
	Parked cars/physical barriers		✓					Context suitability		✓				
	Traffic flow	✓						Conflicting movements		✓				
	Dropped kerbs		✓					User flows		✓				
Legibility	Pedestrian barriers	✓		3	+	Good for this type of street	Quality of Environment	Encroachment on pedestrian space		✓	1	+		
	Sightlines	✓						Segregation from cyclists	✓					
	Signage provision							Bus queues an obstruction	✓					
	Signage clarity							Adequate space provision		✓				
	Information boards							Traffic/noise		✓				
Lighting	Distances given on signs			3	-		Maintenance	Aesthetics		✓	1	-		
	Sightlines							Soft landscaping	✓					
	Built form aids navigation							Quality of materials		✓				
	Intensity/Frequency		✓					Quality of private frontages		✓				
	Definition/colour		✓					Sense of place	✓					
OTHER NOTES: Greyed out sections were not analysed.							LINKAGES TO OTHER REVIEW FORMS							
							Next Link			Name: Kennington (Green) W - East side		Ref: Link 1-8		
							Previous Link			Name: Kennington (Green) N - North side		Ref: Link 1-5		
OTHER NOTES:														

1-8 Link Assessment Form				Page 1 of 2		1-8 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-8		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kennington (Green) W - East side				Date: 13/12/2012 Time:								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		3	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility	✓						Consistent/correct			✓				
	All sections acceptable width	✓						Maintained			✓				
	Separation from traffic	✓			Appropriate Colour					✓	-				
	Allowance for obstructions	✓			Interruptions					✓					
	Pedestrian congestion	✓			Tapping line					✓					
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				2	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Gradient	Severity			2	-		Personal Security	Perceived/sense of crime	✓			-2	-		
	Steps/ramps							Activity on the street		✓					
	Rest points							Lighting	✓						
	Undulations							Police presence	✓						
	Handrail provision							CCTV			✓				
Obstructions	Presence of obstructions		✓	2	+		Surface Quality	Smoothness/trip hazards			✓	3	+		
	Location/alignment	✓						Surface friction			✓				
	Overhead obstructions		✓					Slippery surfaces			✓				
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy							
	Tactile warnings	✓						Maintenance			✓				
	Sightline reduction	✓						Context suitability			✓				
Permeability	Frequency of crossing points		✓	1	+		User Conflict	Conflicting movements	✓			2	+		
	Parked cars/physical barriers		✓					User flows	✓						
	Traffic flow	✓						Encroachment on pedestrian space	✓						
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers		✓					Bus queues an obstruction	✓						
Legibility	Sightlines	✓		2	-		Quality of Environment	Adequate space provision	✓			2	-		
	Signage provision							Traffic/noise			✓				
	Signage clarity							Aesthetics			✓				
	Information boards							Soft landscaping	✓						
	Distances given on signs							Quality of materials	✓						
	Sightlines							Quality of private frontages	✓						
Lighting	Built form aids navigation			2	-		Maintenance	Sense of place	✓			2	+		
	Intensity/Frequency		✓					Cleanliness	✓						
	Definition/colour		✓					Drainage	✓						
	Maintenance	✓						Evidence of neglect			✓				
	Context Suitability	✓						Seasonal foliage	✓						
OTHER NOTES: Greyed out sections were not analysed.	After-dark	✓		2	+			Graffiti	✓			-2	-		
	Obstructions		✓					Landscaping	✓						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name:		Ref:					
						Previous Link		Name: Kennington (Green) W - West side		Ref: Link 1-7					
OTHER NOTES:															

1-9 Link Assessment Form				Page 1 of 2		1-9 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-9		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Montford Place North side				Date: 13/12/2012 Time: 4:40:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct			✓				
	All sections acceptable width		✓					Maintained			✓				
	Separation from traffic	✓			Appropriate Colour					✓	-				
	Allowance for obstructions		✓		Interruptions					✓					
	Pedestrian congestion	✓			Tapping line					✓					
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				1	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Gradient	Severity			1	-		Personal Security	Made to specification				1	-		
	Steps/ramps							Perceived/sense of crime		✓					
	Rest points							Activity on the street		✓					
	Undulations							Lighting	✓						
	Handrail provision							Police presence			✓				
Obstructions	Presence of obstructions		✓	1	+		Surface Quality	CCTV	✓			1	+		
	Location/alignment		✓					Visual appeal		✓					
	Overhead obstructions	✓						Smoothness/trip hazards		✓					
	Tapering/opaque obstructions	✓						Surface friction	✓						
	Tactile warnings		✓					Slippery surfaces		✓					
Permeability	Sightline reduction	✓		1	-		User Conflict	UKPMS CVI hierarchy				3	-		
	Frequency of crossing points		✓					Maintenance	✓						
	Parked cars/physical barriers		✓					Context suitability		✓					
	Traffic flow	✓						Conflicting movements	✓						
	Dropped kerbs		✓					User flows	✓						
Legibility	Pedestrian barriers	✓		1	+		Quality of Environment	Encroachment on pedestrian space	✓			-1	+		
	Sightlines	✓						Segregation from cyclists	✓						
	Signage provision							Bus queues an obstruction	✓						
	Signage clarity							Adequate space provision	✓						
	Information boards							Traffic/noise	✓						
Lighting	Distances given on signs			3	-		Maintenance	Aesthetics			✓	0	+		
	Sightlines							Soft landscaping			✓				
	Built form aids navigation							Quality of materials			✓				
	Intensity/Frequency	✓						Quality of private frontages			✓				
	Definition/colour	✓						Sense of place		✓					
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Montford Place South side		Ref: Link 1-10					
						Previous Link		Name: Kennington (Green) W - East side		Ref: Link 1-8					
						OTHER NOTES:									

1-10 Link Assessment Form				Page 1 of 2		1-10 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 1-10		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Montford Place South side				Date: 13/12/2012 Time: 4:55:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	-2	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct			✓				
	All sections acceptable width		✓		Maintained					✓	-				
	Separation from traffic	✓			Appropriate Colour					✓					
	Allowance for obstructions		✓		Interruptions					✓					
	Pedestrian congestion		✓		Tapping line					✓					
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				2	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓		Assists navigation						-				
	Gradient of drop		✓		Enhanced visibility / obstructions										
	Consistency		✓		Space identification										
	Frequency of dropped kerbs		✓		Made to specification										
Gradient	Severity				+		Personal Security	Perceived/sense of crime	✓			2	+		
	Steps/ramps							Activity on the street		✓					
	Rest points				Lighting			✓			-				
	Undulations				Police presence					✓					
	Handrail provision				CCTV					✓					
	Presence of cross falls				Visual appeal			✓							
Obstructions	Presence of obstructions		✓	1	+		Surface Quality	Smoothness/trip hazards	✓			1	+		
	Location/alignment		✓					Surface friction	✓						
	Overhead obstructions	✓			Slippery surfaces			✓			-				
	Tapering/opaque obstructions	✓			UKPMS CVI hierarchy										
	Tactile warnings		✓		Maintenance					✓					
	Sightline reduction	✓			Context suitability					✓					
Permeability	Frequency of crossing points		✓	2	+		User Conflict	Conflicting movements	✓			2	+		
	Parked cars/physical barriers		✓					User flows	✓						
	Traffic flow	✓			Encroachment on pedestrian space				✓		-				
	Dropped kerbs		✓		Segregation from cyclists			✓							
	Pedestrian barriers	✓			Bus queues an obstruction			✓							
	Sightlines	✓			Adequate space provision				✓						
Legibility	Signage provision				+		Quality of Environment	Traffic/noise	✓			0	+		
	Signage clarity							Aesthetics		✓					
	Information boards				Soft landscaping				✓		-				
	Distances given on signs				Quality of materials				✓						
	Sightlines				Quality of private frontages				✓						
	Built form aids navigation				Sense of place				✓						
Lighting	Intensity/Frequency	✓		3	+		Maintenance	Cleanliness	✓			1	+		
	Definition/colour	✓						Drainage	✓						
	Maintenance	✓			Evidence of neglect				✓		-				
	Context Suitability	✓			Seasonal foliage			✓							
	After-dark	✓			Graffiti			✓							
	Obstructions	✓			Landscaping			✓							
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name:		Ref:					
						Previous Link		Name: Montford Place North side		Ref: Link 1-9					
OTHER NOTES:															

2-1 Link Assessment Form				Page 1 of 2		2-1 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-1		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Stannary Street S-Southside				Date: 13/12/2012 Time: 2:30:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+ Acceptable width if not for obstructions							-3		+	
	Wheelchair accessibility	✓												-	
	All sections acceptable width	✓													
	Separation from traffic	✓													
	Allowance for obstructions		✓												
	Pedestrian congestion		✓												
Dropped Kerbs	Located on desire lines		✓	-3	+ Adequate capacity							-1		+	
	Adequate capacity		✓											-	
	Level dropped/flush		✓												
	Gradient of drop		✓												
	Consistency		✓												
Gradient	Severity			-1	+ No dropped kerbs							-2		+	
	Steps/ramps													-	
	Rest points														
	Undulations														
	Handrail provision														
	Presence of cross falls														
Obstructions	Presence of obstructions		✓	-1	+ Presence of obstructions							-3		+	
	Location/alignment		✓											-	
	Overhead obstructions		✓												
	Tapering/opaque obstructions		✓												
	Tactile warnings		✓												
Permeability	Sightline reduction		✓	-2	+ Sightline reduction							-2		+	
	Frequency of crossing points		✓											-	
	Parked cars/physical barriers		✓												
	Traffic flow		✓												
	Dropped kerbs		✓												
	Pedestrian barriers		✓												
Legibility	Sightlines		✓	-1	+ Sightlines							-3		+	
	Signage provision													-	
	Signage clarity														
	Information boards														
	Distances given on signs														
	Built form aids navigation														
Lighting	Intensity/Frequency		✓	-1	+ Intensity/Frequency							-3		+	
	Definition/colour		✓											-	
	Maintenance		✓												
	Context Suitability		✓												
	After-dark		✓												
Obstructions	Obstructions		✓	-1	- Obstructions							-3		+	
			✓											-	
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:									
						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Stannary Street S-North side		Ref: Link 2-2					
						Previous Link		Name:		Ref:					

2-2 Link Assessment Form				Page 1 of 2		2-2 Link Assessment Form				Page 2 of 2	
Location:		Zone 1 Northern Line Extension		Parameter	Checklist Factors	Checklist		Overall Score	Comments		
Link Name:		Stannary Street S-North side		Link Ref:	Link 2-2			+ve	+/-	-ve	-3 to +3
Auditor:		Grant Fletcher		Date:	13/12/2012 Time: 2:30:00 PM						
Parameter	Checklist Factors	Checklist		Overall Score	Comments						
		+ve	+/-	-3 to +3							
Effective Width	Width for pedestrian flow	✓		3	Given the context, the width is comfortable	+					
	Wheelchair accessibility	✓									
	All sections acceptable width	✓									
	Separation from traffic	✓									
	Allowance for obstructions	✓									
Dropped Kerbs	Located on desire lines	✓		3	All kerbs are dropped, pushchairs should have no problem	+					
	Adequate capacity	✓									
	Level dropped/flush	✓									
	Gradient of drop	✓									
	Consistency	✓									
Gradient	Severity					+					
	Steps/ramps										
	Rest points										
	Undulations										
	Handrail provision										
Obstructions	Presence of obstructions	✓		3		+					
	Location/alignment	✓									
	Overhead obstructions	✓									
	Tapering/opaque obstructions	✓									
	Tactile warnings	✓									
Permeability	Frequency of crossing points	✓		1		+					
	Parked cars/physical barriers		✓								
	Traffic flow		✓								
	Dropped kerbs	✓									
	Pedestrian barriers	✓									
Legibility	Signage provision					+					
	Signage clarity										
	Information boards										
	Distances given on signs										
	Sightlines										
Lighting	Intensity/Frequency		✓	-2	Lighting is very sparse	+					
	Definition/colour		✓								
	Maintenance		✓								
	Context Suitability		✓								
	After-dark		✓								
Obstructions			✓		-						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS					
						Next Link	Name:	Stannary Street N-North side	Ref:	Link 2-3	
						Previous Link					
						Name:	Stannary Street S-Southside	Ref:	Link 2-1		
OTHER NOTES:											

2-3 Link Assessment Form				Page 1 of 2		2-3 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-3		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Stannary Street N-North side				Date: 13/12/2012 Time: 2:45:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		3	+		Tactile Information	Evident			✓	-3	+	No Tactile surfaces provided	
	Wheelchair accessibility	✓						Consistent/correct			✓				
	All sections acceptable width	✓			-			Maintained			✓				
	Separation from traffic	✓						Appropriate Colour			✓				
	Allowance for obstructions	✓						Interruptions			✓				
	Pedestrian congestion	✓						Tapping line			✓				
Dropped Kerbs	Located on desire lines	✓		2	+		Colour Contrast	Tonal contrast				-1			
	Adequate capacity		✓					Location							
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop	✓						Enhanced visibility / obstructions							
	Consistency	✓						Space identification							
Gradient	Severity			1	-		Personal Security	Made to specification				2			
	Steps/ramps							Perceived/sense of crime		✓					
	Rest points							Activity on the street		✓					
	Undulations							Lighting			✓				
	Handrail provision							Police presence							
Obstructions	Presence of obstructions		✓	2	+	obstruction generally provide separation from the roadway and do not interfere with pedestrian activities.	Surface Quality	Visual appeal			✓	3			
	Location/alignment	✓						Smoothness/trip hazards		✓					
	Overhead obstructions	✓						Surface friction	✓						
	Tapering/opaque obstructions		✓					Slippery surfaces	✓						
	Tactile warnings		✓					UKPMS CVI hierarchy							
	Sightline reduction	✓						Maintenance	✓						
Permeability	Frequency of crossing points			1	+		User Conflict	Context suitability	✓			1			
	Parked cars/physical barriers		✓					Conflicting movements	✓						
	Traffic flow		✓					User flows	✓						
	Dropped kerbs	✓						Encroachment on pedestrian space	✓						
	Pedestrian barriers	✓						Segregation from cyclists	✓						
Legibility	Sightlines		✓	-2	-		Quality of Environment	Bus queues an obstruction	✓			2			
	Signage provision							Adequate space provision	✓						
	Signage clarity							Traffic/noise	✓						
	Information boards							Aesthetics	✓						
	Distances given on signs							Soft landscaping			✓				
Lighting	Sightlines			-2	+		Maintenance	Quality of private frontages		✓		1			
	Built form aids navigation							Sense of place		✓					
	Intensity/Frequency		✓					Cleanliness	✓						
	Definition/colour		✓					Drainage	✓						
	Maintenance		✓					Evidence of neglect	✓						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Stannary Street N-South side		Ref: Link 2-4					
						Previous Link		Name: Stannary Street S-North side		Ref: Link 2-2					
OTHER NOTES:															

2-4 Link Assessment Form				Page 1 of 2		2-4 Link Assessment Form				Page 2 of 2							
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-4		Parameter		Checklist Factors		Checklist		Overall Score		Comments			
Link Name: Stannary Street N-South side				Date: 13/12/2012 Time: 2:45:00 PM								-3 to +3					
Auditor: Grant Fletcher																	
Parameter	Checklist Factors	Checklist		Overall Score	Comments												
		+ve	+/-	-3 to +3													
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident	✓		0		+				
	Wheelchair accessibility	✓						Consistent/correct	✓								
	All sections acceptable width		✓		-			Maintained	✓								
	Separation from traffic	✓						Appropriate Colour	✓								
	Allowance for obstructions	✓			-			Interruptions	✓								
	Pedestrian congestion	✓						Tapping line	✓								
Dropped Kerbs	Located on desire lines	✓		2	+		Colour Contrast	Tonal contrast			1		+				
	Adequate capacity	✓						Location									
	Level dropped/flush		✓					Assists navigation									
	Gradient of drop	✓						Enhanced visibility / obstructions									
	Consistency	✓						Space identification									
Gradient	Severity			-			Personal Security	Made to specification			1		-				
	Steps/ramps							Perceived/sense of crime	✓								
	Rest points							Activity on the street	✓								
	Undulations							Lighting		✓							
	Handrail provision							Police presence	✓								
Obstructions	Presence of obstructions		✓	2	+		Surface Quality	CCTV		✓	1		+				
	Location/alignment	✓						Visual appeal	✓								
	Overhead obstructions	✓						Smoothness/trip hazards	✓								
	Tapering/opaque obstructions	✓						Surface friction		✓							
	Tactile warnings		✓					Slippery surfaces		✓							
Permeability	Sightline reduction		✓	-1	-		User Conflict	UKPMS CVI hierarchy			3		-				
	Frequency of crossing points		✓					Maintenance		✓							
	Parked cars/physical barriers		✓					Context suitability		✓							
	Traffic flow		✓					Conflicting movements	✓								
	Dropped kerbs		✓					User flows	✓								
Legibility	Pedestrian barriers	✓		-			Quality of Environment	Segregation from cyclists	✓		0		+				
	Sightlines	✓						Encroachment on pedestrian space	✓								
	Signage provision							Segregation from cyclists	✓								
	Signage clarity							Bus queues an obstruction	✓								
	Information boards							Adequate space provision	✓								
Lighting	Distances given on signs			-2	+		Maintenance	Traffic/noise	✓		2		-				
	Sightlines							Cleanliness	✓								
	Built form aids navigation							Drainage	✓								
	Intensity/Frequency		✓					Evidence of neglect	✓								
	Definition/colour		✓					Seasonal foliage	✓								
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS											
						Next Link		Name: Ravensdon Street - N South side		Ref: Link 2-5							
						Previous Link		Name: Stannary Street N-North side		Ref: Link 2-3							
						OTHER NOTES:											

2-5 Link Assessment Form				Page 1 of 2		2-5 Link Assessment Form				Page 2 of 2																									
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-5		Parameter		Checklist Factors		Checklist		Overall Score		Comments																					
Link Name: Ravensdon Street - N South side				Date: 13/12/2012 Time: 2:45:00 PM								-3 to +3																							
Auditor: Grant Fletcher																																			
Parameter	Checklist Factors	Checklist		Overall Score	Comments																														
		+ve	+/-	-3 to +3																															
Effective Width	Width for pedestrian flow		✓	2	+		Tactile Information	Evident			✓	-3	+																						
	Wheelchair accessibility	✓						Consistent/correct		✓	Maintained					✓																			
	All sections acceptable width	✓			-			Colour Contrast	Appropriate Colour		✓		Tonal contrast				+																		
	Separation from traffic	✓							Interruptions		✓		Location																						
	Allowance for obstructions	✓							Tapping line		✓		Assists navigation																						
	Pedestrian congestion	✓							+	Enhanced visibility / obstructions					Space identification																				
Dropped Kerbs	Located on desire lines	✓		0	-	Personal Security	Perceived/sense of crime			✓		1	+																						
	Adequate capacity	✓					Activity on the street			✓	Police presence				✓																				
	Level dropped/flush		✓		-		Lighting	✓		CCTV			✓																						
	Gradient of drop						Visual appeal		✓	+																									
Consistency		✓	1	Surface Quality	-	User Conflict	Smoothness/trip hazards	✓			2	+																							
Frequency of dropped kerbs		✓					UKPMS CVI hierarchy			Conflicting movements			✓																						
Gradient	Severity							+	-	Quality of Environment		Surface friction	✓		3	-																			
	Steps/ramps											Maintenance		✓			Traffic/noise	✓																	
	Rest points											Context suitability		✓		Aesthetics	✓																		
	Undulations											Encroachment on pedestrian space	✓			Soft landscaping		✓																	
Handrail provision			-	-	-	Maintenance	Slippery surfaces		✓	2	+																								
Presence of cross falls							Segregation from cyclists	✓				Cleanliness	✓																						
Obstructions	Presence of obstructions		✓	1	+	-	-	Bus queues an obstruction	✓		2	-																							
	Location/alignment	✓						Adequate space provision	✓				Drainage	✓																					
	Overhead obstructions	✓						+	Quality of Environment	-			User Conflict	Context suitability	✓		3	-																	
	Tapering/opaque obstructions	✓												Quality of materials		✓			Encroachment on pedestrian space	✓															
	Tactile warnings		✓											Quality of private frontages	✓				Segregation from cyclists	✓															
Sightline reduction	✓		Sense of place	✓		Bus queues an obstruction	✓																												
Permeability	Frequency of crossing points		✓	2	+	-	-	Adequate space provision			✓			2	-																				
	Parked cars/physical barriers		✓					+	Quality of Environment	-	User Conflict	Traffic/noise	✓				2	+																	
	Traffic flow	✓										Encroachment on pedestrian space	✓						Aesthetics	✓															
	Dropped kerbs		✓					-				Maintenance	-			-			Soft landscaping		✓	2	-												
	Pedestrian barriers	✓																	Evidence of neglect	✓				Quality of materials		✓									
Sightlines	✓		Seasonal foliage	✓		Quality of private frontages	✓																												
Legibility	Signage provision			+	-	-	-	Sense of place	✓		2			-																					
	Signage clarity							+	Quality of Environment	-					User Conflict		Cleanliness	✓		2	+														
	Information boards											-	Maintenance			-	-	Drainage	✓				2	-											
	Distances given on signs							-										Quality of Environment	-			User Conflict			Evidence of neglect	✓		2	-						
	Sightlines																								-	Quality of Environment	-			User Conflict	Seasonal foliage	✓		2	-
Built form aids navigation			-	Quality of Environment	-	User Conflict	Graffiti	✓				2		-																					
Lighting	Intensity/Frequency	✓						2	+	-	-				Landscaping					✓					2						-				
	Definition/colour	✓					-						Quality of Environment		-	User Conflict	-			-	-		-	-											
	Maintenance	✓																-	Quality of Environment			-						User Conflict	-			-	-		
	Context Suitability		✓				-																			Quality of Environment	-			User Conflict				-	-
	After-dark		✓	-	Quality of Environment	-						User Conflict		-																					
Obstructions	✓		-				Quality of Environment	-	User Conflict	-	-							-							-						-				

OTHER NOTES: Greyed out sections were not analysed.
Generally appropriate for a residential neighbourhood.

LINKAGES TO OTHER REVIEW FORMS			
Next Link	Name:	Ravensdon Street - N North side	Ref: Link 2-6
Previous Link	Name:	Stannary Street N-South side	Ref: Link 2-4

OTHER NOTES:

2-6 Link Assessment Form				Page 1 of 2		2-6 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-6		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Ravensdon Street - N North side				Date: 13/12/2012 Time: 2:55:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident		✓	-2		+	Change of surface at junction	
	Wheelchair accessibility		✓					Consistent/correct		✓					-
	All sections acceptable width	✓			Maintained				✓						
	Separation from traffic	✓			Appropriate Colour				✓						
	Allowance for obstructions	✓			Interruptions				✓						
	Pedestrian congestion	✓			Tapping line				✓						
Dropped Kerbs	Located on desire lines	✓		2	+		Colour Contrast	Tonal contrast			2		+		
	Adequate capacity		✓					Location							-
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop	✓						Enhanced visibility / obstructions							
	Consistency	✓						Space identification							
Frequency of dropped kerbs	✓		Made to specification												
Gradient	Severity			2	+		Personal Security	Perceived/sense of crime	✓		2		+		
	Steps/ramps							Activity on the street	✓						-
	Rest points							Lighting		✓					
	Undulations							Police presence		✓					
	Handrail provision							CCTV		✓					
Presence of cross falls			Visual appeal	✓											
Obstructions	Presence of obstructions	✓		3	+		Surface Quality	Smoothness/trip hazards	✓		2		+		
	Location/alignment	✓						Surface friction	✓						-
	Overhead obstructions	✓						Slippery surfaces	✓						
	Tapering/opaque obstructions	✓			UKPMS CVI hierarchy					+					
	Tactile warnings	✓			Maintenance				✓						
	Sightline reduction	✓			Context suitability			✓							
Permeability	Frequency of crossing points	✓		1	+		User Conflict	Conflicting movements	✓		3		+		
	Parked cars/physical barriers	✓						User flows	✓						-
	Traffic flow	✓						Encroachment on pedestrian space	✓						
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers	✓						Bus queues an obstruction	✓						
Sightlines	✓		Adequate space provision	✓											
Legibility	Signage provision			2	+		Quality of Environment	Traffic/noise	✓		2		+		
	Signage clarity							Aesthetics	✓						-
	Information boards							Soft landscaping		✓					
	Distances given on signs				Quality of materials			✓							
	Sightlines				Quality of private frontages			✓							
	Built form aids navigation				Sense of place				✓						
Lighting	Intensity/Frequency	✓		2	+		Maintenance	Cleanliness	✓		2		+		
	Definition/colour		✓					Drainage	✓						-
	Maintenance	✓						Evidence of neglect	✓						
	Context Suitability	✓						Seasonal foliage		✓					
	After-dark		✓					Graffiti	✓						
	Obstructions		✓					Landscaping		✓					
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS						2			
						Next Link		Name: Ravensdon Street - S at narrows		Ref: Link 2-7					
						Previous Link		Name: Stannary Street N-South side		Ref: Link 2-5					
OTHER NOTES:															

2-7 Link Assessment Form				Page 1 of 2		2-7 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-7		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Ravensdon Street - S at narrows				Date: 13/12/2012 Time: 3:05:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	-3	+	Below the Minimum requirement	Colour Contrast	Evident	Consistent/correct	Maintained	Appropriate Colour	Interruptions	Tapping line	-	
	Wheelchair accessibility		✓												
	All sections acceptable width		✓												
	Separation from traffic		✓												
	Allowance for obstructions		✓												
	Pedestrian congestion	✓													
Dropped Kerbs	Located on desire lines	✓		-2	+	Kerbs are dropped but are of poor quality	Personal Security	Perceived/sense of crime	Activity on the street	Lighting	Police presence	CCTV	Visual appeal	-	
	Adequate capacity	✓													
	Level dropped/flush		✓												
	Gradient of drop		✓												
	Consistency		✓												
Frequency of dropped kerbs		✓													
Gradient	Severity			-	+		Surface Quality	Smoothness/trip hazards	Surface friction	Slippery surfaces	UKPMS CVI hierarchy	Maintenance	Context suitability	-	
	Steps/ramps														
	Rest points														
	Undulations				-										
	Handrail provision														
	Presence of cross falls														
Obstructions	Presence of obstructions		✓	-2	+	Bollards and street lamps create a narrow footway	User Conflict	Conflicting movements	User flows	Encroachment on pedestrian space	Segregation from cyclists	Bus queues an obstruction	Adequate space provision	-	
	Location/alignment		✓												
	Overhead obstructions	✓													
	Tapering/opaque obstructions	✓			-										
	Tactile warnings		✓												
	Sightline reduction	✓													
Permeability	Frequency of crossing points		✓	2	+		Quality of Environment	Traffic/noise	Aesthetics	Soft landscaping	Quality of materials	Quality of private frontages	Sense of place	-	
	Parked cars/physical barriers		✓												
	Traffic flow	✓													
	Dropped kerbs		✓		-										
	Pedestrian barriers	✓													
	Sightlines	✓													
Legibility	Signage provision			-	+		Maintenance	Cleanliness	Drainage	Evidence of neglect	Seasonal foliage	Graffiti	Landscaping	-	
	Signage clarity														
	Information boards														
	Distances given on signs				-										
	Sightlines														
	Built form aids navigation														
Lighting	Intensity/Frequency		✓	-2	+		LINKAGES TO OTHER REVIEW FORMS	Next Link	Name: Radcot/Methley Street West	Ref: Link 2-8	Previous Link	Name: Ravensdon Street - N North side	Ref: Link 2-5	OTHER NOTES:	
	Definition/colour		✓												
	Maintenance	✓													
	Context Suitability		✓		-										
	After-dark		✓												
	Obstructions		✓												

OTHER NOTES: Greyed out sections were not analysed.
Road and footways get very narrow, no separation from traffic on north side. Wheelchair access would be difficult.

2-8 Link Assessment Form				Page 1 of 2		2-8 Link Assessment Form				Page 2 of 2							
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-8		Parameter		Checklist Factors		Checklist		Overall Score		Comments			
Link Name: Radcot/Methley Street West				Date: 13/12/2012 Time: 3:20:00 PM								-3 to +3					
Auditor: Grant Fletcher																	
Parameter	Checklist Factors	Checklist		Overall Score	Comments												
		+ve	+/-	-3 to +3													
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident			✓	-3	+				
	Wheelchair accessibility	✓						Consistent/correct			✓						
	All sections acceptable width		✓		-			Maintained			✓						
	Separation from traffic		✓					Appropriate Colour			✓						
	Allowance for obstructions	✓			-			Interruptions			✓						
	Pedestrian congestion	✓						Tapping line			✓						
Dropped Kerbs	Located on desire lines		✓	-1	+		Colour Contrast	Tonal contrast				2	+				
	Adequate capacity		✓					Location									
	Level dropped/flush		✓					Assists navigation									
	Gradient of drop		✓					Enhanced visibility / obstructions									
	Consistency		✓					Space identification									
Gradient	Severity			-	-		Personal Security	Made to specification				-1	-				
	Steps/ramps							Perceived/sense of crime	✓								
	Rest points							Activity on the street		✓							
	Undulations							Lighting		✓							
Handrail provision				-	-		Surface Quality	Police presence			✓	2	+				
	Presence of cross falls							CCTV			✓						
Obstructions	Presence of obstructions		✓	2	+		User Conflict	Visual appeal	✓			-1	-				
	Location/alignment	✓						Smoothness/trip hazards			✓						
	Overhead obstructions	✓						Surface friction			✓						
	Tapering/opaque obstructions	✓						Slippery surfaces			✓						
	Tactile warnings		✓					UKPMS CVI hierarchy									
Permeability	Sightline reduction	✓		1	-		Quality of Environment	Maintenance			✓	3	-				
	Frequency of crossing points		✓					Context suitability			✓						
	Parked cars/physical barriers		✓					Conflicting movements	✓								
	Traffic flow	✓						User flows	✓								
	Dropped kerbs		✓					Encroachment on pedestrian space									
Legibility	Pedestrian barriers	✓		-	-		Maintenance	Segregation from cyclists				2	+				
	Sightlines	✓						Bus queues an obstruction									
	Signage provision							Adequate space provision									
	Signage clarity							Traffic/noise									
	Information boards							Aesthetics									
Lighting	Distances given on signs			1	+		Quality of Environment	Quality of materials				3	-				
	Sightlines							Quality of private frontages									
	Built form aids navigation							Sense of place									
	Intensity/Frequency		✓					Cleanliness									
	Definition/colour		✓					Drainage									
Lighting	Maintenance	✓		-	-		LINKAGES TO OTHER REVIEW FORMS	Evidence of neglect				3	+				
	Context Suitability	✓						Seasonal foliage									
	After-dark		✓					Graffiti									
	Obstructions		✓					Landscaping									
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:											
						Next Link Name: Radcot/Methley Street West Ref: Link 2-9 Previous Link Name: Ravensdon Street - S at narrows Ref: Link 2-7											

2-9 Link Assessment Form				Page 1 of 2		2-9 Link Assessment Form				Page 2 of 2					
Location: Zone 1 Northern Line Extension				Link Ref: Link 2-9		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Radcot/Methley Street West				Date: 13/12/2012 Time: 3:35:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct			✓				
	All sections acceptable width		✓		-			Maintained			✓				
	Separation from traffic	✓						Appropriate Colour			✓				
	Allowance for obstructions	✓						Interruptions			✓				
	Pedestrian congestion	✓						Tapping line			✓				
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				2	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Gradient	Severity			-			Personal Security	Perceived/sense of crime	✓			2	+		
	Steps/ramps							Activity on the street		✓					
	Rest points							Lighting	✓						
	Undulations							Police presence							
	Handrail provision							CCTV							
Obstructions	Presence of obstructions	✓		3	+		Surface Quality	Smoothness/trip hazards			✓	-1	+		
	Location/alignment	✓						Surface friction		✓					
	Overhead obstructions	✓						Slippery surfaces		✓					
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy							
	Tactile warnings	✓						Maintenance		✓					
	Sightline reduction	✓						Context suitability		✓					
Permeability	Frequency of crossing points		✓	0	+		User Conflict	Conflicting movements	✓			3	+		
	Parked cars/physical barriers		✓					User flows	✓						
	Traffic flow	✓						Encroachment on pedestrian space	✓						
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers	✓						Bus queues an obstruction	✓						
Legibility	Sightlines	✓		-			Quality of Environment	Adequate space provision	✓			2	-		
	Signage provision							Traffic/noise	✓						
	Signage clarity							Aesthetics	✓						
	Information boards							Soft landscaping			✓				
	Distances given on signs							Quality of materials		✓					
	Sightlines							Quality of private frontages	✓						
Lighting	Built form aids navigation			2	+		Maintenance	Sense of place	✓			3	+		
	Intensity/Frequency		✓					Cleanliness	✓						
	Definition/colour	✓						Drainage	✓						
	Maintenance		✓					Evidence of neglect	✓						
	Context Suitability	✓						Seasonal foliage	✓						
Lighting	After-dark	✓		-				Graffiti	✓			-			
	Obstructions	✓						Landscaping	✓						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name:		Ref:					
						Previous Link		Name: Radcot/Methley Street West		Ref: Link 2-8					
						OTHER NOTES:									

3-1 Link Assessment Form				Page 1 of 2		3-1 Link Assessment Form				Page 2 of 2					
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-1		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: St. Agnes West side				Date: 13/12/2012 Time: 1:50:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident		✓	-2		+ - Only evident at Junction with Kennington Park Place		
	Wheelchair accessibility		✓					Consistent/correct		✓					
	All sections acceptable width		✓		Maintained				✓						
	Separation from traffic		✓		Appropriate Colour				✓						
	Allowance for obstructions		✓		Interruptions				✓						
	Pedestrian congestion		✓		Tapping line				✓						
Dropped Kerbs	Located on desire lines		✓	-2	+	Only at Kennington Park Place	Colour Contrast	Tonal contrast					+ - + -		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Frequency of dropped kerbs		✓	Made to specification												
Gradient	Severity				+		Personal Security	Perceived/sense of crime		✓	0		+ - +		
	Steps/ramps							Activity on the street	✓						
	Rest points							Lighting		✓					
	Undulations							Police presence		✓					
	Handrail provision							CCTV		✓					
Presence of cross falls			Visual appeal	✓											
Obstructions	Presence of obstructions		✓	1	+		Surface Quality	Smoothness/trip hazards		✓	-1		+ - +		
	Location/alignment		✓					Surface friction		✓					
	Overhead obstructions	✓						Slippery surfaces		✓					
	Tapering/opaque obstructions		✓					UKPMS CVI hierarchy							
	Tactile warnings		✓					Maintenance		✓					
Sightline reduction		✓	Context suitability		✓										
Permeability	Frequency of crossing points		✓	0	+	Damaged pedestrian barrier inhibits flow along sidewalk	User Conflict	Conflicting movements	✓		2		+ - +		
	Parked cars/physical barriers	✓						User flows	✓						
	Traffic flow	✓						Encroachment on pedestrian space		✓					
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers		✓					Bus queues an obstruction	✓						
Sightlines	✓		Adequate space provision		✓										
Legibility	Signage provision				+		Quality of Environment	Traffic/noise	✓		1		+ - +		
	Signage clarity							Aesthetics		✓					
	Information boards							Soft landscaping		✓					
	Distances given on signs							Quality of materials	✓						
	Sightlines							Quality of private frontages	✓						
Built form aids navigation			Sense of place		✓										
Lighting	Intensity/Frequency		✓	-1	+		Maintenance	Cleanliness		✓	-2		+ - +		
	Definition/colour		✓					Drainage		✓					
	Maintenance		✓					Evidence of neglect		✓					
	Context Suitability		✓					Seasonal foliage		✓					
	After-dark		✓					Graffiti		✓					
Obstructions		✓	Landscaping		✓										
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: St Agnes East side		Ref: Link 3-2					
						Previous Link		Name:		Ref:					
						OTHER NOTES:									

3-2 Link Assessment Form				Page 1 of 2		3-2 Link Assessment Form				Page 2 of 2					
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-2		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: St Agnes East side				Date: 13/12/2012 Time: 1:50:00 PM											
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		1	+		Tactile Information	Evident			✓	-2	+		
	Wheelchair accessibility	✓						Consistent/correct			✓				
	All sections acceptable width		✓					Maintained			✓		-		
	Separation from traffic		✓					Appropriate Colour			✓				
	Allowance for obstructions		✓					Interruptions			✓				
	Pedestrian congestion	✓						Tapping line			✓				
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				-1	+		
	Adequate capacity		✓						Location						
	Level dropped/flush		✓					Assists navigation					-		
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Frequency of dropped kerbs		✓		Made to specification											
Gradient	Severity			-			Personal Security	Perceived/sense of crime		✓		-1	+		
	Steps/ramps								Activity on the street		✓				
	Rest points								Lighting				✓		-
	Undulations								Police presence				✓		
	Handrail provision								CCTV				✓		
Presence of cross falls				Visual appeal			✓								
Obstructions	Presence of obstructions		✓	1	+		Surface Quality	Smoothness/trip hazards			✓	0	+		
	Location/alignment		✓						Surface friction						✓
	Overhead obstructions	✓						Slippery surfaces			✓		-		
	Tapering/opaque obstructions		✓					UKPMS CVI hierarchy							
	Tactile warnings		✓					Maintenance			✓				
	Sightline reduction	✓						Context suitability			✓				
Permeability	Frequency of crossing points		✓	-2	+		User Conflict	Conflicting movements	✓			2	+		
	Parked cars/physical barriers		✓						User flows	✓					
	Traffic flow	✓						Encroachment on pedestrian space	✓				-		
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers		✓					Bus queues an obstruction	✓						
Sightlines	✓			Adequate space provision			✓								
Legibility	Signage provision			-			Quality of Environment	Traffic/noise	✓			0	+		
	Signage clarity								Aesthetics						✓
	Information boards								Soft landscaping				✓		-
	Distances given on signs								Quality of materials				✓		
	Sightlines								Quality of private frontages				✓		
	Built form aids navigation								Sense of place				✓		
Lighting	Intensity/Frequency		✓	-2	+		Maintenance	Cleanliness		✓		0	+		
	Definition/colour		✓						Drainage						✓
	Maintenance		✓					Evidence of neglect			✓		-		
	Context Suitability		✓					Seasonal foliage			✓				
	After-dark		✓					Graffiti	✓						
Obstructions		✓		Landscaping			✓								
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Kennington Park Place South side		Ref: Link 3-3					
						Previous Link		Name: St. Agnes West side		Ref: Link 3-1					
						OTHER NOTES:									

3-3 Link Assessment Form				Page 1 of 2		3-3 Link Assessment Form				Page 2 of 2									
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-3		Parameter		Checklist Factors		Checklist		Overall Score		Comments					
Link Name: Kennington Park Place South side				Date: 13/12/2012 Time: 1:40:00 PM								-3 to +3							
Auditor: Grant Fletcher																			
Parameter	Checklist Factors	Checklist		Overall Score	Comments														
		+ve	+/-	-3 to +3															
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident			✓	-3	+						
	Wheelchair accessibility	✓						Consistent/correct			✓								
	All sections acceptable width	✓						Maintained			✓								
	Separation from traffic		✓		Appropriate Colour					✓	-								
	Allowance for obstructions		✓		Interruptions					✓									
	Pedestrian congestion	✓			Tapping line					✓									
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				1	+						
	Adequate capacity		✓					Location											
	Level dropped/flush		✓					Assists navigation											
	Gradient of drop		✓					Enhanced visibility / obstructions											
	Consistency		✓					Space identification											
Gradient	Severity			0	-		Personal Security	Made to specification				1	-						
	Steps/ramps							Perceived/sense of crime		✓									
	Rest points							Activity on the street	✓										
	Undulations							Lighting	✓										
	Handrail provision							Police presence		✓									
Obstructions	Presence of obstructions		✓	0	+		Surface Quality	CCTV			✓	1	+						
	Location/alignment		✓					Visual appeal		✓									
	Overhead obstructions	✓						Smoothness/trip hazards	✓										
	Tapering/opaque obstructions		✓					Surface friction		✓									
	Tactile warnings		✓					Slippery surfaces		✓									
	Sightline reduction		✓					UKPMS CVI hierarchy											
Permeability	Frequency of crossing points	✓		0	-		User Conflict	Maintenance	✓			3	-						
	Parked cars/physical barriers		✓					Context suitability		✓									
	Traffic flow	✓						Conflicting movements	✓										
	Dropped kerbs		✓					User flows		✓									
	Pedestrian barriers	✓						Encroachment on pedestrian space	✓										
Legibility	Sightlines		✓	0	+		Quality of Environment	Segregation from cyclists	✓			-1	+						
	Signage provision							Bus queues an obstruction	✓										
	Signage clarity							Adequate space provision	✓										
	Information boards							Traffic/noise		✓									
	Distances given on signs							Aesthetics		✓									
	Sightlines							Soft landscaping		✓									
Lighting	Built form aids navigation			0	-		Maintenance	Quality of materials			✓	1	-						
	Intensity/Frequency		✓					Quality of private frontages			✓								
	Definition/colour		✓					Sense of place	✓										
	Maintenance		✓					Cleanliness		✓									
	Context Suitability		✓					Drainage		✓									
OTHER NOTES: Greyed out sections were not analysed.	After-dark		✓	0	+		LINKAGES TO OTHER REVIEW FORMS	Evidence of neglect			✓	1	+						
	Obstructions		✓					Seasonal foliage	✓										
								Next Link	Name: Kennington Park Place North side	Ref: Link 3-4									
								Previous Link	Name: St Agnes East side	Ref: Link 3-2									
							OTHER NOTES:												

3-4 Link Assessment Form				Page 1 of 2		3-4 Link Assessment Form				Page 2 of 2						
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-4		Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Kennington Park Place North side				Date: 13/12/2012 Time: 1:40:00 PM								-3 to +3				
Auditor: Grant Fletcher																
Parameter	Checklist Factors	Checklist		Overall Score	Comments											
		+ve	+/-	-3 to +3												
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident		✓	0	-	There is tactile information but it is not consistently applied.			
	Wheelchair accessibility		✓					Consistent/correct		✓						
	All sections acceptable width		✓		Maintained				✓							
	Separation from traffic		✓		Appropriate Colour				✓							
	Allowance for obstructions		✓		Interruptions				✓							
	Pedestrian congestion	✓			Tapping line				✓							
Dropped Kerbs	Located on desire lines		✓	-1	+		Colour Contrast	Tonal contrast			-1	+				
	Adequate capacity		✓					Location						Enhanced visibility / obstructions		
	Level dropped/flush		✓		Assists navigation					Space identification						
	Gradient of drop		✓		Made to specification					Personal Security		Perceived/sense of crime		✓		
	Consistency		✓							Activity on the street		✓				
Gradient	Severity			-				Lighting		✓	-1					
	Steps/ramps							Police presence		✓			Visual appeal		✓	
	Rest points							CCTV		✓			Surface Quality	Smoothness/trip hazards		✓
	Undulations							Visual appeal		✓				Surface friction		✓
	Handrail provision													Slippery surfaces		✓
Presence of cross falls						UKPMS CVI hierarchy										
Obstructions	Presence of obstructions		✓	1	+		User Conflict	Maintenance		✓	-2	-				
	Location/alignment		✓					Context suitability		✓			Conflicting movements			✓
	Overhead obstructions	✓								User flows		✓				
	Tapering/opaque obstructions		✓							Encroachment on pedestrian space			✓			
	Tactile warnings		✓							Segregation from cyclists		✓				
Permeability	Sightline reduction		✓	0	-		Quality of Environment	Adequate space provision		✓	-2	+				
	Frequency of crossing points	✓						Traffic/noise		✓				Aesthetics		✓
	Parked cars/physical barriers		✓							Soft landscaping				✓		
	Traffic flow		✓							Quality of materials				✓		
	Dropped kerbs		✓							Quality of private frontages				✓		
Legibility	Pedestrian barriers		✓	-				Sense of place		✓	-1					
	Sightlines	✓											Cleanliness		✓	
	Signage provision												Drainage		✓	
	Signage clarity												Evidence of neglect		✓	
	Information boards												Seasonal foliage		✓	
Lighting	Distances given on signs			+				Graffiti	✓		-2					
	Sightlines												Landscaping		✓	
	Built form aids navigation												LINKAGES TO OTHER REVIEW FORMS			
	Intensity/Frequency		✓										Next Link	Name: Kennington Park Road East side	Ref: Link 3-5	
	Definition/colour		✓										Previous Link	Name: Kennington Park Place South side	Ref: Link 3-3	
OTHER NOTES: Greyed out sections were not analysed.	Maintenance		✓	-				OTHER NOTES:								
	Context Suitability		✓													
	After-dark		✓													
	Obstructions		✓													

3-5 Link Assessment Form				Page 1 of 2		3-5 Link Assessment Form				Page 2 of 2					
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-5		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kennington Park Road East side				Date: 13/12/2012 Time: 1:50:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident	✓		3		+		
	Wheelchair accessibility	✓						Consistent/correct	✓						
	All sections acceptable width	✓						Maintained	✓						
	Separation from traffic		✓		Appropriate Colour			✓							
	Allowance for obstructions	✓			Interruptions			✓							
	Pedestrian congestion	✓			Tapping line			✓							
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			2		+		
	Adequate capacity	✓						Location							
	Level dropped/flush	✓						Assists navigation							
	Gradient of drop	✓						Enhanced visibility / obstructions							
	Consistency	✓						Space identification							
Gradient	Severity			3	-		Personal Security	Made to specification			2		-		
	Steps/ramps							Perceived/sense of crime	✓						
	Rest points							Activity on the street	✓						
	Undulations							Lighting		✓					
	Handrail provision							Police presence	✓						
Obstructions	Presence of obstructions	✓		3	+		Surface Quality	CCTV		✓	2		+		
	Location/alignment	✓						Visual appeal		✓					
	Overhead obstructions	✓						Smoothness/trip hazards	✓						
	Tapering/opaque obstructions	✓						Surface friction	✓						
	Tactile warnings	✓						Slippery surfaces	✓						
Permeability	Sightline reduction	✓		1	-		User Conflict	UKPMS CVI hierarchy			3		-		
	Frequency of crossing points		✓					Maintenance		✓					
	Parked cars/physical barriers	✓						Context suitability		✓					
	Traffic flow		✓					Conflicting movements	✓						
	Dropped kerbs	✓						User flows	✓						
Legibility	Pedestrian barriers		✓	1	+		Quality of Environment	Encroachment on pedestrian space	✓		1		+		
	Sightlines		✓					Segregation from cyclists	✓						
	Signage provision							Bus queues an obstruction	✓						
	Signage clarity							Adequate space provision	✓						
	Information boards							Traffic/noise		✓					
Lighting	Distances given on signs			1	-		Maintenance	Aesthetics		✓	2		+		
	Sightlines							Soft landscaping		✓					
	Built form aids navigation							Quality of materials		✓					
	Intensity/Frequency		✓					Quality of private frontages		✓					
	Definition/colour		✓					Sense of place		✓					
OTHER NOTES: Greyed out sections were not analysed.	Maintenance		✓	1	-		LINKAGES TO OTHER REVIEW FORMS	Cleanliness	✓		2		+		
	Context Suitability	✓						Drainage	✓						
	After-dark	✓						Evidence of neglect		✓					
	Obstructions	✓						Seasonal foliage		✓					
								Graffiti	✓						
												Name: Kennington Park Road West side Ref: Link 3-6			
												Name: Kennington Park Place North side Ref: Link 3-4			
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:									

3-6 Link Assessment Form				Page 1 of 2		3-6 Link Assessment Form				Page 2 of 2				
Location: Zone 2 Northern Line Extension				Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Kennington Park Road West side				Link Ref: Link 3-6				+ve +/- -ve		-3 to +3				
Auditor: Grant Fletcher				Date: 13/12/2012 Time: 1:30:00 PM										
Parameter	Checklist Factors	Checklist		Overall Score	Comments									
		+ve	+/-	-3 to +3										
Effective Width	Width for pedestrian flow		✓	-1	+		Tactile Information	Evident		✓	0	+		
	Wheelchair accessibility		✓					Consistent/correct		✓				
	All sections acceptable width	✓			Maintained				✓	-				
	Separation from traffic	✓			Appropriate Colour				✓					
	Allowance for obstructions	✓			Interruptions				✓					
	Pedestrian congestion	✓			Tapping line				✓					
Dropped Kerbs	Located on desire lines	✓		0	+		Colour Contrast	Tonal contrast			0	+		
	Adequate capacity	✓						Location						
	Level dropped/flush	✓						Assists navigation						-
	Gradient of drop	✓						Enhanced visibility / obstructions						
	Consistency	✓						Space identification						
Frequency of dropped kerbs	✓		Made to specification											
Gradient	Severity			0	+		Personal Security	Perceived/sense of crime		✓	0	+		
	Steps/ramps							Activity on the street	✓					
	Rest points							Lighting		✓				-
	Undulations							Police presence		✓				
	Handrail provision							CCTV		✓				
Presence of cross falls			Visual appeal		✓									
Obstructions	Presence of obstructions		✓	-1	+		Surface Quality	Smoothness/trip hazards		✓	1	+		
	Location/alignment		✓					Surface friction		✓				
	Overhead obstructions	✓						Slippery surfaces		✓				-
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy						
	Tactile warnings		✓					Maintenance		✓				
Sightline reduction	✓		Context suitability	✓										
Permeability	Frequency of crossing points		✓	-1	+		User Conflict	Conflicting movements		✓	-1	+		
	Parked cars/physical barriers	✓						User flows		✓				
	Traffic flow		✓					Encroachment on pedestrian space		✓				-
	Dropped kerbs		✓					Segregation from cyclists	✓					
	Pedestrian barriers		✓					Bus queues an obstruction	✓					
Sightlines		✓	Adequate space provision		✓									
Legibility	Signage provision			-1	+		Quality of Environment	Traffic/noise		✓	-1	+		
	Signage clarity							Aesthetics		✓				
	Information boards							Soft landscaping		✓				-
	Distances given on signs							Quality of materials		✓				
	Sightlines							Quality of private frontages		✓				
Built form aids navigation			Sense of place		✓									
Lighting	Intensity/Frequency		✓	-1	+		Maintenance	Cleanliness		✓	0	+		
	Definition/colour		✓					Drainage		✓				
	Maintenance	✓						Evidence of neglect		✓				-
	Context Suitability		✓					Seasonal foliage		✓				
	After-dark		✓					Graffiti		✓				
Obstructions		✓	Landscaping		✓									
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS								
						Next Link		Name: De Laune Street West side		Ref: Link 3-7				
						Previous Link		Name: Kennington Park Road East side		Ref: Link 3-5				
						OTHER NOTES:								

3-7 Link Assessment Form				Page 1 of 2		3-7 Link Assessment Form				Page 2 of 2																
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-7		Parameter		Checklist Factors		Checklist		Overall Score		Comments												
Link Name: De Laune Street West side				Date: 13/12/2012 Time: 1:12:00 PM								-3 to +3														
Auditor: Grant Fletcher																										
Parameter	Checklist Factors	Checklist		Overall Score	Comments																					
		+ve	+/-	-3 to +3																						
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident	✓		1		+													
	Wheelchair accessibility		✓					Consistent/correct		✓					Maintained	✓										
	All sections acceptable width		✓		-			Appropriate Colour	✓				Interruptions			✓	-									
	Separation from traffic	✓						Tapping line					✓													
	Allowance for obstructions		✓		0			-		Colour Contrast			Tonal contrast				3			+						
	Pedestrian congestion	✓											Location									Assists navigation				
Located on desire lines	✓		+	Enhanced visibility / obstructions							Space identification			-												
Adequate capacity	✓			Made to specification																						
Level dropped/flush		✓		-		Personal Security	Perceived/sense of crime				✓	Activity on the street	✓			Lighting		✓		Police presence		✓	CCTV	✓		
Gradient of drop	✓																								Visual appeal	✓
Consistency		✓	2	+				Surface Quality	Smoothness/trip hazards					✓			1				+					
Frequency of dropped kerbs		✓							Surface friction	✓																Slippery surfaces
Severity						-					UKPMS CVI hierarchy			-												
Steps/ramps											Maintenance					Context suitability				✓						
Rest points						1	-			User Conflict	Conflicting movements	✓		3				+								
Undulations											Handrail provision										User flows	✓				
Handrail provision			+								Encroachment on pedestrian space	✓					-									
Presence of cross falls											Segregation from cyclists	✓							Bus queues an obstruction		✓					
Obstructions	Presence of obstructions		✓	2	+						Quality of Environment	Adequate space provision	✓				2				+					
Location/alignment	✓		-																				Traffic/noise	✓		-
Overhead obstructions	✓					-								Aesthetics		✓					-					
Tapering/opaque obstructions	✓		-												Soft landscaping					✓				-		
Tactile warnings		✓				-									Quality of materials			✓		-						
Sightline reduction	✓		-												Quality of private frontages	✓								-		
Permeability	Frequency of crossing points			✓	1	+		Maintenance	Sense of place		✓				2		+									
Parked cars/physical barriers			✓	-								Cleanliness	✓						-							
Traffic flow	✓		-																			Drainage		✓		
Dropped kerbs				-																		Evidence of neglect		✓	-	
Pedestrian barriers	✓		-																		Seasonal foliage		✓	-		
Sightlines	✓			-																	Graffiti		✓		-	
Legibility	Signage provision				2	+						Landscaping		✓	2											
Signage clarity				-																						
Information boards			-																							
Distances given on signs				-																						
Sightlines			-																							
Built form aids navigation				-																						
Lighting	Intensity/Frequency	✓			2	+																				
Definition/colour	✓		-																							
Maintenance	✓																							-		
Context Suitability			-																							
After-dark																								-		
Obstructions			-																							

OTHER NOTES: Greyed out sections were not analysed.

LINKAGES TO OTHER REVIEW FORMS			
Next Link	Name:	De Laune Street East side	Ref: Link 3-8
Previous Link	Name:	Kennington Park Road West side	Ref: Link 3-6

OTHER NOTES:

3-8 Link Assessment Form				Page 1 of 2		3-8 Link Assessment Form				Page 2 of 2					
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-8		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: De Laune Street East side				Date: 13/12/2012 Time: 1:05:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	-2	+ Tree causes pinch point and surface degradation										
	Wheelchair accessibility		✓												
	All sections acceptable width		✓												
	Separation from traffic		✓												
	Allowance for obstructions		✓												
	Pedestrian congestion	✓													
Dropped Kerbs	Located on desire lines	✓		2	+										
	Adequate capacity	✓													
	Level dropped/flush		✓												
	Gradient of drop	✓													
	Consistency	✓													
Gradient	Severity				+										
	Steps/ramps														
	Rest points														
	Undulations														
	Handrail provision														
Obstructions	Presence of obstructions		✓	-3	+										
	Location/alignment		✓												
	Overhead obstructions	✓													
	Tapering/opaque obstructions		✓												
	Tactile warnings		✓												
	Sightline reduction		✓												
Permeability	Frequency of crossing points	✓		1	+										
	Parked cars/physical barriers		✓												
	Traffic flow	✓													
	Dropped kerbs	✓													
	Pedestrian barriers		✓												
Legibility	Signage provision				+										
	Signage clarity														
	Information boards														
	Distances given on signs														
	Sightlines		✓												
Lighting	Intensity/Frequency	✓		-2	+										
	Definition/colour	✓													
	Maintenance		✓												
	Context Suitability		✓												
	After-dark		✓												
Obstructions			✓		-										
			✓												
Tactile Information						Evident		✓							
Tactile Information						Consistent/correct		✓							
Tactile Information						Maintained		✓							
Tactile Information						Appropriate Colour		✓							
Tactile Information						Interruptions		✓							
Tactile Information						Tapping line		✓							
Colour Contrast						Tonal contrast									
Colour Contrast						Location									
Colour Contrast						Assists navigation									
Colour Contrast						Enhanced visibility / obstructions									
Colour Contrast						Space identification									
Colour Contrast						Made to specification									
Personal Security						Perceived/sense of crime		✓							
Personal Security						Activity on the street		✓							
Personal Security						Lighting		✓							
Personal Security						Police presence		✓							
Personal Security						CCTV				✓					
Personal Security						Visual appeal				✓					
Surface Quality						Smoothness/trip hazards				✓					
Surface Quality						Surface friction				✓					
Surface Quality						Slippery surfaces		✓							
Surface Quality						UKPMS CVI hierarchy									
Surface Quality						Maintenance				✓					
Surface Quality						Context suitability				✓					
User Conflict						Conflicting movements		✓							
User Conflict						User flows		✓							
User Conflict						Encroachment on pedestrian space				✓					
User Conflict						Segregation from cyclists		✓							
User Conflict						Bus queues an obstruction		✓							
User Conflict						Adequate space provision				✓					
Quality of Environment						Traffic/noise		✓							
Quality of Environment						Aesthetics		✓							
Quality of Environment						Soft landscaping				✓					
Quality of Environment						Quality of materials				✓					
Quality of Environment						Quality of private frontages		✓							
Quality of Environment						Sense of place		✓							
Maintenance						Cleanliness		✓							
Maintenance						Drainage		✓							
Maintenance						Evidence of neglect		✓							
Maintenance						Seasonal foliage		✓							
Maintenance						Graffiti		✓							
Maintenance						Landscaping				✓					
LINKAGES TO OTHER REVIEW FORMS															
Next Link						Name: Harmsworth Street South side						Ref: Link 3-9			
Previous Link						Name: De Laune Street West side						Ref: Link 3-7			
OTHER NOTES: Greyed out sections were not analysed.															
OTHER NOTES:															

3-9 Link Assessment Form				Page 1 of 2		3-9 Link Assessment Form				Page 2 of 2					
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-9		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Harmsworth Street South side				Date: 13/12/2012 Time: 1:00:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	-3	+	Footway is very narrow with obstructions	Tactile Information	Evident		✓	-1		+		
	Wheelchair accessibility		✓					Consistent/correct		✓					-
	All sections acceptable width		✓		Maintained			✓		-					
	Separation from traffic		✓		Appropriate Colour			✓							
	Allowance for obstructions		✓		Interruptions				✓						
	Pedestrian congestion		✓		Tapping line				✓						
Dropped Kerbs	Located on desire lines	✓		0	+		Colour Contrast	Tonal contrast			-2		+		
	Adequate capacity	✓						Location							-
	Level dropped/flush		✓		Assists navigation					-					
	Gradient of drop	✓			Enhanced visibility / obstructions										
	Consistency		✓		Space identification										
	Frequency of dropped kerbs		✓		Made to specification										
Gradient	Severity				+		Personal Security	Perceived/sense of crime		✓	-2		+	No activity on street, dark, walls on both sides	
	Steps/ramps							Activity on the street		✓					-
	Rest points				Lighting				✓	-					
	Undulations				Police presence										
	Handrail provision				CCTV				✓						
	Presence of cross falls				Visual appeal				✓						
Obstructions	Presence of obstructions		✓	-1	+	Street lamps obstruct this narrow footway	Surface Quality	Smoothness/trip hazards	✓		1		+		
	Location/alignment		✓					Surface friction	✓						-
	Overhead obstructions	✓			Slippery surfaces			✓		-					
	Tapering/opaque obstructions	✓			UKPMS CVI hierarchy										
	Tactile warnings		✓		Maintenance			✓							
	Sightline reduction		✓		Context suitability				✓						
Permeability	Frequency of crossing points		✓	-1	+		User Conflict	Conflicting movements	✓		3		+		
	Parked cars/physical barriers		✓					User flows	✓						-
	Traffic flow	✓			Encroachment on pedestrian space			✓		-					
	Dropped kerbs		✓		Segregation from cyclists			✓							
	Pedestrian barriers		✓		Bus queues an obstruction			✓							
	Sightlines		✓		Adequate space provision			✓							
Legibility	Signage provision				+		Quality of Environment	Traffic/noise	✓		-3		+	No soft landscaping, not frontages	
	Signage clarity							Aesthetics		✓					-
	Information boards				Soft landscaping				✓	-					
	Distances given on signs				Quality of materials				✓						
	Sightlines				Quality of private frontages				✓						
	Built form aids navigation				Sense of place				✓						
Lighting	Intensity/Frequency	✓		2	+		Maintenance	Cleanliness	✓		-3		+	Unmaintained, neglected.	
	Definition/colour	✓						Drainage		✓					-
	Maintenance	✓			Evidence of neglect				✓	-					
	Context Suitability	✓			Seasonal foliage				✓						
	After-dark	✓			Graffiti				✓						
	Obstructions	✓			Landscaping				✓						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Harmsworth Street North side		Ref: Link 3-10					
						Previous Link		Name: De Laune Street East side		Ref: Link 3-8					
						OTHER NOTES:									

3-10 Link Assessment Form				Page 1 of 2		3-10 Link Assessment Form				Page 2 of 2						
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-10		Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Harmsworth Street North side				Date: 13/12/2012 Time: 12:50:00 PM								-3 to +3				
Auditor: Grant Fletcher																
Parameter	Checklist Factors	Checklist		Overall Score	Comments											
		+ve	+/-	-3 to +3												
Effective Width	Width for pedestrian flow	✓		2	+		Tactile Information	Evident	✓		2		+			
	Wheelchair accessibility	✓						Consistent/correct		✓						
	All sections acceptable width	✓			Maintained			✓		-						
	Separation from traffic		✓		Appropriate Colour			✓								
	Allowance for obstructions		✓		Interruptions			✓								
	Pedestrian congestion	✓			Tapping line				✓							
Dropped Kerbs	Located on desire lines	✓		2	+		Colour Contrast	Tonal contrast			2		+			
	Adequate capacity	✓						Location								
	Level dropped/flush		✓					Assists navigation							-	
	Gradient of drop	✓						Enhanced visibility / obstructions								
	Consistency	✓						Space identification								
Frequency of dropped kerbs		✓	Made to specification													
Gradient	Severity			2	+		Personal Security	Perceived/sense of crime	✓		2		+			
	Steps/ramps							Activity on the street		✓						
	Rest points							Lighting	✓						-	
	Undulations				Police presence				✓							
	Handrail provision				CCTV				✓							
	Presence of cross falls				Visual appeal			✓								
Obstructions	Presence of obstructions	✓		2	+		Surface Quality	Smoothness/trip hazards	✓		2		+			
	Location/alignment	✓						Surface friction	✓							
	Overhead obstructions	✓						Slippery surfaces	✓						-	
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy								
	Tactile warnings	✓						Maintenance		✓						
	Sightline reduction	✓						Context suitability	✓							
Permeability	Frequency of crossing points		✓	2	+		User Conflict	Conflicting movements	✓		2		+			
	Parked cars/physical barriers		✓					User flows	✓							
	Traffic flow	✓						Encroachment on pedestrian space	✓						-	
	Dropped kerbs	✓						Segregation from cyclists	✓							
	Pedestrian barriers	✓						Bus queues an obstruction	✓							
	Sightlines	✓						Adequate space provision	✓							
Legibility	Signage provision			2	+		Quality of Environment	Traffic/noise	✓		1		+			
	Signage clarity							Aesthetics	✓							
	Information boards							Soft landscaping		✓					-	
	Distances given on signs				Quality of materials				✓							
	Sightlines				Quality of private frontages				✓							
	Built form aids navigation				Sense of place				✓							
Lighting	Intensity/Frequency	✓		2	+		Maintenance	Cleanliness		✓	1		+			
	Definition/colour	✓						Drainage		✓						
	Maintenance	✓						Evidence of neglect	✓						-	
	Context Suitability	✓			Seasonal foliage				✓							
	After-dark	✓			Graffiti				✓							
	Obstructions	✓			Landscaping				✓							
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS										
						Next Link		Name: Sharsted Street both sides		Ref: Link 3-11						
						Previous Link		Name: Harmsworth Street South side		Ref: Link 3-9						
						OTHER NOTES:										

3-11 Link Assessment Form				Page 1 of 2		3-11 Link Assessment Form				Page 2 of 2						
Location: Zone 2 Northern Line Extension				Link Ref: Link 3-11		Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Sharsted Street both sides				Date: 13/12/2012 Time: 12:45:00 PM								-3 to +3				
Auditor: Grant Fletcher																
Parameter	Checklist Factors	Checklist		Overall Score	Comments											
		+ve	+/-	-3 to +3												
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident		✓	1		+			
	Wheelchair accessibility		✓					Consistent/correct		✓						
	All sections acceptable width		✓		Maintained				✓	-						
	Separation from traffic		✓		Appropriate Colour				✓							
	Allowance for obstructions		✓		Interruptions				✓							
	Pedestrian congestion	✓			Tapping line				✓							
Dropped Kerbs	Located on desire lines	✓		1	+		Colour Contrast	Tonal contrast			2		+			
	Adequate capacity	✓						Location							-	
	Level dropped/flush		✓		Assists navigation											
	Gradient of drop		✓		Enhanced visibility / obstructions											
	Consistency		✓		Space identification											
Frequency of dropped kerbs		✓	Made to specification													
Gradient	Severity			-			Personal Security	Perceived/sense of crime	✓		2		+			
	Steps/ramps							Activity on the street		✓					-	
	Rest points							Lighting	✓							
	Undulations							Police presence		✓						
	Handrail provision							CCTV		✓						
Presence of cross falls			Visual appeal		✓											
Obstructions	Presence of obstructions		✓	-1	+		Surface Quality	Smoothness/trip hazards		✓	2		+			
	Location/alignment		✓					Surface friction		✓					-	
	Overhead obstructions	✓						Slippery surfaces		✓						
	Tapering/opaque obstructions	✓			UKPMS CVI hierarchy											
	Tactile warnings		✓		Maintenance				✓							
	Sightline reduction		✓		Context suitability			✓								
Permeability	Frequency of crossing points		✓	1	+		User Conflict	Conflicting movements	✓		2		+			
	Parked cars/physical barriers		✓					User flows	✓						-	
	Traffic flow	✓			Encroachment on pedestrian space				✓							
	Dropped kerbs	✓			Segregation from cyclists			✓								
	Pedestrian barriers	✓			Bus queues an obstruction			✓								
Sightlines		✓	Adequate space provision	✓												
Legibility	Signage provision			-	+		Quality of Environment	Traffic/noise	✓		2		+			
	Signage clarity							Aesthetics	✓						-	
	Information boards							Soft landscaping		✓						
	Distances given on signs				Quality of materials				✓							
	Sightlines				Quality of private frontages			✓								
	Built form aids navigation				Sense of place				✓							
Lighting	Intensity/Frequency		✓	1	+		Maintenance	Cleanliness	✓		3		+			
	Definition/colour		✓					Drainage	✓						-	
	Maintenance		✓		Evidence of neglect			✓								
	Context Suitability	✓			Seasonal foliage			✓								
	After-dark		✓		Graffiti			✓								
Obstructions		✓	Landscaping	✓												
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS										
						Next Link			Name:			Ref:				
						Previous Link			Name: Harmsworth Street North side			Ref: Link 3-10				
						OTHER NOTES:										

4-1 Link Assessment Form				Page 1 of 2		4-1 Link Assessment Form				Page 2 of 2					
Location: Zone 4 Northern Line Extension				Link Ref: Link 4-1		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Wandsworth Road East side				Date: 13/12/2012 Time: 12:15:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	2	+		Tactile Information	Evident	✓		3		+		
	Wheelchair accessibility		✓					Consistent/correct	✓						
	All sections acceptable width	✓			Maintained			✓		-					
	Separation from traffic	✓			Appropriate Colour			✓							
	Allowance for obstructions	✓			Interruptions			✓							
	Pedestrian congestion	✓			Tapping line			✓							
Dropped Kerbs	Located on desire lines	✓		3	+		Colour Contrast	Tonal contrast			1		+		
	Adequate capacity	✓						Location							
	Level dropped/flush	✓						Assists navigation							
	Gradient of drop	✓						Enhanced visibility / obstructions							
	Consistency	✓						Space identification							
Gradient	Severity			1	-		Personal Security	Perceived/sense of crime		✓	3		+		
	Steps/ramps							Activity on the street	✓						
	Rest points							Lighting	✓						
	Undulations							Police presence		✓					
	Handrail provision							CCTV		✓					
Obstructions	Presence of obstructions	✓		2	+		Surface Quality	Smoothness/trip hazards	✓		3		+		
	Location/alignment	✓						Slippery surfaces	✓						
	Overhead obstructions	✓						UKPMS CVI hierarchy							
	Tapering/opaque obstructions	✓						Maintenance	✓						
	Tactile warnings		✓					Context suitability	✓						
Permeability	Frequency of crossing points	✓		1	-		User Conflict	Conflicting movements	✓		3		+		
	Parked cars/physical barriers	✓						User flows	✓						
	Traffic flow		✓					Encroachment on pedestrian space	✓						
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers	✓						Bus queues an obstruction		✓					
Legibility	Signage provision			1	+		Quality of Environment	Adequate space provision	✓		2		-		
	Signage clarity							Traffic/noise		✓					
	Information boards							Aesthetics	✓						
	Distances given on signs							Soft landscaping	✓						
	Sightlines	✓						Quality of materials	✓						
Lighting	Intensity/Frequency	✓		3	-		Maintenance	Quality of private frontages		✓	3		+		
	Definition/colour	✓						Cleanliness	✓						
	Maintenance	✓						Drainage	✓						
	Context Suitability	✓						Evidence of neglect	✓						
	After-dark	✓						Seasonal foliage	✓						
OTHER NOTES: Greyed out sections were not analysed.															
								Previous Link		Name:	Ref:				
OTHER NOTES:															

4-2 Link Assessment Form				Page 1 of 2		4-2 Link Assessment Form				Page 2 of 2												
Location: Zone 4 Northern Line Extension				Link Ref: Link 4-2		Parameter		Checklist Factors		Checklist		Overall Score		Comments								
Link Name: Wandsworth Road West side				Date: 13/12/2012 Time: 12:06:00 PM								-3 to +3										
Auditor: Grant Fletcher																						
Parameter	Checklist Factors	Checklist		Overall Score	Comments																	
		+ve	+/-	-3 to +3																		
Effective Width	Width for pedestrian flow		✓	1	+		Tactile Information	Evident		✓	3		+									
	Wheelchair accessibility	✓						Consistent/correct	✓						Maintained	✓						
	All sections acceptable width		✓					Appropriate Colour	✓						Interruptions	✓						
	Separation from traffic		✓		-			Colour Contrast	Tonal contrast								2		+			
	Allowance for obstructions		✓						Location													
	Pedestrian congestion	✓							Assists navigation													
Dropped Kerbs	Located on desire lines	✓		2	+		Personal Security		Enhanced visibility / obstructions			3		-								
	Adequate capacity		✓						Space identification							Made to specification						
	Level dropped/flush		✓						-	Surface Quality	Smoothness/trip hazards					✓					2	
	Gradient of drop	✓						Surface friction			✓						Slippery surfaces	✓				
	Consistency	✓						UKPMS CVI hierarchy									Maintenance	✓				
Frequency of dropped kerbs	✓		Context suitability	✓		-	User Conflict	Conflicting movements	✓			3										
Gradient	Severity			2	+				Quality of Environment		Encroachment on pedestrian space			✓		1		-				
	Steps/ramps									Traffic/noise				✓	Aesthetics					✓		
	Rest points					Soft landscaping					✓			Quality of materials	✓							
	Undulations					Quality of private frontages					✓			Sense of place					✓			
	Handrail provision					-	Maintenance			Cleanliness	✓				3					+		
Presence of cross falls			Drainage	✓				Evidence of neglect	✓													
Obstructions	Presence of obstructions		✓	2	+				Quality of Environment	Seasonal foliage	✓		1			-						
	Location/alignment	✓				Quality of materials				✓		Sense of place					✓					
	Overhead obstructions	✓				Quality of private frontages					✓	Cleanliness					✓					
	Tapering/opaque obstructions	✓				Sense of place				✓	Drainage	✓										
	Tactile warnings		✓			-	User Conflict			Conflicting movements	✓							3		+		
Sightline reduction	✓		Context suitability	✓				Evidence of neglect	✓													
Permeability	Frequency of crossing points	✓		2	+				Quality of Environment	Seasonal foliage	✓		1		-							
	Parked cars/physical barriers	✓				Quality of materials				✓		Sense of place				✓						
	Traffic flow		✓			Quality of private frontages					✓	Cleanliness				✓						
	Dropped kerbs	✓				Sense of place				✓	Drainage	✓										
	Pedestrian barriers	✓				-	User Conflict			Conflicting movements	✓							3		+		
Sightlines		✓	Context suitability	✓				Evidence of neglect	✓													
Legibility	Signage provision			2	+				Quality of Environment	Seasonal foliage	✓		1		-							
	Signage clarity					Quality of materials				✓		Sense of place				✓						
	Information boards					Quality of private frontages					✓	Cleanliness				✓						
	Distances given on signs					Sense of place				✓	Drainage	✓										
	Sightlines		✓			-	User Conflict			Conflicting movements	✓							3		+		
Built form aids navigation			Context suitability	✓				Evidence of neglect	✓													
Lighting	Intensity/Frequency	✓		3	+				Quality of Environment	Seasonal foliage	✓		1		-							
	Definition/colour	✓				Quality of materials				✓		Sense of place				✓						
	Maintenance	✓				Quality of private frontages					✓	Cleanliness				✓						
	Context Suitability	✓				Sense of place				✓	Drainage	✓										
	After-dark	✓				-	User Conflict			Conflicting movements	✓							3		+		
Obstructions	✓		Context suitability	✓				Evidence of neglect	✓													
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS																
						Next Link		Name: Pascal Street North side		Ref: Link 4-3												
						Previous Link		Name: Wandsworth Road East side		Ref: Link 4-1												
OTHER NOTES:																						

4-3 Link Assessment Form				Page 1 of 2		4-3 Link Assessment Form				Page 2 of 2					
Location: Zone 4 Northern Line Extension				Link Ref: Link 4-3		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Pascal Street North side				Date: 13/12/2012 Time: 12:00:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	1	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility	✓						Consistent/correct			✓				
	All sections acceptable width		✓		-			Colour Contrast	Maintained				✓		
	Separation from traffic		✓						Appropriate Colour				✓		
	Allowance for obstructions	✓							Interruptions				✓		
	Pedestrian congestion	✓							Tapping line				✓		
Dropped Kerbs	Located on desire lines		✓	-3	+		Personal Security		Tonal contrast				-2	+	
	Adequate capacity		✓						Location						
	Level dropped/flush		✓					Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓					Space identification							
Gradient	Severity			3	-		Surface Quality	Made to specification				-2	-		
	Steps/ramps							Perceived/sense of crime		✓					
	Rest points							Activity on the street			✓				
	Undulations							Lighting			✓				
	Handrail provision							Police presence		✓					
Obstructions	Presence of obstructions	✓		0	+		User Conflict	CCTV			✓	3	+		
	Location/alignment	✓						Visual appeal		✓					
	Overhead obstructions	✓						Smoothness/trip hazards			✓				
	Tapering/opaque obstructions	✓						Surface friction		✓					
	Tactile warnings	✓						Slippery surfaces	✓						
	Sightline reduction	✓						UKPMS CVI hierarchy							
Permeability	Frequency of crossing points		✓	-3	-		Quality of Environment	Maintenance			✓	-3	-		
	Parked cars/physical barriers		✓					Context suitability		✓					
	Traffic flow		✓					Conflicting movements	✓						
	Dropped kerbs		✓					User flows	✓						
	Pedestrian barriers	✓						Encroachment on pedestrian space	✓						
Legibility	Sightlines	✓		-3	+		Maintenance	Segregation from cyclists	✓			-3	+		
	Signage provision							Bus queues an obstruction	✓						
	Signage clarity							Adequate space provision	✓						
	Information boards							Traffic/noise		✓					
	Distances given on signs							Aesthetics		✓					
	Sightlines							Soft landscaping		✓					
Lighting	Built form aids navigation			-3	-		LINKAGES TO OTHER REVIEW FORMS	Quality of materials		✓		-3	-		
	Intensity/Frequency		✓					Quality of private frontages		✓					
	Definition/colour		✓					Sense of place		✓					
	Maintenance		✓					Cleanliness		✓					
	Context Suitability		✓					Drainage		✓					
	After-dark		✓					Evidence of neglect		✓					
OTHER NOTES: Greyed out sections were not analysed.				-3	-	Only one street lamp on this side of street.		Seasonal foliage		✓		-3	-	Litter strewn about, not greenery, graffiti.	
										Graffiti					✓
								Landscaping		✓					
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:									
						Next Link Name: Pascal Street South side Ref: Link 4-4 Previous Link Name: Wandsworth Road West side Ref: Link 4-2									

4-4 Link Assessment Form				Page 1 of 2		4-4 Link Assessment Form				Page 2 of 2				
Location: Zone 4 Northern Line Extension				Link Ref: Link 4-4		Parameter		Checklist Factors		Checklist		Overall Score	Comments	
Link Name: Pascal Street South side				Date: 13/12/2012 Time: 12:20:00 PM				+ve +/- -ve		-3 to +3				
Auditor: Grant Fletcher														
Parameter	Checklist Factors	Checklist		Overall Score	Comments									
		+ve	+/-	-3 to +3										
Effective Width	Width for pedestrian flow		✓	1	+		Tactile Information	Evident		✓	-2	+		
	Wheelchair accessibility		✓					Consistent/correct		✓				
	All sections acceptable width		✓		Maintained				✓	-				
	Separation from traffic		✓		Appropriate Colour				✓					
	Allowance for obstructions		✓		Interruptions				✓					
	Pedestrian congestion		✓		Tapping line				✓					
Dropped Kerbs	Located on desire lines	✓		1	+		Colour Contrast	Tonal contrast			0	+		
	Adequate capacity		✓					Location						
	Level dropped/flush		✓		Assists navigation					-				
	Gradient of drop	✓			Enhanced visibility / obstructions									
Consistency		✓	Space identification			-								
Frequency of dropped kerbs		✓	Made to specification											
Gradient	Severity			1	+		Personal Security	Perceived/sense of crime		✓	0	+		
	Steps/ramps							Activity on the street		✓				
	Rest points				Lighting				✓	-				
	Undulations				Police presence				✓					
	Handrail provision				CCTV				✓					
Presence of cross falls			Visual appeal		✓									
Obstructions	Presence of obstructions	✓		2	+		Surface Quality	Smoothness/trip hazards		✓	-1	+		
	Location/alignment	✓						Surface friction	✓					
	Overhead obstructions	✓			Slippery surfaces			✓		-				
	Tapering/opaque obstructions	✓			UKPMS CVI hierarchy									
	Tactile warnings		✓		Maintenance				✓					
Sightline reduction	✓		Context suitability		✓									
Permeability	Frequency of crossing points		✓	1	+		User Conflict	Conflicting movements	✓		3	+		
	Parked cars/physical barriers		✓					User flows	✓					
	Traffic flow	✓			Encroachment on pedestrian space			✓		-				
	Dropped kerbs		✓		Segregation from cyclists			✓						
	Pedestrian barriers	✓			Bus queues an obstruction			✓						
Sightlines	✓		Adequate space provision	✓										
Legibility	Signage provision			1	+		Quality of Environment	Traffic/noise		✓	-2	+		
	Signage clarity							Aesthetics		✓				
	Information boards				Soft landscaping				✓	-				
	Distances given on signs				Quality of materials				✓					
	Sightlines				Quality of private frontages				✓					
Built form aids navigation			Sense of place		✓									
Lighting	Intensity/Frequency	✓		1	+		Maintenance	Cleanliness		✓	-3	+		
	Definition/colour		✓					Drainage		✓				
	Maintenance		✓		Evidence of neglect				✓	-				
	Context Suitability	✓			Seasonal foliage				✓					
	After-dark		✓		Graffiti				✓					
Obstructions	✓		Landscaping		✓									
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS								
						Next Link		Name:		Ref:				
						Previous Link		Name: Pascal Street North side		Ref: Link 4-3				
						OTHER NOTES:								

5-1 Link Assessment Form				Page 1 of 2		5-1 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-1		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Battersea Park Road South side				Date: 13/12/2012 Time: 10:32:00 AM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident		✓	-1		+		
	Wheelchair accessibility		✓					Consistent/correct		✓					-
	All sections acceptable width		✓		Maintained				✓	-					
	Separation from traffic		✓		Appropriate Colour				✓						
	Allowance for obstructions		✓		Interruptions				✓						
	Pedestrian congestion	✓			Tapping line				✓						
Dropped Kerbs	Located on desire lines		✓	1	+		Colour Contrast	Tonal contrast			-3		+		
	Adequate capacity	✓						Location							-
	Level dropped/flush	✓			Assists navigation										
	Gradient of drop	✓			Enhanced visibility / obstructions										
	Consistency	✓			Space identification										
Frequency of dropped kerbs		✓	-	Made to specification											
Gradient	Severity			-			Personal Security	Perceived/sense of crime		✓	-3		+		
	Steps/ramps							Activity on the street		✓					-
	Rest points							Lighting		✓					
	Undulations							Police presence		✓					
	Handrail provision							CCTV		✓					
Presence of cross falls			Visual appeal		✓										
Obstructions	Presence of obstructions		✓	-1	+		Surface Quality	Smoothness/trip hazards		✓	-2		+		
	Location/alignment		✓					Surface friction		✓					-
	Overhead obstructions		✓		Slippery surfaces				✓						
	Tapering/opaque obstructions		✓		UKPMS CVI hierarchy										
	Tactile warnings	✓			Maintenance				✓						
Sightline reduction	✓		Context suitability		✓										
Permeability	Frequency of crossing points		✓	1	+		User Conflict	Conflicting movements		✓	-2		+		
	Parked cars/physical barriers		✓					User flows		✓					-
	Traffic flow		✓		Encroachment on pedestrian space				✓						
	Dropped kerbs	✓			Segregation from cyclists				✓						
	Pedestrian barriers	✓			Bus queues an obstruction			✓							
Sightlines	✓		Adequate space provision		✓										
Legibility	Signage provision			-			Quality of Environment	Traffic/noise		✓	-3		+		
	Signage clarity							Aesthetics		✓					-
	Information boards							Soft landscaping		✓					
	Distances given on signs							Quality of materials		✓					
	Sightlines							Quality of private frontages		✓					
Built form aids navigation			Sense of place		✓										
Lighting	Intensity/Frequency		✓	0	+		Maintenance	Cleanliness		✓	-3		+		
	Definition/colour		✓					Drainage		✓					-
	Maintenance		✓		Evidence of neglect				✓						
	Context Suitability	✓			Seasonal foliage				✓						
	After-dark		✓		Graffiti				✓						
Obstructions	✓		Landscaping		✓										
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Battersea Park Road North side		Ref: Link 5-2					
						Previous Link		Name:		Ref:					
						OTHER NOTES:									

5-2 Link Assessment Form				Page 1 of 2		5-2 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-2		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Battersea Park Road North side				Date: 13/12/2012 Time: 10:50:00 AM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		1	+		Tactile Information	Evident		✓	0	+			
	Wheelchair accessibility		✓					Consistent/correct	✓						
	All sections acceptable width		✓		Maintained				✓	-					
	Separation from traffic		✓		Appropriate Colour			✓							
	Allowance for obstructions	✓			Interruptions				✓	-					
	Pedestrian congestion	✓			Tapping line				✓						
Dropped Kerbs	Located on desire lines	✓		1	+		Colour Contrast	Tonal contrast			-2	+			
	Adequate capacity	✓						Location							
	Level dropped/flush		✓		Assists navigation					-					
	Gradient of drop		✓		Enhanced visibility / obstructions										
	Consistency		✓		Space identification										
Frequency of dropped kerbs	✓		Made to specification												
Gradient	Severity			1	+		Personal Security	Perceived/sense of crime		✓	-2	+			
	Steps/ramps							Activity on the street		✓					
	Rest points				Lighting				✓	-					
	Undulations				Police presence				✓						
	Handrail provision				CCTV				✓						
	Presence of cross falls				Visual appeal				✓						
Obstructions	Presence of obstructions		✓	1	+		Surface Quality	Smoothness/trip hazards		✓	-1	+			
	Location/alignment	✓						Surface friction		✓					
	Overhead obstructions	✓			Slippery surfaces				✓	-					
	Tapering/opaque obstructions		✓		UKPMS CVI hierarchy										
	Tactile warnings	✓			Maintenance				✓						
	Sightline reduction		✓		Context suitability			✓							
Permeability	Frequency of crossing points		✓	0	+		User Conflict	Conflicting movements		✓	-2	+			
	Parked cars/physical barriers	✓						User flows		✓					
	Traffic flow		✓		Encroachment on pedestrian space				✓	-					
	Dropped kerbs		✓		Segregation from cyclists				✓						
	Pedestrian barriers	✓			Bus queues an obstruction			✓							
	Sightlines	✓			Adequate space provision				✓						
Legibility	Signage provision			1	+		Quality of Environment	Traffic/noise		✓	-1	+			
	Signage clarity							Aesthetics		✓					
	Information boards				Soft landscaping				✓	-					
	Distances given on signs				Quality of materials				✓						
	Sightlines				Quality of private frontages				✓						
	Built form aids navigation				Sense of place				✓						
Lighting	Intensity/Frequency		✓	2	+		Maintenance	Cleanliness		✓	0	+			
	Definition/colour		✓					Drainage		✓					
	Maintenance	✓			Evidence of neglect				✓	-					
	Context Suitability	✓			Seasonal foliage				✓						
	After-dark	✓			Graffiti				✓						
	Obstructions	✓			Landscaping				✓						
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Cringle Street North side		Ref: Link 5-3					
						Previous Link		Name: Battersea Park Road South side		Ref: Link 5-1					
						OTHER NOTES:									

5-3 Link Assessment Form				Page 1 of 2		5-3 Link Assessment Form				Page 2 of 2						
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-3		Parameter		Checklist Factors		Checklist		Overall Score		Comments		
Link Name: Cringle Street North side				Date: 13/12/2012 Time: 10:35:00 AM								-3 to +3				
Auditor: Grant Fletcher																
Parameter	Checklist Factors	Checklist		Overall Score	Comments											
		+ve	+/-	-3 to +3												
Effective Width	Width for pedestrian flow		✓	-2	+			Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓						Consistent/correct			✓				
	All sections acceptable width		✓		-				Maintained			✓		-		
	Separation from traffic		✓						Appropriate Colour			✓				
	Allowance for obstructions		✓						Interruptions			✓				
	Pedestrian congestion	✓							Tapping line			✓				
Dropped Kerbs	Located on desire lines		✓	-2	+			Colour Contrast	Tonal contrast				-3	+		
	Adequate capacity	✓							Location							
	Level dropped/flush		✓		-				Assists navigation					-		
	Gradient of drop		✓						Enhanced visibility / obstructions							
	Consistency		✓						Space identification							
Frequency of dropped kerbs		✓			Made to specification											
Gradient	Severity			-3	+			Personal Security	Perceived/sense of crime			✓	-3	+		
	Steps/ramps								Activity on the street			✓				
	Rest points				-				Lighting			✓		-		
	Undulations								Police presence			✓				
	Handrail provision								CCTV			✓				
	Presence of cross falls								Visual appeal			✓				
Obstructions	Presence of obstructions		✓	-2	+			Surface Quality	Smoothness/trip hazards			✓	-2	+		
	Location/alignment		✓						Surface friction			✓				
	Overhead obstructions	✓			-				Slippery surfaces			✓		-		
	Tapering/opaque obstructions		✓						UKPMS CVI hierarchy							
	Tactile warnings		✓						Maintenance			✓				
	Sightline reduction		✓						Context suitability	✓						
Permeability	Frequency of crossing points		✓	-3	+			User Conflict	Conflicting movements			✓	-3	+		
	Parked cars/physical barriers		✓						User flows			✓				
	Traffic flow		✓		-				Encroachment on pedestrian space			✓		-		
	Dropped kerbs		✓						Segregation from cyclists			✓				
	Pedestrian barriers		✓						Bus queues an obstruction			✓				
	Sightlines		✓						Adequate space provision			✓				
Legibility	Signage provision			-3	+			Quality of Environment	Traffic/noise			✓	-3	+		
	Signage clarity								Aesthetics			✓				
	Information boards				-				Soft landscaping			✓		-		
	Distances given on signs								Quality of materials			✓				
	Sightlines								Quality of private frontages			✓				
	Built form aids navigation								Sense of place			✓				
Lighting	Intensity/Frequency		✓	-1	+			Maintenance	Cleanliness			✓	-3	+		
	Definition/colour		✓						Drainage			✓				
	Maintenance		✓		-				Evidence of neglect			✓		-		
	Context Suitability		✓						Seasonal foliage			✓				
	After-dark		✓						Graffiti			✓				
	Obstructions		✓						Landscaping			✓				
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS										
						Next Link		Name: Cringle Street Southside		Ref: Link 5-4						
						Previous Link		Name: Battersea Park Road North side		Ref: Link 5-2						
						OTHER NOTES:										

5-4 Link Assessment Form				Page 1 of 2		5-4 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-4		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Cringle Street Southside				Date: 13/12/2012 Time: 10:10:00 AM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	-1	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct			✓				
	All sections acceptable width		✓					Maintained			✓				
	Separation from traffic		✓		Appropriate Colour					✓	-				
	Allowance for obstructions		✓		Interruptions					✓					
	Pedestrian congestion	✓			Tapping line					✓					
Dropped Kerbs	Located on desire lines		✓	-2	+		Colour Contrast	Tonal contrast				-3	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓		Assists navigation						-				
	Gradient of drop		✓		Enhanced visibility / obstructions										
	Consistency		✓		Space identification										
Frequency of dropped kerbs		✓	Made to specification												
Gradient	Severity			-3	+		Personal Security	Perceived/sense of crime			✓	-3	+		
	Steps/ramps							Activity on the street			✓				
	Rest points							Lighting		✓					
	Undulations				Police presence					✓	-				
	Handrail provision				CCTV				✓						
	Presence of cross falls				Visual appeal					✓					
Obstructions	Presence of obstructions		✓	-2	+		Surface Quality	Smoothness/trip hazards			✓	-1	+		
	Location/alignment		✓					Surface friction			✓				
	Overhead obstructions	✓						Slippery surfaces			✓				
	Tapering/opaque obstructions		✓		UKPMS CVI hierarchy						-				
	Tactile warnings		✓		Maintenance					✓					
	Sightline reduction		✓		Context suitability			✓							
Permeability	Frequency of crossing points		✓	-3	+		User Conflict	Conflicting movements			✓	-2	+		
	Parked cars/physical barriers		✓					User flows			✓				
	Traffic flow		✓					Encroachment on pedestrian space			✓				
	Dropped kerbs		✓		Segregation from cyclists					✓	-				
	Pedestrian barriers		✓		Bus queues an obstruction			✓							
	Sightlines		✓		Adequate space provision					✓					
Legibility	Signage provision			-3	+		Quality of Environment	Traffic/noise			✓	-3	+		
	Signage clarity							Aesthetics			✓				
	Information boards							Soft landscaping			✓				
	Distances given on signs				Quality of materials					✓	-				
	Sightlines				Quality of private frontages					✓					
	Built form aids navigation				Sense of place					✓					
Lighting	Intensity/Frequency		✓	-2	+		Maintenance	Cleanliness			✓	-3	+		
	Definition/colour		✓					Drainage			✓				
	Maintenance		✓					Evidence of neglect			✓				
	Context Suitability		✓		Seasonal foliage					✓	-				
	After-dark		✓		Graffiti					✓					
	Obstructions		✓		Landscaping					✓					
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Kirtling Street West side		Ref: Link 5-5					
						Previous Link		Name: Kirtling Street West side		Ref: Link 5-3					
						OTHER NOTES:									

5-5 Link Assessment Form				Page 1 of 2		5-5 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-5		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kirtling Street West side				Date: 13/12/2012 Time: 11:20:00 AM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow		✓	0	+		Tactile Information	Evident			✓	-3	+		
	Wheelchair accessibility		✓					Consistent/correct			✓				
	All sections acceptable width		✓		-			Maintained			✓				
	Separation from traffic		✓					Appropriate Colour			✓				
	Allowance for obstructions		✓		Dropped Kerbs			Interruptions			✓				
	Pedestrian congestion	✓						Level dropped/flush			✓				
Dropped Kerbs	Located on desire lines		✓	-3	+		Colour Contrast	Tonal contrast				-3	+		
	Adequate capacity		✓					Location							
	Level dropped/flush		✓		-			Assists navigation							
	Gradient of drop		✓					Enhanced visibility / obstructions							
	Consistency		✓		-			Space identification							
	Frequency of dropped kerbs		✓					Made to specification							
Gradient	Severity			-	+		Personal Security	Perceived/sense of crime			✓	-3	+		
	Steps/ramps							Activity on the street			✓				
	Rest points							-	Lighting		✓				
	Undulations								Police presence				✓		
	Handrail provision							-	CCTV		✓				
	Presence of cross falls								Visual appeal				✓		
Obstructions	Presence of obstructions		✓	-1	+		Surface Quality	Smoothness/trip hazards			✓	-2	+		
	Location/alignment	✓						Surface friction			✓				
	Overhead obstructions	✓			-			Slippery surfaces			✓				
	Tapering/opaque obstructions	✓						UKPMS CVI hierarchy							
	Tactile warnings		✓		-			Maintenance			✓				
	Sightline reduction	✓						Context suitability	✓						
Permeability	Frequency of crossing points		✓	-2	+		User Conflict	Conflicting movements	✓			0	+		
	Parked cars/physical barriers		✓					User flows	✓						
	Traffic flow		✓		-			Encroachment on pedestrian space			✓				
	Dropped kerbs		✓					Segregation from cyclists	✓						
	Pedestrian barriers	✓			-			Bus queues an obstruction	✓						
	Sightlines		✓					Adequate space provision			✓				
Legibility	Signage provision			-	+		Quality of Environment	Traffic/noise			✓	-3	+		
	Signage clarity							Aesthetics			✓				
	Information boards				-			Soft landscaping			✓				
	Distances given on signs							Quality of materials			✓				
	Sightlines				-			Quality of private frontages			✓				
	Built form aids navigation							Sense of place			✓				
Lighting	Intensity/Frequency		✓	-1	+		Maintenance	Cleanliness		✓		-2	+		
	Definition/colour		✓					Drainage		✓					
	Maintenance		✓		-			Evidence of neglect		✓					
	Context Suitability	✓						Seasonal foliage			✓				
	After-dark		✓		-			Graffiti	✓						
	Obstructions		✓					Landscaping			✓				
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Kirtling Street East side		Ref: Link 5-6					
						Previous Link		Name: Cringle Street Southside		Ref: Link 5-4					
						OTHER NOTES:									

5-6 Link Assessment Form				Page 1 of 2		5-6 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-6		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Kirtling Street East side				Date: 13/12/2012 Time: 11:15:00 AM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist		Overall Score	Comments										
		+ve	+/-	-3 to +3											
Effective Width	Width for pedestrian flow	✓		0	+										
	Wheelchair accessibility		✓												
	All sections acceptable width	✓			-										
	Separation from traffic		✓												
	Allowance for obstructions		✓												
	Pedestrian congestion	✓													
Dropped Kerbs	Located on desire lines		✓	-3	+										
	Adequate capacity		✓												
	Level dropped/flush		✓		-										
	Gradient of drop		✓												
	Consistency		✓												
	Frequency of dropped kerbs		✓												
Gradient	Severity				+										
	Steps/ramps														
	Rest points				-										
	Undulations														
	Handrail provision														
	Presence of cross falls														
Obstructions	Presence of obstructions		✓	0	+										
	Location/alignment		✓												
	Overhead obstructions	✓			-										
	Tapering/opaque obstructions		✓												
	Tactile warnings		✓												
	Sightline reduction	✓													
Permeability	Frequency of crossing points		✓	-1	+										
	Parked cars/physical barriers	✓													
	Traffic flow		✓		-										
	Dropped kerbs		✓												
	Pedestrian barriers	✓													
	Sightlines		✓												
Legibility	Signage provision				+										
	Signage clarity														
	Information boards				-										
	Distances given on signs														
	Sightlines														
	Built form aids navigation														
Lighting	Intensity/Frequency		✓	0	+										
	Definition/colour		✓												
	Maintenance		✓		-										
	Context Suitability		✓												
	After-dark		✓												
	Obstructions		✓												
OTHER NOTES: Greyed out sections were not analysed.						OTHER NOTES:									
						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name:		Ref:					
						Previous Link		Name:		Kirtling Street West side		Ref:		Link 5-5	

5-7 Link Assessment Form				Page 1 of 2		5-7 Link Assessment Form				Page 2 of 2					
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-7		Parameter		Checklist Factors		Checklist		Overall Score		Comments	
Link Name: Battersea Park Road North-west				Date: 08/04/2013 Time: 7:20:00 PM								-3 to +3			
Auditor: Grant Fletcher															
Parameter	Checklist Factors	Checklist			Overall Score	Comments									
		+ve	+/-	-ve	-3 to +3										
Effective Width	Width for pedestrian flow	✓			0	+		Tactile Information	Evident		✓	0	+		
	Wheelchair accessibility		✓						Consistent/correct		✓				
	All sections acceptable width		✓			Maintained				✓	-				
	Separation from traffic			✓		Appropriate Colour				✓					
	Allowance for obstructions			✓		Interruptions				✓					
	Pedestrian congestion	✓				Tapping line				✓					
Dropped Kerbs	Located on desire lines	✓			0	+		Colour Contrast	Tonal contrast			-2	+		
	Adequate capacity	✓							Location						
	Level dropped/flush		✓						Assists navigation						
	Gradient of drop	✓							Enhanced visibility / obstructions						
	Consistency		✓						Space identification						
Gradient	Severity				-	-		Personal Security	Perceived/sense of crime		✓	-3	+		
	Steps/ramps								Activity on the street		✓				
	Rest points								Lighting		✓				
	Undulations								Police presence		✓				
	Handrail provision								CCTV		✓				
	Presence of cross falls								Visual appeal		✓				
Obstructions	Presence of obstructions			✓	-1	+		Surface Quality	Smoothness/trip hazards		✓	-3	+		
	Location/alignment		✓						Surface friction		✓				
	Overhead obstructions		✓						Slippery surfaces		✓				
	Tapering/opaque obstructions		✓						UKPMS CVI hierarchy						
	Tactile warnings			✓					Maintenance		✓				
	Sightline reduction			✓					Context suitability		✓				
Permeability	Frequency of crossing points			✓	0	+		User Conflict	Conflicting movements	✓		0	+		
	Parked cars/physical barriers	✓							User flows	✓					
	Traffic flow			✓					Encroachment on pedestrian space		✓				
	Dropped kerbs		✓						Segregation from cyclists		✓				
	Pedestrian barriers	✓							Bus queues an obstruction	✓					
	Sightlines		✓						Adequate space provision		✓				
Legibility	Signage provision				-	-		Quality of Environment	Traffic/noise		✓	0	+		
	Signage clarity								Aesthetics		✓				
	Information boards								Soft landscaping		✓				
	Distances given on signs								Quality of materials		✓				
	Sightlines								Quality of private frontages		✓				
	Built form aids navigation								Sense of place		✓				
Lighting	Intensity/Frequency	✓			2	+		Maintenance	Cleanliness		✓	-3	+		
	Definition/colour								Drainage		✓				
	Maintenance	✓							Evidence of neglect		✓				
	Context Suitability	✓							Seasonal foliage		✓				
	After-dark								Graffiti	✓					
	Obstructions	✓							Landscaping		✓				
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS									
						Next Link		Name: Battersea Park Road South-West		Ref: Link 5-8					
						Previous Link		Name: Cringle Street Southside		Ref: Link 5-4					
						OTHER NOTES:									

5-8 Link Assessment Form				Page 1 of 2		5-8 Link Assessment Form				Page 2 of 2							
Location: Zone 5 Northern Line Extension				Link Ref: Link 5-8		Parameter		Checklist Factors		Checklist		Overall Score		Comments			
Link Name: Battersea Park Road South-West				Date: 08/04/2013 Time: 7:15:00 PM													
Auditor: Grant Fletcher																	
Parameter	Checklist Factors	Checklist			Overall Score	Comments											
		+ve	+/-	-ve	-3 to +3												
Effective Width	Width for pedestrian flow	✓			1	+		Tactile Information	Evident	✓		2		+			
	Wheelchair accessibility		✓						Consistent/correct	✓							
	All sections acceptable width			✓		Maintained			✓								
	Separation from traffic			✓		Appropriate Colour			✓								
	Allowance for obstructions	✓				Interruptions				✓							
	Pedestrian congestion		✓			Tapping line			✓								
Dropped Kerbs	Located on desire lines		✓		1	+		Colour Contrast	Tonal contrast			1		+			
	Adequate capacity	✓							Location								
	Level dropped/flush	✓				Assists navigation											
	Gradient of drop		✓			Enhanced visibility / obstructions											
Gradient	Consistency		✓		1	-		Personal Security	Space identification			1		-			
	Frequency of dropped kerbs		✓						Made to specification								
	Severity					Perceived/sense of crime				✓							
	Steps/ramps					Activity on the street				✓							
	Rest points					Lighting			✓								
Obstructions	Undulations				2	+		Surface Quality	Police presence		✓	3		+			
	Handrail provision								CCTV		✓						
	Presence of cross falls								Visual appeal		✓						
Obstructions	Presence of obstructions	✓			2	+		User Conflict	Smoothness/trip hazards	✓		3		-			
	Location/alignment	✓							Surface friction	✓							
	Overhead obstructions	✓				Slippery surfaces			✓								
	Tapering/opaque obstructions		✓			UKPMS CVI hierarchy											
	Tactile warnings			✓		Maintenance			✓								
Permeability	Sightline reduction		✓		1	-		Quality of Environment	Context suitability	✓		-3		+			
	Frequency of crossing points			✓					Conflicting movements	✓							
	Parked cars/physical barriers	✓				User flows			✓								
	Traffic flow			✓		Encroachment on pedestrian space			✓								
	Dropped kerbs		✓			Segregation from cyclists			✓								
Legibility	Pedestrian barriers	✓			1	+		Maintenance	Bus queues an obstruction	✓		-2		-			
	Sightlines		✓						Adequate space provision	✓							
	Signage provision					Traffic/noise				✓							
	Signage clarity					Aesthetics				✓							
	Information boards					Soft landscaping				✓							
	Distances given on signs					Quality of materials				✓							
Lighting	Sightlines				2	-			Quality of private frontages		✓	-2		+			
	Built form aids navigation								Sense of place		✓						
	Intensity/Frequency	✓				Cleanliness				✓							
	Definition/colour					Drainage			✓								
	Maintenance	✓				Evidence of neglect				✓							
Lighting	Context Suitability	✓			2	+			Seasonal foliage		✓	-2		-			
	After-dark								Graffiti		✓						
	Obstructions	✓				Landscaping				✓							
OTHER NOTES: Greyed out sections were not analysed.						LINKAGES TO OTHER REVIEW FORMS											
						Next Link		Name:		Ref:							
						Previous Link		Name:		Battersea Park Road North-west		Ref:		Link 5-7			
						OTHER NOTES:											

APPENDIX

B

PERS AUDIT SHEETS - CROSSINGS

Location: Zone 1 Northern Line Extension		Cross Ref: Crossing 1-A	
Cross Name: Kennington Road (Green) Crossing		Date: 04/01/2013 Time: 9:55:00 AM	
Auditor: Grant Fletcher			
Parameter	Checklist Factors	Checklist	Overall Score
		+ve +/-	-3 to +3
Crossing Provision	Type suitable for context	✓	3
	Suitable for pedestrian type	✓	
	Suitable for pedestrian volume	✓	
	Suitable for type of road	✓	
	Traffic speeds	✓	
	Traffic volumes	✓	
Deviation from the desire line	Deviations	✓	0
	Serve likely desire lines	✓	
	At grade / by level change	✓	
	Pedestrian priority	✓	
	Distance minimisation	✓	
Performance	Crossing operational	✓	3
	Safety/protection of pedestrians	✓	
	Vehicle behaviour	✓	
	Traffic control measures	✓	
	Space ownership	✓	
	Obstructions to sight lines	✓	
Crossing Capacity	Minimum dimension standards met	✓	3
	Peak hour performance	✓	
	Pedestrian flows coped with	✓	
	Waiting areas/widths	✓	
	Refuge capacity	✓	
	Width for wheelchair users	✓	
Delay	Crossing stages	✓	3
	Effect of crossing type	✓	
	Traffic flow	✓	
	Pedestrian phase	✓	
	Waiting time	✓	
	Crossing time	✓	
Legibility	Surface Type continuity	✓	3
	Obvious where to cross	✓	
	Driver stop line in place	✓	
	Delineation for pedestrians	✓	
	Positioning of infrastructure	✓	
	Lighting	✓	

Parameter	Checklist Factors	Checklist	Overall Score	Comments
		+ve +/- -ve	-3 to +3	
Legibility for sensory impaired people	Button position	✓	3	
	Audible information	✓		
	Rotating cones	✓		
	Tactile Information provided/intact	✓		
	Appropriate Tactile information	✓		
Dropped Kerbs	Suitable locations	✓	2	
	Capacity	✓		
	Level dropped/flush	✓		
	Gradient of drop	✓		
	Provision	✓		
Gradient	Crossing at grade	✓	3	
	Cross fall evident	✓		
	Impedance to access	✓		
	Camber	✓		
	Severity of gradient on approach	✓		
Obstructions	Obstructions on approach	✓	3	
	Obstructions on crossing	✓		
	Location/alignment	✓		
	Overhead obstructions	✓		
	Opaque/tapering obstructions	✓		
	Tactile warnings	✓		
Surface Quality	Smoothness/trip hazards	✓	3	
	Context suitability	✓		
	Consistency	✓		
	Quality of reinstatements	✓		
	Drainage	✓		
	Slippery surfaces	✓		
Maintenance	Cleanliness	✓	3	
	State of repair	✓		
	Littering	✓		
	Evidence of neglect	✓		
	Impact of seasonal foliage	✓		
	Graffiti/stickers/chewing gum	✓		

OTHER NOTES:

LINKAGES TO OTHER REVIEW FORMS

Name:	Ref:	Name:	Ref:
Name:	Ref:	Name:	Ref:

OTHER NOTES:

2-A					Page 1 of 2					2-A					Page 2 of 2																			
Location: Zone 2 Northeren Line Extension					Cross Ref: Crossing 2-A					Parameter					Checklist Factors					Checklist					Overall Score					Comments				
Cross Name: Kennington Park Road - North Crossing					Date: 04/01/2013 Time: 10:00:00 AM					Auditor: Grant Fletcher																								
Parameter		Checklist Factors			Checklist		Overall Score		Comments																									
		+ve +/-			-3 to +3																													
Crossing Provision	Type suitable for context	✓			3	+		Legibility for sensory impaired people	Button position	✓			3	+																				
	Suitable for pedestrian type	✓							Audible information	✓																								
	Suitable for pedestrian volume	✓							Rotating cones	✓																								
	Suitable for type of road	✓				Tactile Information provided/intact			✓			-																						
	Traffic speeds	✓				Appropriate Tactile information			✓																									
	Traffic volumes	✓				Colour contrast			✓																									
Deviation from the desire line	Deviations	✓			3	+		Dropped Kerbs	Suitable locations	✓			3	+																				
	Serve likely desire lines	✓							Capacity	✓																								
	At grade / by level change	✓				Level dropped/flush			✓			-																						
	Pedestrian priority	✓				Gradient of drop			✓																									
	Distance minimisation	✓				Provision			✓																									
Barriers causing deviation	✓			Profile	✓			3	+																									
Performance	Crossing operational	✓			3	+					Gradient	Crossing at grade	✓																					
	Safety/protection of pedestrians	✓										Cross fall evident	✓																					
	Vehicle behaviour	✓										Impedance to access	✓																					
	Traffic control measures	✓										Camber	✓																					
	Space ownership	✓						Severity of gradient on approach	✓																									
Crossing Capacity	Obstructions to sight lines	✓			3	-		Obstructions	Severity of gradient on exit	✓			3	+																				
	Minimum dimension standards met	✓							Obstructions on approach	✓																								
	Peak hour performance	✓							Obstructions on crossing	✓																								
	Pedestrian flows coped with	✓							Location/alignment	✓																								
	Waiting areas/widths	✓							Overhead obstructions	✓																								
	Refuge capacity	✓							Opaque/tapering obstructions	✓																								
Delay	Width for wheelchair users	✓			3	+		Surface Quality	Tactile warnings	✓			2	+																				
	Crossing stages	✓							Sight line reduction	✓																								
	Effect of crossing type	✓							Permanent obstructions	✓																								
	Traffic flow	✓				Smoothness/trip hazards				✓																								
	Pedestrian phase	✓				Context suitability			✓																									
	Waiting time	✓				Consistency			✓																									
Legibility	Crossing time	✓			3	-		Maintenance	Quality of reinstatements	✓			3	+																				
	Surface Type continuity	✓							Drainage	✓																								
	Obvious where to cross	✓							Slippery surfaces	✓																								
	Driver stop line in place	✓				Cleanliness			✓																									
	Delineation for pedestrians	✓				State of repair			✓																									
	Positioning of infrastructure	✓				Littering			✓																									
Lighting	✓			Evidence of neglect	✓																													
OTHER NOTES:									LINKAGES TO OTHER REVIEW FORMS																									
									Name:			Ref:			Name:			Ref:			Name:			Ref:										
									Name:			Ref:			Name:			Ref:			Name:			Ref:										
									OTHER NOTES:																									

Location: Zone 2 Northeren Line Extension

Cross Name: Kennington Park Road - East Crossing Cross Ref: Crossing 2-B

Auditor: Grant Fletcher Date: 04/01/2013 Time: 10:05:00 AM

Parameter	Checklist Factors	Checklist		Overall Score	Comments
		+ve	+/-		
Crossing Provision	Type suitable for context	✓		3	+
	Suitable for pedestrian type	✓			
	Suitable for pedestrian volume	✓			
	Suitable for type of road	✓			
	Traffic speeds	✓			
	Traffic volumes	✓			
Deviation from the desire line	Deviations	✓		3	+
	Serve likely desire lines	✓			
	At grade / by level change	✓			
	Pedestrian priority	✓			
	Distance minimisation	✓			
Performance	Crossing operational	✓		3	+
	Safety/protection of pedestrians	✓			
	Vehicle behaviour	✓			
	Traffic control measures	✓			
	Space ownership	✓			
Crossing Capacity	Obstructions to sight lines	✓		3	-
	Minimum dimension standards met	✓			
	Peak hour performance	✓			
	Pedestrian flows coped with	✓			
	Waiting areas/widths	✓			
	Refuge capacity	✓			
Delay	Width for wheelchair users	✓		3	+
	Crossing stages	✓			
	Effect of crossing type	✓			
	Traffic flow	✓			
	Pedestrian phase	✓			
	Waiting time	✓			
Legibility	Crossing time	✓		3	-
	Surface Type continuity	✓			
	Obvious where to cross	✓			
	Driver stop line in place	✓			
	Delineation for pedestrians	✓			
	Positioning of infrastructure	✓			

Parameter	Checklist Factors	Checklist			Overall Score	Comments
		+ve	+/-	-ve		
Legibility for sensory impaired people	Button position	✓			3	+
	Audible information	✓				
	Rotating cones	✓				
	Tactile Information provided/intact	✓				
	Appropriate Tactile information	✓				
Dropped Kerbs	Colour contrast	✓			3	-
	Suitable locations	✓				
	Capacity	✓				
	Level dropped/flush	✓				
	Gradient of drop	✓				
Gradient	Provision	✓			3	+
	Profile	✓				
	Crossing at grade	✓				
	Cross fall evident	✓				
	Impedance to access	✓				
Obstructions	Camber	✓			3	-
	Severity of gradient on approach	✓				
	Severity of gradient on exit	✓				
	Obstructions on approach	✓				
	Obstructions on crossing	✓				
	Location/alignment	✓				
	Overhead obstructions	✓				
Surface Quality	Opaque/tapering obstructions	✓			3	+
	Tactile warnings	✓				
	Sight line reduction	✓				
	Permanent obstructions	✓				
	Smoothness/trip hazards	✓				
	Context suitability	✓				
Maintenance	Consistency	✓			3	-
	Quality of reinstatements	✓				
	Drainage	✓				
	Slippery surfaces	✓				
	Cleanliness	✓				
	State of repair	✓				
	Littering	✓				
Other	Evidence of neglect	✓			3	+
	Impact of seasonal foliage	✓				
	Graffiti/stickers/chewing gum	✓				
	Evidence of debris	✓				
		✓				

OTHER NOTES:

LINKAGES TO OTHER REVIEW FORMS
 Name: Ref: Name: Ref:
 Name: Ref: Name: Ref:
 OTHER NOTES:

2-C				Page 1 of 2				2-C				Page 2 of 2			
Location: Zone 2 Northeren Line Extension				Cross Ref: Crossing 2-C				Parameter				Checklist Factors			
Cross Name: Kennington Park Road - South Crossing				Date: 04/01/2013 Time: 10:05:00 AM				+ve +/- -ve				Overall Score -3 to +3			
Auditor: Grant Fletcher				Comments				Legibility for sensory impaired people				Comments			
Parameter	Checklist Factors	Checklist	Overall Score												
		+ve +/-	-3 to +3												
Crossing Provision	Type suitable for context	✓	3	+					2	+					
	Suitable for pedestrian type	✓									-				
	Suitable for pedestrian volume	✓						3		+					
	Suitable for type of road	✓										-			
	Traffic speeds	✓								3	+				
Traffic volumes	✓					-									
Deviation from the desire line	Deviations	✓	3	+					3		-				
	Serve likely desire lines	✓										3	+		
	At grade / by level change	✓						-							
	Pedestrian priority	✓								3	+				
Distance minimisation	✓					-									
Barriers causing deviation	✓						3	+							
Performance	Crossing operational	✓	3	+					3		-				
	Safety/protection of pedestrians	✓								+					
	Vehicle behaviour	✓						-							
	Traffic control measures	✓									3	+			
	Space ownership	✓						-							
Obstructions to sight lines	✓					3	+								
Crossing Capacity	Minimum dimension standards met	✓	-1	+					3	-					
	Peak hour performance	✓									-				
	Pedestrian flows coped with	✓						+							
	Waiting areas/widths	✓								-					
	Refuge capacity	✓						-1				+			
	Width for wheelchair users	✓								-					
Delay	Crossing stages	✓	3	+					-1		+				
	Effect of crossing type	✓										-			
	Traffic flow	✓								-					
	Pedestrian phase	✓						+							
	Waiting time	✓								0	-				
	Crossing time	✓						+							
Legibility	Surface Type continuity	✓	-1	+					0		-				
	Obvious where to cross	✓										+			
	Driver stop line in place	✓						-							
	Delineation for pedestrians	✓								+					
	Positioning of infrastructure	✓						-							
	Lighting	✓								0	-				
Maintenance	Cleanliness	✓	0	+					0			-			
	State of repair	✓									+				
	Littering	✓						-							
	Evidence of neglect	✓										+			
	Impact of seasonal foliage	✓						-1		-					
Graffiti/stickers/chewing gum	✓					+									
Evidence of debris	✓						-								
Obstructions	Obstructions on approach	✓	3	+					3	-					
	Obstructions on crossing	✓									+				
	Location/alignment	✓						-							
	Overhead obstructions	✓								-1	+				
Opaque/tapering obstructions	✓					-									
Tactile warnings	✓						+								
Sight line reduction	✓							-							
Permanent obstructions	✓					-1	+								
Surface Quality	Smoothness/trip hazards	✓	-1	+					-1	-					
	Context suitability	✓									+				
	Consistency	✓						-							
	Quality of reinstatements	✓								+					
	Drainage	✓						0			-				
Slippery surfaces	✓					+									
Maintenance	Cleanliness	✓	0	+					0	-					
	State of repair	✓									+				
	Littering	✓								-					
	Evidence of neglect	✓						+							
	Impact of seasonal foliage	✓								-1	-				
Graffiti/stickers/chewing gum	✓					+									
Evidence of debris	✓						-								
OTHER NOTES:								LINKAGES TO OTHER REVIEW FORMS							
Name:							Ref:								
Name:							Ref:								
Name:							Ref:								
Name:							Ref:								
OTHER NOTES:							OTHER NOTES:								

4-A				Page 1 of 2				4-A				Page 2 of 2				
Location: Zone 4 Northeren Line Extension				Cross Ref: Crossing 4-A				Parameter				Checklist Factors				
Cross Name: Wandsworth Road @ Pascal - West Crossing				Date: 04/01/2013 Time: 9:35:00 AM				+ve +/- -ve				Overall Score -3 to +3				
Auditor: Grant Fletcher				Comments				Legibility for sensory impaired people				Comments				
Parameter	Checklist Factors	Checklist	Overall Score													
		+ve +/-	-3 to +3													
Crossing Provision	Type suitable for context	✓	3	+					3	+						
	Suitable for pedestrian type	✓									-					
	Suitable for pedestrian volume	✓						2		+						
	Suitable for type of road	✓										-				
	Traffic speeds	✓								3	+					
Traffic volumes	✓					-										
Deviation from the desire line	Deviations		0	+					3		+					
	Serve likely desire lines	✓										-				
	At grade / by level change	✓						3			+					
	Pedestrian priority	✓								-						
	Distance minimisation			Off desire line due to alignment of junction							3	+				
Barriers causing deviation	✓					-										
Performance	Crossing operational	✓	3	+					3	+						
	Safety/protection of pedestrians	✓										-				
	Vehicle behaviour	✓						3		+						
	Traffic control measures	✓									-					
	Space ownership	✓								3		+				
Obstructions to sight lines	✓					-										
Crossing Capacity	Minimum dimension standards met	✓	3	+					3		+					
	Peak hour performance	✓										-				
	Pedestrian flows coped with	✓						3			+					
	Waiting areas/widths	✓								-						
	Refuge capacity	✓									3	+				
Width for wheelchair users	✓					-										
Delay	Crossing stages	✓	3	+					3	+						
	Effect of crossing type	✓										-				
	Traffic flow	✓						1		+						
	Pedestrian phase	✓									-					
	Waiting time	✓								2		+				
Crossing time	✓					-										
Legibility	Surface Type continuity	✓	3	+					2		+					
	Obvious where to cross	✓										-				
	Driver stop line in place	✓						2			+					
	Delineation for pedestrians	✓								-						
	Positioning of infrastructure	✓									2	+				
Lighting	✓					-										

OTHER NOTES:				LINKAGES TO OTHER REVIEW FORMS			
Name:		Ref:		Name:		Ref:	
Name:		Ref:		Name:		Ref:	
OTHER NOTES:							

4-B				Page 1 of 2				4-B				Page 2 of 2				
Location: Zone 4 Northeren Line Extension								Parameter								
Cross Name: Wandsworth Road @ Pascal - East Crossing				Cross Ref: Crossing 4-B				Checklist Factors				Checklist				
Auditor: Grant Fletcher				Date: 04/01/2013 Time: 9:38:00 AM				+ve +/- -ve				Overall Score				
Parameter	Checklist Factors	Checklist	Overall Score	Comments								Comments				
		+ve +/-	-3 to +3													
Crossing Provision	Type suitable for context	✓	2	+					Legibility for sensory impaired people	Button position	✓		3	+		
	Suitable for pedestrian type	✓								Audible information		✓				
	Suitable for pedestrian volume	✓								Rotating cones	✓					
	Suitable for type of road	✓		-						Tactile Information provided/intact	✓					
	Traffic speeds	✓								Appropriate Tactile information	✓					
	Traffic volumes	✓								Colour contrast	✓					
Deviation from the desire line	Deviations		1	+					Dropped Kerbs	Suitable locations	✓		3	+		
	Serve likely desire lines	✓								Capacity	✓					
	At grade / by level change	✓		-						Level dropped/flush	✓					
	Pedestrian priority	✓								Gradient of drop						
	Distance minimisation									Provision		✓				
Barriers causing deviation	✓					Profile	✓									
Performance	Crossing operational	✓	3	+					Gradient	Crossing at grade	✓		3	+		
	Safety/protection of pedestrians	✓								Cross fall evident	✓					
	Vehicle behaviour	✓		-						Impedance to access	✓					
	Traffic control measures	✓								Camber	✓					
	Space ownership	✓								Severity of gradient on approach	✓					
Obstructions to sight lines	✓					Severity of gradient on exit	✓									
Crossing Capacity	Minimum dimension standards met	✓	3	+					Obstructions	Obstructions on approach	✓		3	+		
	Peak hour performance	✓								Obstructions on crossing	✓					
	Pedestrian flows coped with	✓								Location/alignment	✓					
	Waiting areas/widths	✓		-						Overhead obstructions	✓					
	Refuge capacity	✓								Opaque/tapering obstructions	✓					
	Width for wheelchair users	✓								Tactile warnings	✓					
Delay	Crossing stages	✓	3	+					Surface Quality	Sight line reduction	✓		3	-		
	Effect of crossing type	✓								Permanent obstructions	✓					
	Traffic flow	✓								Smoothness/trip hazards	✓					
	Pedestrian phase	✓		-						Context suitability	✓					
	Waiting time	✓								Consistency	✓					
	Crossing time	✓								Quality of reinstatements	✓					
Legibility	Surface Type continuity	✓	3	+					Maintenance	Drainage	✓		2	+		
	Obvious where to cross	✓								Slippery surfaces	✓					
	Driver stop line in place	✓								Cleanliness		✓				
	Delineation for pedestrians	✓		-						State of repair	✓					
	Positioning of infrastructure	✓								Littering		✓				
	Lighting	✓								Evidence of neglect	✓					
										Impact of seasonal foliage	✓					
						Graffiti/stickers/chewing gum	✓									
						Evidence of debris	✓									

OTHER NOTES:								LINKAGES TO OTHER REVIEW FORMS							
Name:				Ref:				Name:				Ref:			
Name:				Ref:				Name:				Ref:			
OTHER NOTES:															

4-C				Page 1 of 2				4-C				Page 2 of 2				
Location: Zone 4 Northeren Line Extension				Cross Ref: Crossing 4-C				Parameter				Checklist Factors				
Cross Name: Wandsworth Road @ Pascal - South Crossing				Date: 04/01/2013 Time: 9:30:00 AM				+ve				+/-				
Auditor: Grant Fletcher				-ve				-3 to +3				Comments				
Parameter	Checklist Factors	Checklist	Overall Score	Comments				Legibility for sensory impaired people	Button position	Audible information	Rotating cones	Tactile Information provided/intact	Appropriate Tactile information	Colour contrast	3	+
		+ve	+/-	-3 to +3												
Crossing Provision	Type suitable for context	✓		3	+											
	Suitable for pedestrian type	✓														
	Suitable for pedestrian volume	✓														
	Suitable for type of road	✓														
	Traffic speeds	✓														
Deviation from the desire line	Traffic volumes	✓		3	-											
	Deviations	✓														
	Serve likely desire lines	✓														
	At grade / by level change	✓														
	Pedestrian priority	✓														
Performance	Distance minimisation	✓		3	+											
	Barriers causing deviation	✓														
	Crossing operational	✓														
	Safety/protection of pedestrians	✓														
	Vehicle behaviour	✓														
Crossing Capacity	Traffic control measures	✓		3	-											
	Space ownership	✓														
	Obstructions to sight lines	✓														
	Minimum dimension standards met	✓														
	Peak hour performance	✓														
Delay	Pedestrian flows coped with	✓		3	+											
	Waiting areas/widths	✓														
	Refuge capacity	✓														
	Width for wheelchair users	✓														
	Crossing stages	✓														
Legibility	Effect of crossing type	✓		3	-											
	Traffic flow	✓														
	Pedestrian phase	✓														
	Waiting time	✓														
	Crossing time	✓														
Legibility	Surface Type continuity	✓		3	+											
	Obvious where to cross	✓														
	Driver stop line in place	✓														
	Delineation for pedestrians	✓														
	Positioning of infrastructure	✓														
Legibility	Lighting	✓		3	-											
	Smoothness/trip hazards	✓														
	Context suitability	✓														
	Consistency	✓														
	Quality of reinstatements	✓														
Legibility	Drainage	✓		3	+											
	Slippery surfaces	✓														
	Cleanliness	✓														
	State of repair	✓														
	Littering	✓														
Legibility	Evidence of neglect	✓		3	-											
	Impact of seasonal foliage	✓														
	Graffiti/stickers/chewing gum	✓														
	Evidence of debris	✓														
	Other notes															

4-D				Page 1 of 2				4-D				Page 2 of 2						
Location: Zone 4 Northeren Line Extension								Parameter										
Cross Name: Wandsworth Road @ Pascal - North Crossing								Cross Ref: Crossing 4-D										
Auditor: Grant Fletcher								Date: 04/01/2013 Time: 9:33:00 AM										
Parameter	Checklist Factors	Checklist	Overall Score	Comments				Parameter	Checklist Factors	Checklist	Overall Score	Comments						
		+ve +/-	-3 to +3							+ve +/- -ve	-3 to +3							
Crossing Provision	Type suitable for context	✓	3	+					Legibility for sensory impaired people	Button position	✓	3						
	Suitable for pedestrian type	✓									Audible information							✓
	Suitable for pedestrian volume	✓									Rotating cones						✓	
	Suitable for type of road	✓		-						Tactile Information provided/intact	✓							
	Traffic speeds	✓								Appropriate Tactile information	✓							
	Traffic volumes	✓								Colour contrast	✓							
Deviation from the desire line	Deviations	✓	3	+					Dropped Kerbs	Suitable locations	✓	3						
	Serve likely desire lines	✓									Capacity						✓	
	At grade / by level change	✓		-						Level dropped/flush	✓							
	Pedestrian priority	✓								Gradient of drop							✓	
	Distance minimisation	✓								Provision	✓							
Barriers causing deviation	✓		Profile	✓														
Performance	Crossing operational	✓	3	+					Gradient	Crossing at grade		2						
	Safety/protection of pedestrians	✓									Cross fall evident							✓
	Vehicle behaviour	✓		-						Impedance to access	✓							
	Traffic control measures	✓								Camber	✓							
	Space ownership	✓								Severity of gradient on approach	✓							
Obstructions to sight lines	✓		Severity of gradient on exit	✓														
Crossing Capacity	Minimum dimension standards met	✓	3	+					Obstructions	Obstructions on approach	✓	3						
	Peak hour performance	✓									Obstructions on crossing						✓	
	Pedestrian flows coped with	✓								-	Location/alignment						✓	
	Waiting areas/widths	✓		Overhead obstructions							✓							
	Refuge capacity	✓		Opaque/tapering obstructions							✓							
	Width for wheelchair users	✓								Tactile warnings	✓							
Delay	Crossing stages	✓	3	+					Surface Quality	Smoothness/trip hazards		1						
	Effect of crossing type	✓									Context suitability							✓
	Traffic flow	✓								-	Consistency							✓
	Pedestrian phase	✓		Quality of reinstatements							✓							
	Waiting time	✓		Drainage							✓							
	Crossing time	✓								Slippery surfaces	✓							
Legibility	Surface Type continuity		1	+					Maintenance	Cleanliness		3						
	Obvious where to cross	✓									State of repair							✓
	Driver stop line in place	✓								-	Littering						✓	
	Delineation for pedestrians	✓		Evidence of neglect							✓							
	Positioning of infrastructure	✓		Impact of seasonal foliage							✓							
	Lighting	✓		Graffiti/stickers/chewing gum							✓							
										Evidence of debris	✓							

OTHER NOTES:								LINKAGES TO OTHER REVIEW FORMS							
Name:				Ref:				Name:				Ref:			
Name:				Ref:				Name:				Ref:			
OTHER NOTES:															

5-A				Page 1 of 2				5-A				Page 2 of 2			
Location: Zone 5 Northeren Line Extension				Cross Ref: Crossing 5-A				Parameter				Checklist Factors			
Cross Name: Battersea Park Road - East Crossing				Date: 04/01/2013 Time: 9:15:00 AM				Checklist				Overall Score			
Auditor: Grant Fletcher				Comments				+ve +/- -ve				-3 to +3			
Parameter	Checklist Factors	Checklist	Overall Score												
		+ve +/-	-3 to +3												
Crossing Provision	Type suitable for context	✓	1	+		Legibility for sensory impaired people	Button position	✓	1		+				
	Suitable for pedestrian type	✓					Audible information	✓							
	Suitable for pedestrian volume	✓					Rotating cones	✓							
	Suitable for type of road	✓					Tactile Information provided/intact	✓							
	Traffic speeds	✓					Appropriate Tactile information	✓							
Deviation from the desire line	Deviations	✓	1	+		Dropped Kerbs	Suitable locations	✓	2		-				
	Serve likely desire lines	✓					Capacity	✓							
	At grade / by level change	✓					Level dropped/flush	✓							
Performance	Pedestrian priority	✓	2	-		Gradient	Gradient of drop	✓	3		+				
	Distance minimisation	✓					Provision	✓							
	Barriers causing deviation	✓					Profile	✓							
	Crossing operational	✓					Crossing at grade	✓							
Crossing Capacity	Safety/protection of pedestrians	✓	-1	+	Island is small and could cause problems for wheelchairs	Obstructions	Cross fall evident	✓	0		-		Bus shelter obstructs views of on coming traffic		
	Vehicle behaviour	✓					Impedance to access	✓							
	Traffic control measures	✓					Camber	✓							
	Space ownership	✓					Severity of gradient on approach	✓							
	Obstructions to sight lines	✓					Severity of gradient on exit	✓							
Delay	Minimum dimension standards met	✓	0	-		Surface Quality	Obstructions on approach	✓	-1		+				
	Peak hour performance	✓					Obstructions on crossing	✓							
	Pedestrian flows coped with	✓					Location/alignment	✓							
	Waiting areas/widths	✓					Overhead obstructions	✓							
	Refuge capacity	✓					Opaque/tapering obstructions	✓							
	Width for wheelchair users	✓					Tactile warnings	✓							
Legibility	Crossing stages	✓	3	+		Maintenance	Sight line reduction	✓	-2		-		Poorly maintained, very dirty		
	Effect of crossing type	✓					Permanent obstructions	✓							
	Traffic flow	✓					Smoothness/trip hazards	✓							
	Pedestrian phase	✓					Context suitability	✓							
	Waiting time	✓					Consistency	✓							
	Crossing time	✓					Quality of reinstatements	✓							
	Surface Type continuity	✓					Drainage	✓							
Obvious where to cross	✓	Slippery surfaces	✓												
Driver stop line in place	✓	Cleanliness	✓				State of repair	✓	+						
Delineation for pedestrians	✓	Littering	✓												
Positioning of infrastructure	✓	Evidence of neglect	✓												
Lighting	✓	Impact of seasonal foliage	✓												
		Graffiti/stickers/chewing gum	✓												
		Evidence of debris	✓												

OTHER NOTES:

LINKAGES TO OTHER REVIEW FORMS
Name: Ref: Name: Ref:
Name: Ref: Name: Ref:
OTHER NOTES:

5-B				Page 1 of 2				5-B				Page 2 of 2															
Location: Zone 5 Northeren Line Extension								Parameter				Checklist Factors				Checklist				Overall Score				Comments			
Cross Name: Battersea Park Road @ Kirtling - East Crossing								Cross Ref: Crossing 5-B								+ve +/- -ve				-3 to +3							
Auditor: Grant Fletcher								Date: 04/01/2013 Time:																			
Parameter	Checklist Factors	Checklist		Overall Score	Comments				Parameter	Checklist Factors	Checklist		Overall Score	Comments													
		+ve	+/-	-3 to +3							+ve	+/-	-ve	-3 to +3													
Crossing Provision	Type suitable for context	✓		3	+					Legibility for sensory impaired people	Button position	✓			2	+											
	Suitable for pedestrian type	✓					Audible information				✓																
	Suitable for pedestrian volume	✓					Rotating cones	✓																			
	Suitable for type of road	✓			-						Tactile Information provided/intact	✓															
	Traffic speeds	✓					Appropriate Tactile information	✓																			
	Traffic volumes	✓					Colour contrast	✓																			
Deviation from the desire line	Deviations	✓		3	+					Dropped Kerbs	Suitable locations	✓			3	+											
	Serve likely desire lines	✓					Capacity	✓																			
	At grade / by level change	✓					Level dropped/flush				✓																
	Pedestrian priority	✓			-						Gradient of drop		✓				-										
	Distance minimisation	✓					Provision	✓																			
Barriers causing deviation	✓							Profile	✓																		
Performance	Crossing operational	✓		3	+					Gradient	Crossing at grade	✓			3	+											
	Safety/protection of pedestrians	✓					Cross fall evident	✓																			
	Vehicle behaviour	✓					Impedance to access	✓																			
	Traffic control measures	✓			-						Camber	✓				-											
	Space ownership	✓					Severity of gradient on approach	✓																			
Obstructions to sight lines	✓							Severity of gradient on exit	✓																		
Crossing Capacity	Minimum dimension standards met	✓		3	+					Obstructions	Obstructions on approach	✓			3	+											
	Peak hour performance	✓					Obstructions on crossing	✓																			
	Pedestrian flows coped with	✓					Location/alignment	✓																			
	Waiting areas/widths	✓			-						Overhead obstructions	✓				-											
	Refuge capacity	✓					Opaque/tapering obstructions	✓																			
	Width for wheelchair users	✓					Tactile warnings	✓																			
Delay	Crossing stages		✓	1	+					Surface Quality	Smoothness/trip hazards			✓	1	+											
	Effect of crossing type		✓				Context suitability		✓																		
	Traffic flow	✓					Consistency	✓																			
	Pedestrian phase		✓		-	At south end walking south, shutters over green man obstruct view so that you can not see it until standing directly underneath					Quality of reinstatements	✓				-											
	Waiting time		✓				Drainage		✓																		
	Crossing time	✓					Slippery surfaces	✓																			
Legibility	Surface Type continuity	✓		3	+					Maintenance	Cleanliness		✓		2	+											
	Obvious where to cross	✓					State of repair		✓																		
	Driver stop line in place	✓					Littering	✓																			
	Delineation for pedestrians	✓			-						Evidence of neglect		✓			-											
	Positioning of infrastructure	✓					Impact of seasonal foliage	✓																			
	Lighting	✓					Graffiti/stickers/chewing gum	✓																			
							Evidence of debris	✓																			

OTHER NOTES:								LINKAGES TO OTHER REVIEW FORMS							
Name:				Ref:				Name:				Ref:			
Name:				Ref:				Name:				Ref:			
OTHER NOTES:															

5-C				Page 1 of 2				5-C				Page 2 of 2				
Location: Zone 5 Northeren Line Extension								Parameter								
Cross Name: Battersea Park Road @ Kirtling - North Crossing				Cross Ref: Crossing 5-C				Checklist Factors				Checklist				
Auditor: Grant Fletcher				Date: 04/01/2013 Time: 8:50:00 AM				+ve +/- -ve				Overall Score				
Parameter	Checklist Factors	Checklist	Overall Score	Comments								Comments				
		+ve +/-	-3 to +3													
Crossing Provision	Type suitable for context	✓	3	+					Legibility for sensory impaired people	Button position	✓		3	+		
	Suitable for pedestrian type	✓								Audible information		✓				
	Suitable for pedestrian volume	✓								Rotating cones	✓					
	Suitable for type of road	✓		-						Tactile Information provided/intact	✓					
	Traffic speeds	✓								Appropriate Tactile information	✓					
	Traffic volumes	✓								Colour contrast	✓					
Deviation from the desire line	Deviations	✓	2	+					Dropped Kerbs	Suitable locations	✓		2	+		
	Serve likely desire lines	✓								Capacity	✓					
	At grade / by level change	✓								Level dropped/flush		✓				
	Pedestrian priority	✓		-						Gradient of drop		✓				
	Distance minimisation	✓								Provision	✓					
Barriers causing deviation	✓					Profile	✓									
Performance	Crossing operational	✓	2	+					Gradient	Crossing at grade	✓		3	+		
	Safety/protection of pedestrians	✓								Cross fall evident	✓					
	Vehicle behaviour	✓								Impedance to access	✓					
	Traffic control measures	✓		-						Camber	✓					
	Space ownership	✓								Severity of gradient on approach	✓					
Obstructions to sight lines	✓					Severity of gradient on exit	✓									
Crossing Capacity	Minimum dimension standards met	✓	2	+					Obstructions	Obstructions on approach	✓		3	+		
	Peak hour performance	✓								Obstructions on crossing	✓					
	Pedestrian flows coped with	✓								Location/alignment	✓					
	Waiting areas/widths	✓		-						Overhead obstructions	✓					
	Refuge capacity	✓								Opaque/tapering obstructions	✓					
	Width for wheelchair users	✓								Tactile warnings	✓					
Delay	Crossing stages	✓	3	+					Surface Quality	Sight line reduction	✓		3	+		
	Effect of crossing type	✓								Permanent obstructions	✓					
	Traffic flow	✓								Smoothness/trip hazards	✓					
	Pedestrian phase	✓		-						Context suitability	✓					
	Waiting time	✓								Consistency	✓					
	Crossing time	✓								Quality of reinstatements	✓					
Legibility	Surface Type continuity	✓	3	+					Maintenance	Drainage	✓		1	+		
	Obvious where to cross	✓								Slippery surfaces	✓					
	Driver stop line in place	✓								Cleanliness		✓				
	Delineation for pedestrians	✓		-						State of repair		✓				
	Positioning of infrastructure	✓								Littering		✓				
	Lighting	✓								Evidence of neglect		✓				
										Impact of seasonal foliage	✓					
						Graffiti/stickers/chewing gum	✓									
						Evidence of debris		✓								

OTHER NOTES:								LINKAGES TO OTHER REVIEW FORMS							
Name:				Ref:				Name:				Ref:			
Name:				Ref:				Name:				Ref:			
OTHER NOTES:															

5-D					Page 1 of 2					5-D					Page 2 of 2																			
Location: Zone 5 Northern Line Extension					Cross Ref: Crossing 5-D					Parameter					Checklist Factors					Checklist					Overall Score					Comments				
Cross Name: Battersea Park Road @ Thessaly Road					Date: 08/04/2013 Time: 7:25:00 PM																													
Auditor: Grant Fletcher																																		
Parameter	Checklist Factors	Checklist			Overall Score	Comments					Parameter	Checklist Factors	Checklist			Overall Score	Comments																	
		+ve	+/-	-ve	-3 to +3								+ve	+/-	-ve	-3 to +3																		
Crossing Provision	Type suitable for context	✓			1	+						Legibility for sensory impaired people	Button position	✓			2	+																
	Suitable for pedestrian type	✓											Audible information			✓																		
	Suitable for pedestrian volume	✓											Rotating cones	✓																				
	Suitable for type of road	✓				-							Tactile Information provided/intact	✓																				
	Traffic speeds			✓									Appropriate Tactile information	✓																				
	Traffic volumes			✓									Colour contrast	✓																				
Deviation from the desire line	Deviations			✓	-1	+						Dropped Kerbs	Suitable locations	✓			2	+																
	Serve likely desire lines			✓									Capacity	✓																				
	At grade / by level change	✓				-							Level dropped/flush	✓																				
	Pedestrian priority			✓									Gradient of drop		✓																			
	Distance minimisation		✓										Provision	✓																				
Barriers causing deviation	✓								Profile	✓																								
Performance	Crossing operational	✓			-1	+						Gradient	Crossing at grade	✓			3	+																
	Safety/protection of pedestrians		✓										Cross fall evident	✓																				
	Vehicle behaviour			✓		-							Impedance to access	✓																				
	Traffic control measures		✓										Camber	✓																				
	Space ownership			✓									Severity of gradient on approach	✓																				
Obstructions to sight lines	✓								Severity of gradient on exit	✓																								
Crossing Capacity	Minimum dimension standards met	✓			0	+						Obstructions	Obstructions on approach	✓			3	+																
	Peak hour performance	✓											Obstructions on crossing	✓																				
	Pedestrian flows coped with	✓					-						Location/alignment	✓																				
	Waiting areas/widths		✓								Overhead obstructions		✓																					
	Refuge capacity		✓								Opaque/tapering obstructions		✓																					
	Width for wheelchair users		✓								Tactile warnings		✓																					
Delay	Crossing stages	✓			-2	+						Surface Quality	Smoothness/trip hazards		✓		2	+																
	Effect of crossing type												Context suitability	✓																				
	Traffic flow			✓									Consistency	✓																				
	Pedestrian phase		✓			-							Quality of reinstatements																					
	Waiting time			✓									Drainage	✓																				
	Crossing time		✓										Slippery surfaces	✓																				
Legibility	Surface Type continuity			✓	-1	+						Maintenance	Cleanliness		✓		1	+																
	Obvious where to cross	✓											State of repair		✓																			
	Driver stop line in place		✓				-						Littering	✓																				
	Delineation for pedestrians		✓								Evidence of neglect		✓																					
	Positioning of infrastructure		✓								Impact of seasonal foliage		✓																					
	Lighting		✓								Graffiti/stickers/chewing gum		✓																					
						No crossing specific lighting															Evidence of debris													
OTHER NOTES:										LINKAGES TO OTHER REVIEW FORMS																								
										Name:					Ref:					Name:					Ref:									
										Name:					Ref:					Name:					Ref:									
OTHER NOTES:																																		

APPENDIX

C

PEDESTRIAN SURVEY DATA

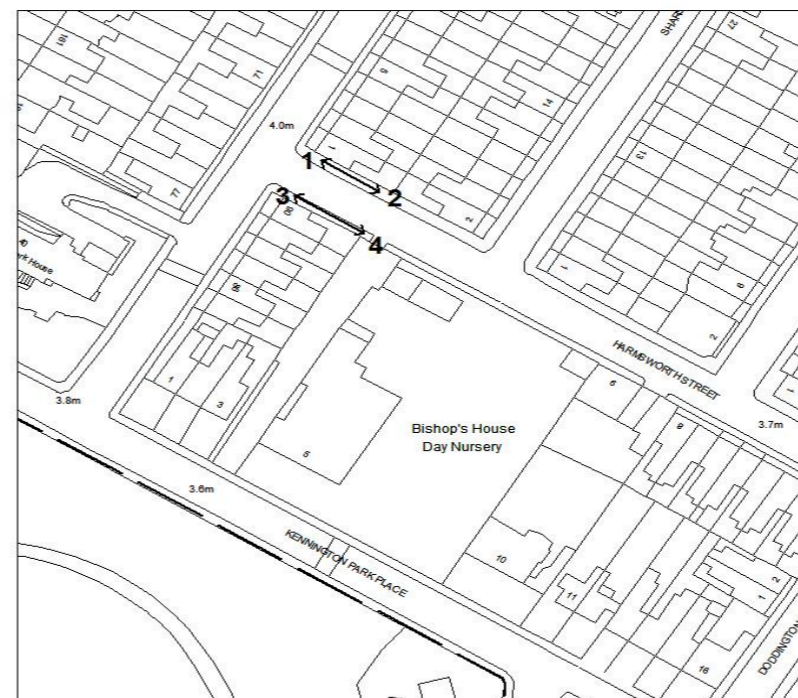
Location: Site 2 - Harmsworth Street

Weather: Dry

Date: Thursday 15/11/2012

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl ,up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Westbound			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	0	0	0	0
07:15 - 07:30	2	0	0	0
07:30 - 07:45	1	0	0	0
07:45 - 08:00	2	1	0	0
08:00 - 08:15	7	0	0	0
08:15 - 08:30	4	2	0	0
08:30 - 08:45	6	0	1	0
08:45 - 09:00	4	0	0	0
09:00 - 09:15	5	0	0	0
09:15 - 09:30	5	0	0	0
09:30 - 09:45	2	0	0	0
09:45 - 10:00	3	0	0	0
10:00 - 10:15	2	0	0	0
10:15 - 10:30	0	0	0	0
10:30 - 10:45	4	0	0	0
10:45 - 11:00	4	1	1	1
11:00 - 11:15	6	0	0	0
11:15 - 11:30	1	0	0	0
11:30 - 11:45	8	2	0	1
11:45 - 12:00	5	0	0	0
12:00 - 12:15	6	0	0	1
12:15 - 12:30	7	2	0	0
12:30 - 12:45	7	2	0	0
12:45 - 13:00	10	0	0	2
13:00 - 13:15	3	0	0	0
13:15 - 13:30	4	0	0	0
13:30 - 13:45	4	0	0	0
13:45 - 14:00	4	0	0	0
14:00 - 14:15	9	0	0	0
14:15 - 14:30	6	0	0	0
14:30 - 14:45	3	0	0	0
14:45 - 15:00	3	0	0	0
15:00 - 15:15	8	0	0	0
15:15 - 15:30	9	0	0	0
15:30 - 15:45	4	5	0	0
15:45 - 16:00	2	1	0	0
16:00 - 16:15	4	0	0	0
16:15 - 16:30	8	2	2	0
16:30 - 16:45	7	3	0	0
16:45 - 17:00	8	0	0	0
17:00 - 17:15	5	0	0	0
17:15 - 17:30	9	2	0	0
17:30 - 17:45	9	3	0	1
17:45 - 18:00	12	10	0	0
18:00 - 18:15	6	0	0	0
18:15 - 18:30	10	0	0	0
18:30 - 18:45	4	0	0	1
18:45 - 19:00	4	0	0	0
Total	246	36	4	7

2- Eastbound				
Adult	Child	Impaired Adult	Impaired Child	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
1	1	0	0	
1	0	0	1	
4	1	0	0	
1	0	0	0	
2	0	0	0	
3	0	0	0	
0	0	0	0	
2	0	0	0	
0	0	0	0	
1	0	0	0	
0	0	0	0	
4	1	0	1	
4	0	0	0	
5	0	0	0	
4	0	0	0	
4	0	0	0	
2	0	0	0	
5	0	0	0	
2	0	0	0	
1	0	0	0	
3	0	0	0	
2	0	0	0	
3	0	0	0	
3	0	0	0	
1	0	0	0	
9	0	0	0	
0	0	0	0	
1	0	0	0	
6	2	0	0	
3	0	0	0	
15	0	0	0	
3	1	0	0	
3	1	0	0	
3	0	0	0	
6	0	0	0	
5	1	0	0	
18	2	0	0	
15	1	0	2	
7	0	0	0	
2	0	0	0	
8	0	0	0	
10	0	0	0	
Total	173	11	0	4

3- Westbound				
Adult	Child	Impaired Adult	Impaired Child	
0	0	0	0	
3	0	0	0	
2	0	0	0	
2	6	0	0	
7	2	0	0	
3	0	0	0	
5	1	0	0	
1	0	0	0	
6	0	0	0	
4	0	0	0	
3	0	0	0	
3	0	0	0	
0	0	0	0	
0	0	0	0	
2	0	0	0	
2	0	0	0	
1	0	0	0	
3	0	0	0	
2	0	0	0	
2	0	0	0	
6	0	0	0	
4	0	0	0	
1	0	0	0	
1	0	0	0	
3	0	0	0	
2	0	0	0	
2	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
9	9	0	0	
2	1	0	0	
1	0	0	0	
0	0	0	0	
1	0	0	0	
4	0	0	1	
2	0	0	1	
1	0	0	0	
3	1	0	0	
2	0	0	0	
0	0	1	0	
5	0	0	0	
2	0	0	0	
Total	120	21	1	4

4- Eastbound				
Adult	Child	Impaired Adult	Impaired Child	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	3	0	0	
3	3	0	0	
0	1	0	0	
5	0	0	1	
4	0	0	0	
0	0	0	0	
1	0	0	0	
4	0	0	0	
0	1	0	0	
2	0	0	0	
1	0	0	0	
1	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
1	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
1	0	0	0	
0	0	0	0	
0	0	0	0	
1	0	0	0	
2	0	0	0	
3	0	0	0	
1	0	0	0	
2	2	0	0	
1	0	0	0	
2	1	0	0	
8	1	0	1	
6	0	0	0	
3	0	0	0	
5	0	0	0	
3	1	0	0	
4	0	0	0	
5	0	0	0	
Total	91	14	0	2

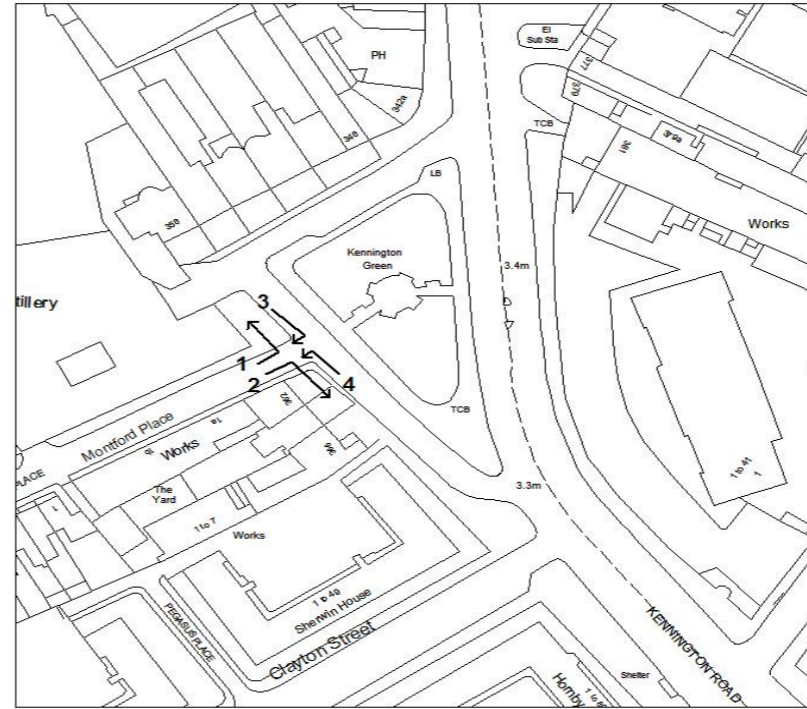
Location: Site 3 - Montford Place

Weather: Dry

Date: Wednesday 14/11/2012

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT - Able bodied
- 2) CHILD - Any child ,boy or girl ,up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Out Left			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	4	0	0	0
07:15 - 07:30	4	0	0	0
07:30 - 07:45	4	0	0	0
07:45 - 08:00	13	0	0	0
08:00 - 08:15	9	0	0	0
08:15 - 08:30	10	0	0	0
08:30 - 08:45	8	0	0	0
08:45 - 09:00	14	0	0	0
09:00 - 09:15	11	0	0	1
09:15 - 09:30	18	0	0	0
09:30 - 09:45	12	0	0	1
09:45 - 10:00	4	0	0	0
10:00 - 10:15	8	0	0	0
10:15 - 10:30	4	0	0	0
10:30 - 10:45	7	0	0	1
10:45 - 11:00	16	0	0	1
11:00 - 11:15	8	0	0	0
11:15 - 11:30	7	0	0	1
11:30 - 11:45	8	0	0	0
11:45 - 12:00	13	0	0	0
12:00 - 12:15	13	0	0	0
12:15 - 12:30	16	0	0	0
12:30 - 12:45	12	0	0	0
12:45 - 13:00	0	0	0	0
13:00 - 13:15	23	0	0	0
13:15 - 13:30	17	0	0	0
13:30 - 13:45	15	0	0	0
13:45 - 14:00	21	0	0	4
14:00 - 14:15	12	0	0	1
14:15 - 14:30	7	0	0	0
14:30 - 14:45	6	0	0	0
14:45 - 15:00	6	0	0	1
15:00 - 15:15	12	0	0	1
15:15 - 15:30	6	0	0	0
15:30 - 15:45	2	1	0	0
15:45 - 16:00	2	0	0	1
16:00 - 16:15	13	3	0	0
16:15 - 16:30	6	0	0	1
16:30 - 16:45	6	0	0	0
16:45 - 17:00	10	1	0	0
17:00 - 17:15	11	1	0	1
17:15 - 17:30	6	0	0	0
17:30 - 17:45	7	0	0	0
17:45 - 18:00	4	1	0	0
18:00 - 18:15	5	0	0	0
18:15 - 18:30	3	0	0	0
18:30 - 18:45	7	0	0	0
18:45 - 19:00	11	0	0	0
Total	441	7	0	15

2- Out Right				
Adult	Child	Impaired Adult	Impaired Child	
4	1	0	0	
5	0	0	0	
4	0	0	0	
7	0	0	0	
3	0	0	0	
4	2	0	0	
2	0	0	0	
15	10	0	1	
7	0	0	1	
2	0	0	0	
7	0	0	0	
8	0	0	0	
3	0	0	0	
13	1	0	1	
9	0	0	1	
10	0	0	2	
12	0	0	0	
10	0	0	0	
13	0	1	1	
11	0	0	0	
7	0	0	1	
18	1	0	2	
15	0	0	0	
0	0	0	0	
21	0	0	1	
27	0	0	1	
21	0	0	1	
8	0	0	0	
4	0	0	0	
16	0	0	1	
12	0	1	1	
10	0	0	1	
12	0	0	2	
6	2	0	1	
3	0	0	0	
5	0	0	0	
18	0	1	1	
18	3	0	1	
9	2	0	0	
23	2	0	1	
5	2	0	0	
9	0	0	0	
20	1	0	0	
10	1	0	0	
11	0	1	0	
19	0	0	0	
15	0	0	0	
15	1	0	0	
Total	506	29	4	22

3- In from Left				
Adult	Child	Impaired Adult	Impaired Child	
4	0	0	0	
4	0	0	0	
9	0	0	0	
6	0	0	0	
13	1	0	0	
21	0	0	0	
25	1	0	0	
36	1	0	1	
23	2	0	1	
14	0	0	0	
11	0	0	0	
13	0	0	1	
14	0	1	1	
15	0	0	2	
6	0	0	0	
12	0	0	0	
10	1	0	0	
8	0	0	0	
11	0	0	1	
8	0	0	0	
12	0	0	6	
23	0	0	1	
13	1	0	0	
20	0	0	0	
12	0	0	1	
13	0	0	2	
9	0	0	1	
17	0	1	0	
6	1	0	0	
13	0	0	0	
15	0	0	0	
3	0	0	0	
10	0	0	0	
15	9	0	0	
12	8	0	1	
7	1	0	0	
9	0	0	0	
19	2	1	4	
13	2	0	0	
13	1	0	0	
11	2	0	0	
10	0	0	0	
8	2	0	0	
6	3	0	0	
7	3	0	0	
5	1	0	0	
9	0	0	0	
20	0	0	0	
Total	593	42	3	23

4- In From right				
Adult	Child	Impaired Adult	Impaired Child	
2	0	0	0	
5	0	0	0	
4	0	0	0	
4	0	0	0	
6	0	0	0	
6	2	0	0	
7	7	0	0	
14	14	0	0	
4	0	0	0	
17	0	0	2	
10	0	0	0	
12	0	0	2	
2	0	0	0	
10	0	0	0	
7	0	0	0	
8	0	0	1	
8	0	0	0	
6	0	0	0	
9	0	0	0	
7	0	0	1	
4	0	0	0	
11	2	0	1	
10	0	0	0	
8	0	0	0	
10	0	0	2	
19	0	1	1	
15	0	0	1	
16	0	0	0	
1	0	0	0	
19	0	0	3	
13	0	0	1	
7	0	0	0	
14	1	0	1	
11	2	0	1	
7	2	0	0	
9	1	1	0	
16	4	0	0	
8	1	0	0	
6	0	0	0	
10	2	0	0	
14	0	0	0	
10	7	0	0	
13	2	0	0	
17	2	0	0	
13	0	0	0	
15	1	0	0	
8	0	0	0	
11	0	0	0	
Total	463	50	2	17

Location: Site 4 - Kennington Park

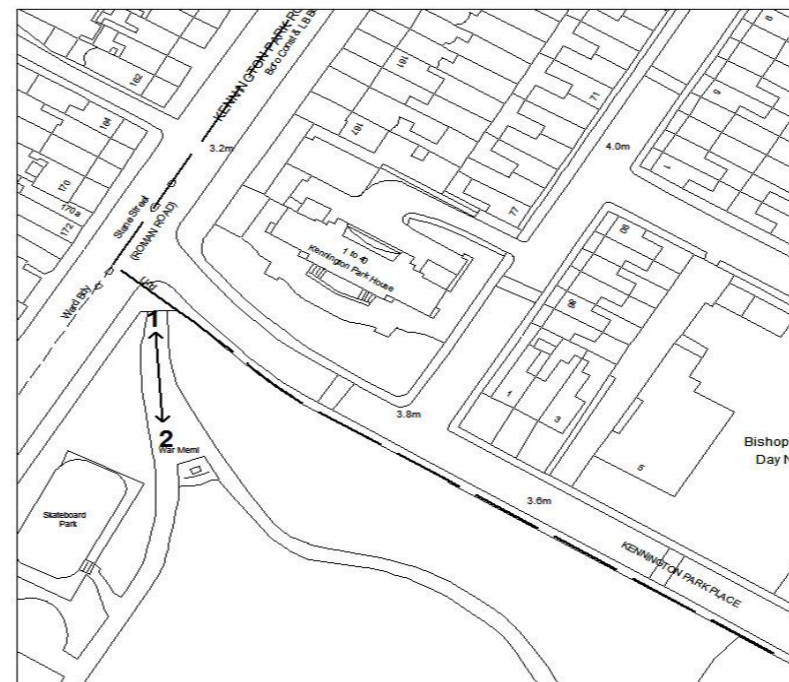
Weather: Dry

Date: Wednesday 14/11/2012

Comments: The Park closed at 15:00

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl ,up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Exiting Park			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	0	0	0	0
07:15 - 07:30	5	0	0	0
07:30 - 07:45	6	0	0	0
07:45 - 08:00	12	1	0	0
08:00 - 08:15	16	0	0	0
08:15 - 08:30	20	1	0	0
08:30 - 08:45	17	2	0	0
08:45 - 09:00	23	3	0	0
09:00 - 09:15	8	2	0	0
09:15 - 09:30	7	0	2	1
09:30 - 09:45	5	3	0	0
09:45 - 10:00	10	0	1	1
10:00 - 10:15	6	2	0	2
10:15 - 10:30	4	0	0	0
10:30 - 10:45	9	0	0	1
10:45 - 11:00	7	0	0	0
11:00 - 11:15	4	0	0	0
11:15 - 11:30	10	1	1	0
11:30 - 11:45	6	0	0	0
11:45 - 12:00	8	0	0	1
12:00 - 12:15	6	1	0	0
12:15 - 12:30	5	3	0	0
12:30 - 12:45	2	0	0	0
12:45 - 13:00	5	0	0	0
13:00 - 13:15	7	1	0	0
13:15 - 13:30	8	0	0	1
13:30 - 13:45	7	0	0	1
13:45 - 14:00	18	0	0	1
14:00 - 14:15	6	0	0	0
14:15 - 14:30	3	0	0	0
14:30 - 14:45	3	2	0	0
14:45 - 15:00	10	0	0	0
15:00 - 15:15	3	0	0	1
15:15 - 15:30	3	0	0	0
15:30 - 15:45	1	0	0	0
15:45 - 16:00	7	0	0	0
16:00 - 16:15	6	3	0	1
16:15 - 16:30	7	0	0	1
16:30 - 16:45	11	0	0	1
16:45 - 17:00	7	1	0	1
17:00 - 17:15	0	0	0	0
17:15 - 17:30	0	0	0	0
17:30 - 17:45	0	0	0	0
17:45 - 18:00	0	0	0	0
18:00 - 18:15	0	0	0	0
18:15 - 18:30	0	0	0	0
18:30 - 18:45	0	0	0	0
18:45 - 19:00	0	0	0	0
Total	308	26	4	14

Movements	2- Entering Park			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	3	0	0	0
07:15 - 07:30	4	0	0	0
07:30 - 07:45	4	0	0	0
07:45 - 08:00	7	0	0	0
08:00 - 08:15	9	0	0	0
08:15 - 08:30	3	0	0	0
08:30 - 08:45	6	0	0	0
08:45 - 09:00	7	0	0	0
09:00 - 09:15	5	0	0	0
09:15 - 09:30	10	0	1	1
09:30 - 09:45	5	0	0	0
09:45 - 10:00	2	0	0	1
10:00 - 10:15	15	0	0	1
10:15 - 10:30	11	0	0	0
10:30 - 10:45	9	0	0	0
10:45 - 11:00	4	0	0	0
11:00 - 11:15	4	0	0	0
11:15 - 11:30	4	0	0	0
11:30 - 11:45	10	0	0	1
11:45 - 12:00	4	0	1	1
12:00 - 12:15	14	1	0	1
12:15 - 12:30	8	0	0	0
12:30 - 12:45	13	0	0	1
12:45 - 13:00	12	0	0	0
13:00 - 13:15	16	0	1	0
13:15 - 13:30	11	0	0	1
13:30 - 13:45	9	0	0	0
13:45 - 14:00	13	0	0	1
14:00 - 14:15	5	3	0	0
14:15 - 14:30	3	0	0	0
14:30 - 14:45	6	0	0	0
14:45 - 15:00	2	0	0	1
15:00 - 15:15	9	0	0	2
15:15 - 15:30	6	0	0	2
15:30 - 15:45	8	0	0	3
15:45 - 16:00	9	0	0	2
16:00 - 16:15	21	0	0	1
16:15 - 16:30	14	0	0	0
16:30 - 16:45	13	2	0	2
16:45 - 17:00	6	0	0	0
17:00 - 17:15	0	0	0	0
17:15 - 17:30	0	0	0	0
17:30 - 17:45	0	0	0	0
17:45 - 18:00	0	0	0	0
18:00 - 18:15	0	0	0	0
18:15 - 18:30	0	0	0	0
18:30 - 18:45	0	0	0	0
18:45 - 19:00	0	0	0	0
Total	324	6	3	22

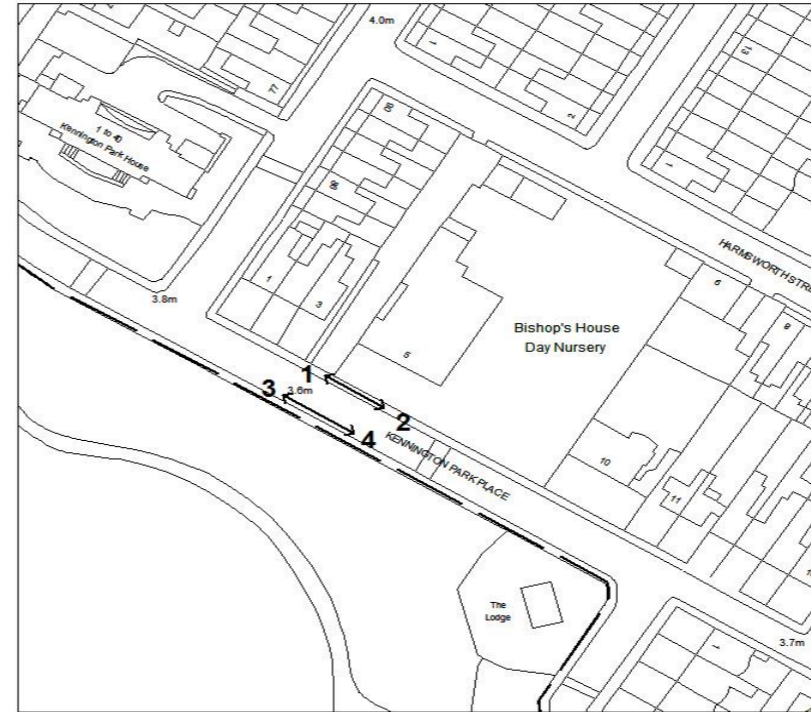
Location: Site 4 - Kennington Park Place

Weather: Dry

Date: Thursday 15/11/2012

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl ,up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Westbound			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	7	0	0	0
07:15 - 07:30	4	0	0	0
07:30 - 07:45	8	0	0	0
07:45 - 08:00	15	3	0	0
08:00 - 08:15	17	7	0	1
08:15 - 08:30	16	2	0	0
08:30 - 08:45	31	3	0	1
08:45 - 09:00	21	2	0	2
09:00 - 09:15	18	0	1	1
09:15 - 09:30	8	0	0	2
09:30 - 09:45	16	1	0	0
09:45 - 10:00	7	0	0	0
10:00 - 10:15	4	0	0	0
10:15 - 10:30	1	0	0	0
10:30 - 10:45	5	0	0	0
10:45 - 11:00	8	1	1	0
11:00 - 11:15	10	0	0	0
11:15 - 11:30	7	0	0	0
11:30 - 11:45	7	1	0	0
11:45 - 12:00	5	0	0	0
12:00 - 12:15	4	0	0	0
12:15 - 12:30	7	0	0	0
12:30 - 12:45	7	0	0	0
12:45 - 13:00	5	3	0	1
13:00 - 13:15	10	0	0	0
13:15 - 13:30	11	1	0	1
13:30 - 13:45	7	1	0	0
13:45 - 14:00	10	0	0	0
14:00 - 14:15	9	1	0	0
14:15 - 14:30	9	0	0	0
14:30 - 14:45	9	0	0	2
14:45 - 15:00	5	0	0	0
15:00 - 15:15	5	0	0	2
15:15 - 15:30	6	0	0	1
15:30 - 15:45	15	1	0	0
15:45 - 16:00	16	0	0	1
16:00 - 16:15	12	2	0	1
16:15 - 16:30	7	3	0	2
16:30 - 16:45	17	3	0	0
16:45 - 17:00	8	1	0	0
17:00 - 17:15	14	4	0	2
17:15 - 17:30	15	1	0	3
17:30 - 17:45	7	1	0	0
17:45 - 18:00	7	0	0	1
18:00 - 18:15	7	0	0	0
18:15 - 18:30	2	0	0	0
18:30 - 18:45	6	0	0	0
18:45 - 19:00	6	0	0	0
Total	458	42	2	24

2- Eastbound				
Adult	Child	Impaired Adult	Impaired Child	
1	0	0	0	
0	0	0	0	
19	0	0	1	
13	0	0	1	
10	0	0	0	
4	0	0	1	
3	0	0	3	
5	2	0	3	
6	0	0	1	
3	0	0	0	
5	0	0	2	
0	1	0	1	
3	0	0	1	
7	0	0	0	
4	0	0	0	
9	0	0	0	
3	0	0	0	
6	0	0	0	
7	1	0	1	
6	0	0	0	
4	0	0	0	
7	0	0	0	
6	0	0	0	
2	0	0	0	
8	0	0	0	
5	0	0	1	
7	0	0	1	
6	0	0	1	
6	0	0	0	
10	1	0	0	
5	0	1	0	
6	0	0	1	
17	1	0	4	
7	3	0	0	
7	1	0	2	
5	3	0	0	
8	4	1	2	
6	2	0	0	
5	0	0	0	
9	0	0	0	
15	1	0	2	
16	1	0	0	
17	1	0	0	
11	0	0	1	
19	0	0	0	
13	0	0	0	
10	0	0	0	
17	0	0	0	
Total	368	22	2	30

3- Westbound				
Adult	Child	Impaired Adult	Impaired Child	
4	1	0	0	
5	0	0	0	
2	3	0	0	
6	3	0	0	
8	2	0	0	
8	2	0	0	
6	0	0	0	
8	0	0	0	
3	0	0	0	
6	0	0	0	
3	0	0	1	
4	0	0	0	
4	0	0	0	
3	0	0	0	
7	0	0	1	
3	0	0	0	
5	0	0	0	
8	0	0	1	
6	0	0	0	
2	0	0	0	
5	0	0	0	
3	0	0	0	
6	1	0	0	
2	0	0	0	
5	0	0	0	
2	1	0	0	
2	0	0	0	
8	0	0	0	
7	0	0	0	
3	0	0	0	
4	0	0	0	
10	0	1	1	
8	1	0	0	
4	0	0	0	
8	0	0	0	
5	1	1	1	
5	2	0	0	
4	1	0	0	
8	4	0	1	
7	5	0	0	
5	2	0	0	
2	0	0	0	
8	3	0	0	
3	0	0	0	
2	0	0	0	
3	0	0	0	
Total	241	33	2	6

4- Eastbound				
Adult	Child	Impaired Adult	Impaired Child	
0	0	0	0	
1	0	0	0	
6	1	0	0	
8	0	0	0	
4	0	0	0	
3	0	0	0	
3	0	0	0	
3	0	0	0	
5	1	0	0	
4	0	0	0	
4	0	0	0	
5	0	0	1	
5	0	0	0	
3	0	0	0	
4	0	0	0	
3	1	1	0	
5	0	0	0	
2	0	0	0	
3	0	0	0	
5	0	0	0	
3	0	0	0	
6	0	0	2	
5	0	0	0	
4	0	0	0	
13	0	0	0	
7	0	0	0	
1	0	0	0	
4	0	0	0	
8	1	0	1	
6	1	0	0	
0	0	0	0	
9	0	0	2	
5	0	0	0	
2	1	0	0	
6	0	0	1	
6	5	0	0	
6	1	0	0	
8	1	0	0	
5	1	0	0	
4	3	0	0	
8	3	0	1	
1	0	0	0	
17	0	0	0	
5	0	0	0	
5	0	0	0	
11	0	0	0	
Total	237	21	1	8

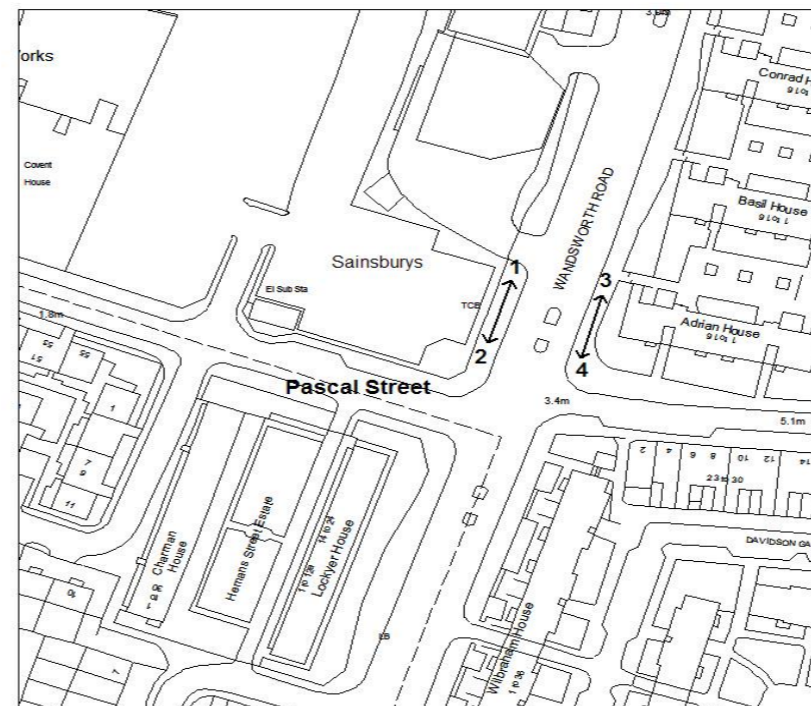
Location: Site 5 - Wandsworth Road

Weather: Dry

Date: Tuesday 13/11/2012

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl ,up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Northbound			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	18	0	0	0
07:15 - 07:30	31	0	0	0
07:30 - 07:45	13	0	0	0
07:45 - 08:00	27	5	0	0
08:00 - 08:15	38	2	0	0
08:15 - 08:30	57	3	0	0
08:30 - 08:45	30	0	0	0
08:45 - 09:00	29	3	0	1
09:00 - 09:15	20	1	0	1
09:15 - 09:30	15	0	0	0
09:30 - 09:45	9	0	0	0
09:45 - 10:00	6	0	0	0
10:00 - 10:15	8	0	0	0
10:15 - 10:30	3	0	0	0
10:30 - 10:45	16	0	0	0
10:45 - 11:00	11	0	0	0
11:00 - 11:15	9	0	0	0
11:15 - 11:30	17	0	0	0
11:30 - 11:45	7	0	0	2
11:45 - 12:00	9	0	1	0
12:00 - 12:15	15	1	0	3
12:15 - 12:30	12	0	0	0
12:30 - 12:45	21	0	0	1
12:45 - 13:00	17	0	0	0
13:00 - 13:15	15	0	0	0
13:15 - 13:30	11	0	0	1
13:30 - 13:45	18	0	0	1
13:45 - 14:00	9	0	0	0
14:00 - 14:15	6	0	0	0
14:15 - 14:30	6	0	0	0
14:30 - 14:45	2	0	0	0
14:45 - 15:00	15	1	0	1
15:00 - 15:15	4	0	0	0
15:15 - 15:30	8	3	0	0
15:30 - 15:45	13	3	0	1
15:45 - 16:00	18	2	0	0
16:00 - 16:15	7	4	0	0
16:15 - 16:30	12	0	0	0
16:30 - 16:45	9	0	0	0
16:45 - 17:00	15	0	0	0
17:00 - 17:15	29	2	0	0
17:15 - 17:30	18	0	0	0
17:30 - 17:45	12	0	0	0
17:45 - 18:00	14	0	0	0
18:00 - 18:15	13	0	0	0
18:15 - 18:30	5	0	0	0
18:30 - 18:45	11	1	0	0
18:45 - 19:00	14	0	0	0
Total	722	31	1	12

2- Southbound				
Adult	Child	Impaired Adult	Impaired Child	
1	0	0	0	
1	0	0	0	
0	0	0	0	
3	0	0	0	
10	1	0	0	
7	0	0	0	
7	0	0	0	
23	0	0	0	
12	0	0	0	
2	0	0	0	
3	0	0	0	
4	0	0	0	
4	0	0	0	
5	0	0	0	
8	0	0	0	
8	0	0	0	
2	0	0	0	
5	0	0	0	
6	2	0	0	
6	0	0	0	
12	0	0	3	
7	0	0	0	
11	0	0	0	
6	0	0	0	
8	0	0	0	
15	0	0	0	
14	0	0	1	
6	0	0	0	
4	0	0	0	
3	0	0	0	
9	0	0	0	
8	0	0	2	
8	0	0	1	
8	0	0	0	
12	1	0	0	
8	2	0	0	
15	1	0	0	
11	0	0	0	
10	1	0	0	
21	0	1	0	
14	0	0	0	
30	2	0	0	
22	1	0	1	
25	0	0	1	
41	0	0	0	
25	0	0	0	
29	0	0	0	
33	1	0	0	
Total	532	12	1	9

3- Northbound				
Adult	Child	Impaired Adult	Impaired Child	
9	0	0	0	
20	0	0	0	
17	0	0	0	
27	3	0	1	
20	5	1	0	
41	3	0	1	
28	6	0	0	
35	15	0	2	
22	3	0	3	
10	0	0	1	
7	0	1	0	
3	0	0	0	
10	0	0	2	
2	0	0	1	
11	1	0	0	
13	0	0	2	
5	0	0	0	
11	0	0	0	
4	0	0	0	
12	0	1	1	
10	1	0	0	
17	0	0	1	
18	0	0	1	
13	0	0	0	
13	0	0	0	
15	0	0	1	
6	0	0	0	
4	0	0	0	
7	0	0	0	
8	0	0	0	
16	1	0	0	
11	0	0	2	
9	0	0	1	
14	1	0	1	
11	3	0	0	
6	0	1	0	
13	3	0	0	
26	3	0	0	
12	0	0	0	
17	2	0	0	
17	3	0	0	
7	0	0	0	
14	0	0	0	
7	0	0	0	
11	3	0	0	
8	1	0	0	
5	2	0	0	
9	0	0	0	
Total	631	59	4	21

4- Southbound				
Adult	Child	Impaired Adult	Impaired Child	
7	0	0	0	
3	0	0	0	
6	0	0	0	
5	0	1	0	
3	1	0	0	
20	2	0	2	
19	0	0	0	
15	7	0	0	
16	0	0	0	
20	0	0	0	
9	0	0	0	
9	0	0	1	
9	0	0	1	
7	0	0	0	
13	0	0	3	
14	0	0	1	
9	0	0	0	
10	0	0	0	
11	0	0	0	
14	0	1	1	
10	0	0	0	
17	1	0	1	
13	0	0	1	
21	0	0	1	
16	0	0	0	
11	1	0	2	
14	0	0	0	
13	0	0	2	
9	0	0	0	
12	0	0	0	
10	0	0	0	
8	0	0	1	
23	3	0	2	
31	14	0	1	
17	6	0	2	
21	11	0	3	
24	5	0	0	
23	3	0	0	
32	4	0	0	
21	2	0	0	
24	5	1	0	
33	2	0	0	
30	0	0	1	
45	1	0	1	
40	2	0	3	
46	3	0	0	
44	2	0	0	
37	0	0	0	
Total	864	75	3	30

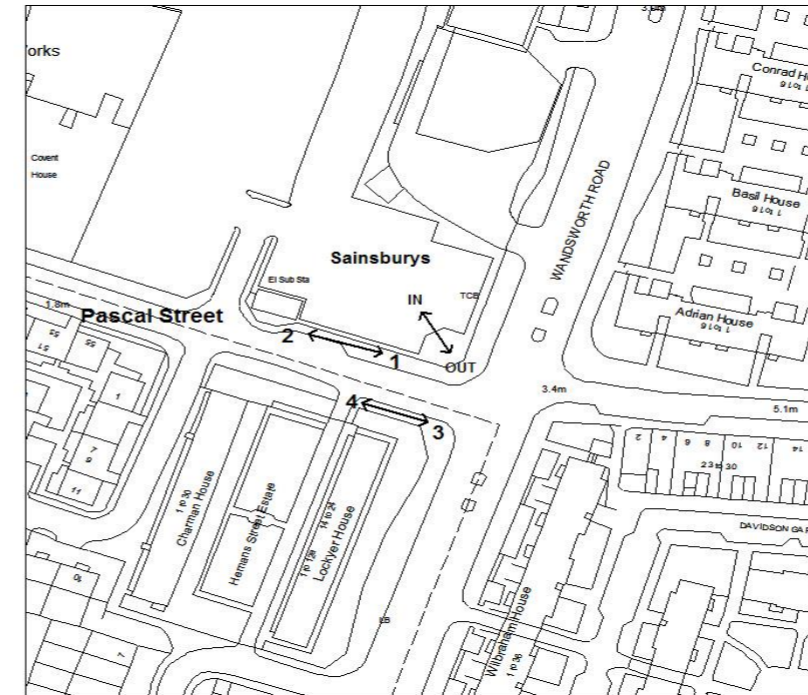
Transport for London - Traffic Surveys Unit

Location: Site 5 - Pascal Street- Pedestrian entry/ exit to Sainsburys

Date: Tuesday 13/11/2012 Weather: Dry

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl , up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- In			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	2	0	0	0
07:15 - 07:30	6	2	1	0
07:30 - 07:45	15	2	0	0
07:45 - 08:00	8	0	0	0
08:00 - 08:15	15	0	2	0
08:15 - 08:30	11	0	0	1
08:30 - 08:45	8	1	0	0
08:45 - 09:00	8	0	0	0
09:00 - 09:15	24	0	0	3
09:15 - 09:30	14	0	1	0
09:30 - 09:45	12	0	0	1
09:45 - 10:00	19	1	1	0
10:00 - 10:15	6	0	0	1
10:15 - 10:30	17	0	1	2
10:30 - 10:45	20	1	0	2
10:45 - 11:00	15	0	2	0
11:00 - 11:15	13	0	1	1
11:15 - 11:30	21	0	3	5
11:30 - 11:45	18	0	0	4
11:45 - 12:00	11	0	0	0
12:00 - 12:15	15	0	1	0
12:15 - 12:30	22	0	1	2
12:30 - 12:45	19	0	1	0
12:45 - 13:00	33	0	1	0
13:00 - 13:15	27	0	0	2
13:15 - 13:30	18	2	0	0
13:30 - 13:45	16	0	0	1
13:45 - 14:00	21	1	1	1
14:00 - 14:15	19	1	1	3
14:15 - 14:30	17	0	1	1
14:30 - 14:45	21	1	1	0
14:45 - 15:00	31	2	0	4
15:00 - 15:15	12	0	0	2
15:15 - 15:30	14	2	0	0
15:30 - 15:45	25	5	0	4
15:45 - 16:00	19	2	1	1
16:00 - 16:15	16	5	0	2
16:15 - 16:30	18	2	0	0
16:30 - 16:45	34	3	0	3
16:45 - 17:00	33	0	0	0
17:00 - 17:15	24	0	0	0
17:15 - 17:30	23	2	0	0
17:30 - 17:45	9	0	1	0
17:45 - 18:00	27	1	0	0
18:00 - 18:15	28	3	0	4
18:15 - 18:30	25	1	0	2
18:30 - 18:45	18	0	0	0
18:45 - 19:00	8	0	0	0
Total	855	40	22	52

2- Out			
Adult	Child	Impaired Adult	Impaired Child
6	0	0	0
4	1	0	0
8	1	0	0
7	0	1	0
8	1	0	0
8	0	0	0
7	0	0	0
9	0	0	0
7	0	2	0
12	0	1	5
14	1	2	2
19	0	1	1
14	1	0	0
9	0	0	1
14	0	1	2
12	1	0	1
9	0	0	0
11	0	0	1
13	0	1	1
11	0	0	1
13	0	0	1
10	0	1	2
15	0	0	0
23	0	0	1
37	0	0	1
26	1	1	1
9	0	0	0
11	0	0	0
13	1	1	1
18	0	1	4
12	0	1	3
19	0	1	0
13	0	2	0
15	0	0	1
18	0	0	1
26	1	0	1
17	3	0	1
11	2	0	1
26	1	0	2
25	2	0	2
26	1	0	1
18	0	0	0
24	0	0	0
40	1	2	0
15	0	0	0
29	3	0	1
22	0	0	2
25	0	0	0
Total	758	22	42

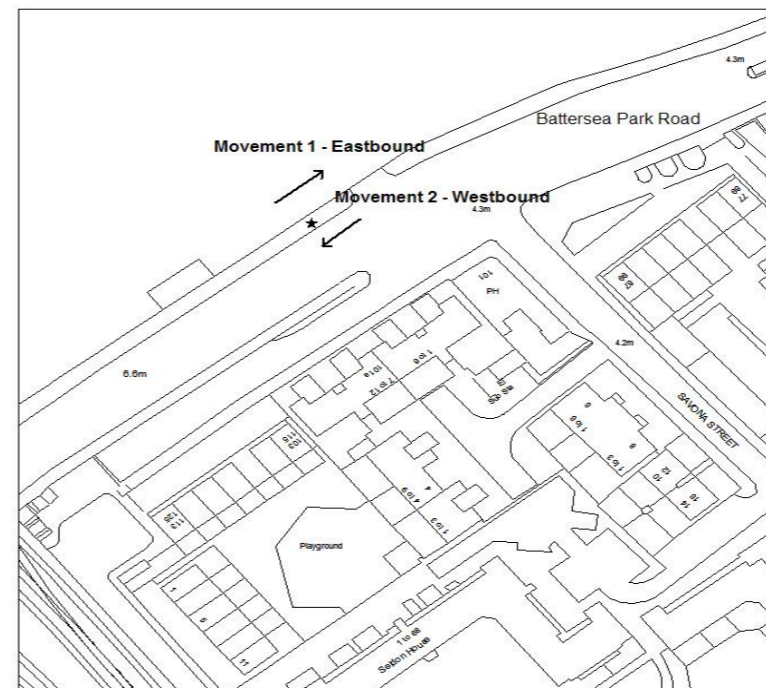
Location: Site 6 - Battersea Park Road

Weather: Dry

Date: Tuesday 13/11/2012

PEDESTRIANS TO BE CLASSIFIED INTO 4 CATEGORIES:

- 1) ADULT- Able bodied
- 2) CHILD - Any child ,boy or girl , up to 16 years
- 3) IMPAIRED ADULT - Any adult , male or female using a walking aid , eg in wheelchair, mobility scooter, walking stick, crutch etc
- 4) IMPAIRED CHILD - Any child, boy or girl, in pushchair, pram, babies being carried.. etc



Movements	1- Eastbound			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	2	0	0	0
07:15 - 07:30	6	0	0	0
07:30 - 07:45	16	0	0	0
07:45 - 08:00	11	0	0	0
08:00 - 08:15	8	0	0	0
08:15 - 08:30	12	0	0	0
08:30 - 08:45	8	0	0	0
08:45 - 09:00	9	0	0	0
09:00 - 09:15	12	0	0	0
09:15 - 09:30	8	0	0	0
09:30 - 09:45	6	0	0	0
09:45 - 10:00	5	0	0	0
10:00 - 10:15	2	0	0	0
10:15 - 10:30	4	0	0	0
10:30 - 10:45	3	0	0	0
10:45 - 11:00	1	0	0	0
11:00 - 11:15	4	0	0	0
11:15 - 11:30	3	0	0	0
11:30 - 11:45	5	0	0	0
11:45 - 12:00	3	0	0	0
12:00 - 12:15	3	0	0	0
12:15 - 12:30	4	0	0	0
12:30 - 12:45	6	0	0	0
12:45 - 13:00	11	0	0	0
13:00 - 13:15	11	0	0	0
13:15 - 13:30	9	0	0	0
13:30 - 13:45	8	0	0	0
13:45 - 14:00	4	0	0	0
14:00 - 14:15	3	0	0	0
14:15 - 14:30	4	0	0	0
14:30 - 14:45	4	0	0	0
14:45 - 15:00	15	0	0	0
15:00 - 15:15	1	0	0	0
15:15 - 15:30	6	0	0	0
15:30 - 15:45	3	0	0	0
15:45 - 16:00	8	0	0	1
16:00 - 16:15	3	0	0	0
16:15 - 16:30	1	0	0	0
16:30 - 16:45	8	3	0	0
16:45 - 17:00	8	0	0	0
17:00 - 17:15	5	0	0	0
17:15 - 17:30	4	0	0	0
17:30 - 17:45	11	0	0	0
17:45 - 18:00	7	0	0	0
18:00 - 18:15	2	0	0	0
18:15 - 18:30	10	0	0	0
18:30 - 18:45	10	0	0	0
18:45 - 19:00	12	0	0	0
Total	309	3	0	1

Movements	2- Westbound			
	Adult	Child	Impaired Adult	Impaired Child
07:00 - 07:15	10	1	0	0
07:15 - 07:30	8	0	0	0
07:30 - 07:45	10	1	0	0
07:45 - 08:00	9	1	0	0
08:00 - 08:15	6	0	0	0
08:15 - 08:30	11	0	0	0
08:30 - 08:45	9	1	0	0
08:45 - 09:00	9	0	0	0
09:00 - 09:15	6	0	0	0
09:15 - 09:30	5	0	0	0
09:30 - 09:45	8	0	0	0
09:45 - 10:00	3	0	0	0
10:00 - 10:15	4	0	0	0
10:15 - 10:30	3	0	0	0
10:30 - 10:45	2	0	0	0
10:45 - 11:00	4	0	0	0
11:00 - 11:15	12	0	0	0
11:15 - 11:30	5	0	0	0
11:30 - 11:45	3	0	0	0
11:45 - 12:00	6	0	0	0
12:00 - 12:15	3	0	0	0
12:15 - 12:30	5	0	0	0
12:30 - 12:45	12	0	0	0
12:45 - 13:00	5	0	0	0
13:00 - 13:15	7	0	0	0
13:15 - 13:30	5	0	0	0
13:30 - 13:45	10	0	1	0
13:45 - 14:00	8	0	0	0
14:00 - 14:15	4	0	0	0
14:15 - 14:30	4	0	0	0
14:30 - 14:45	1	0	0	0
14:45 - 15:00	7	0	0	0
15:00 - 15:15	4	0	0	0
15:15 - 15:30	4	0	0	0
15:30 - 15:45	1	0	0	0
15:45 - 16:00	5	0	0	0
16:00 - 16:15	3	0	0	1
16:15 - 16:30	5	0	0	0
16:30 - 16:45	3	0	0	0
16:45 - 17:00	12	0	0	0
17:00 - 17:15	11	0	0	0
17:15 - 17:30	8	0	0	0
17:30 - 17:45	9	0	0	0
17:45 - 18:00	7	0	0	0
18:00 - 18:15	22	0	0	0
18:15 - 18:30	10	0	0	0
18:30 - 18:45	16	0	0	0
18:45 - 19:00	9	0	0	0
Total	333	4	1	1

Kennington Triangle Pelican Crossing Survey by Jon Hunt 26/03/2013

Weather: Very Cold but dry

Time:	No. of times activated:	Red Man:		Green Man/Flashing Green:	
		Crossing N/B	Crossing S/B	Crossing N/B	Crossing S/B
AM Peak					
0700-0715	1	3	0	0	0
0715-0730	2	1	1	1	1
0730-0745	2	4	0	1	0
0745-0800	1	0	2	2	1
0800-0815	2	2	0	2	0
0815-0830	4	5	3	0	1
0830-0845	7	5	5	2	4
0845-0900	6	5	7	0	2
0900-0915	5	6	10	0	7
0915-0930	5	3	3	1	1
0930-0945	2	2	0	0	0
0945-1000	3	2	1	0	1
AM total	40	38	32	9	18
	Total Northbound	47		Total Southbound	50
Inter Peak					
1200-1215	1	2	6	0	1
1215-1230	2	7	7	2	0
1230-1245	4	3	5	0	2
1245-1300	2	6	4	0	0
1300-1315	1	1	0	0	0
1315-1330	2	3	2	2	0
1330-1345	1	6	0	0	0
1345-1400	3	4	3	2	1
Inter total	16	32	27	6	4
	Total Northbound	38		Total Southbound	31
PM Peak					
1600-1615	2	0	3	0	2
1615-1630	1	4	3	0	0
1630-1645	3	5	3	0	3
1645-1700	1	0	2	1	0
1700-1715	2	3	4	0	1
1715-1730	1	3	2	0	0
1730-1745	3	4	9	2	2
1745-1800	4	4	7	4	4
1800-1815	3	5	4	3	2
1815-1830	1	3	3	0	0
1830-1845	1	2	1	0	0
1845-1900	2	2	2	0	2
PM Total	24	35	43	10	16
	Total Northbound	45		Total Southbound	59

CONTROL SHEET

Project/Proposal Name Northern Line Extension
 Document Title Existing Pedestrian Conditions
 Client Contract/Project No. Cristy Joel
 SDG Project/Proposal No. 22469103

ISSUE HISTORY

Issue No.	Date	Details
1.0	2013/01/10	Initial draft
2.1	2013/04/09	Final draft

REVIEW

Originator Grant Fletcher
 Other Contributors
 Review by: Print David Bowers
 Sign



DISTRIBUTION

Client: Transport for London
 Steer Davies Gleave: DJ, PDT



C3: Northern Line Stations PEDS
Analysis

Environmental Statement

Volume II



Northern Line Extension (NLE) – PEDS analysis of Northern line stations

Ref: NLE PEDS 2013

Date: 2nd April 2013

Introduction

The forecast impact of the extension of the Charing Cross branch of the Northern line to Battersea via an intermediate station at Nine Elms has been assessed using the Pedroute Strategic (PEDS) model. This model is used to analyse existing and future station operation based on passenger behaviour and demand.

Demand is taken from the latest 2031 Railplan runs, which include revised housing and employment forecasts for the Vauxhall Nine Elms Battersea (VNEB) Opportunity Area (OA). This is consistent with the approach taken in the Environment Statement, as set out in Chapter 2: EIA Methodology.

The base case and test case used in the model are summarised below:

Case	Base (without NLE)	Test (with NLE)
PEDS ref	NX242	NX243
Key assumptions	All of the consented development schemes within VNEB OA are built out according to their planning consents as of January 2013, with the exception of specific phases of Battersea Power Station.	This case assumes the completion of all the consented schemes as per their planning consents in January 2013, including all phases of Battersea Power Station, i.e. the provision of the NLE enables the remainder of the power station development. It also includes other sites within the VNEB OA which have yet to come forward with a planning application.
Modelling inputs	<ul style="list-style-type: none"> 2031 AM Northern Line Upgrade phase 2 	<ul style="list-style-type: none"> 2031 AM Northern Line Upgrade phase 2 NLE

Train service assumptions in the model also reflect those specified in the 2031 Railplan modelling for the scheme, including the updated assumptions on Northern Line Upgrade phase 2 (NLU2) service levels.

This note is focused on the impact of the NLE on the Northern line, and does not consider the impact of the NLU (phase 1 or 2) on the line. Separate assessments have been undertaken specifically on the impact of the NLU, and these have informed TfL’s capital investment programme for providing additional capacity at stations, reflected in the current Business Plan.

Separate, more detailed assessments have also been undertaken looking at the impact of the NLE on Kennington station (on the Northern line) and Vauxhall station (on the Victoria line) due to their close interfaces with the NLE and the wider development of the VNEB OA. The impact of the NLE at these two stations is therefore not considered in this note.

The PEDS tool

The Pedroute Strategic (PEDS) model is a useful tool for assessing delay and congestion at London Underground (LU) stations. The extent of congestion at individual stations can be measured together with an assessment of the delay and associated disbenefits that passengers would experience as a result of that congestion. The model uses a representation of walk links in the LU network and combines these with passenger flows. It then routes passengers through the station network allowing for congestion effects to reach equilibrium assignment.

The output of PEDS includes demand and delay on individual links including passageways, stairs, escalators, lifts and gatelines. The flows are presented in 15-minute periods for each link within the station. These flows can then be converted into Levels of Service (LoS) to provide a qualitative understanding of the quality of service provided to passengers.

Essentially, LoS is measure of passenger density and is divided into the following six categories:

LoS	Description
A	Free circulation.
B	Uni-directional flows and free circulation. Reverse and cross-flows with only minor conflicts.
C	Slightly restricted circulation due to difficulty in passing others. Reverse and cross-flows with difficulty.
D	Restricted circulation for most pedestrians. Significant difficulty for reverse and cross-flows.
E	Restricted circulation for all pedestrians. Intermittent stoppages and serious difficulties for reverse and cross-flows.
F	Complete breakdown in traffic flow with many stoppages.

LU standards (Station Planning Standards and Guidelines, 2012 edition) are designed to ensure that new infrastructure:

- provides sufficient space to allow for safe and comfortable passenger movement;

- is resilient to surges in demand;
- avoids the need for temporary station closures; and
- avoids making stations uneconomically large.

This typically means that mid-range performance in the LoS range for different parts of a station (between categories C and E) is generally considered suitable.

On the existing network, many locations operate with LoS somewhere between categories C and F at peak times due to the high demand on the system and the age and design of existing infrastructure. Whilst this means passengers do experience delay, as the network demonstrates each day during the peaks, for many locations it does not necessarily prevent effective operations continuing.

The acceptable LoS varies by link type. For example a LoS of C would be considered acceptable for two-way passages and staircases, whilst for one-way passages and stairways a lower LoS of D would be acceptable (due to there being less complex movements). The Station Planning Standards and Guidelines include more information on LoS.

Results

The PEDS output on crowding levels for all stations on the Northern line is presented in the following table. This shows the worst LoS on any link in the station, for the busiest 15 minutes during the forecast 3 hour am peak period. Where there is an adverse change in the worst LoS between the base case and test case at any given station, these stations are highlighted in the table.

Station	Base case (without NLE)	Test case (with NLE)
Edgware	C	C
Burnt Oak	C	C
Colindale	C	C
Hendon Central	D	D
Burnt Oak	C	C
Golders Green	E	E
Hampstead	C	D
Belsize Park	B	B
Chalk Farm	A	A
Camden Town	E	E
Mornington Crescent	D	D
Euston	F	F
Warren Street	F	F
Goodge Street	F	E
Tottenham Court Road	F	F
Leicester Square	E	E
Charing Cross	D	D
Embankment	E	E
Waterloo	E	E
High Barnet	E	E
Totteridge & Whetstone	B	B
Woodside Park	A	A
West Finchley	A	A
Finchley Central	F	F

East Finchley	F	E
Highgate	F	F
Archway	D	D
Tufnell Park	F	F
Kentish Town	D	D
King's Cross	F	F
Angel	E	E
Old Street	F	F
Moorgate	F	F
Bank	F	F
London Bridge	F	F
Borough	D	D
Elephant & Castle	F	F
Oval	B	B
Stockwell	E	F
Clapham North	B	B
Clapham Common	F	E
Clapham South	E	D
Balham	E	E
Tooting Bec	F	F
Tooting Broadway	C	D
Colliers Wood	D	E
South Wimbledon	D	D
Morden	B	B

The assessment has indicated that the effect of the NLE has only a negligible impact on station crowding across the wider LU network. The only stations that experience a worsening in LoS with the NLE are Stockwell, Hampstead, Tooting Broadway and Colliers Wood. In all four of these cases the change in LoS is marginal, representing one category change in the LoS range. There are also improvements in LoS across some stations, including Clapham Common and Clapham South.

Stockwell

At Stockwell the worst LoS can be found on the northbound Northern line platform. This link is expected to reduce from category E to category F, due to a rise in passengers (approximately 400) interchanging between the northbound Northern line and the northbound Victoria line platforms.

The cross-passages which connect with the northbound Victoria line platform are accessed from the central section of the platform. However the LoS is worst towards the far north end of the platform, close to the platform exit which leads to the station's ticket hall, as a consequence of passengers alighting from the first two carriages and then interchanging with the Victoria line conflicting with the low numbers of alighting passengers heading for the station exit.

Congestion on this section of the platform is very localised and short-lived when it occurs and so although it will worsen as a result of the NLE, it is not expected to impact on the safe operation of the station or prevent passengers exiting the platform before the next train arrives.

Hampstead

At Hampstead the worst LoS occurs at the gateline, which worsens from category C to category D. The change in LoS observed in PEDS is due to very a minor fluctuation in demand. The fluctuation between the scenarios reduces entries and increase exits by less than 1% respectively. Even though the change is very minor, the base case LoS is very close to the threshold with the category below. Hence even this minor change results in a change in the LoS category.

PEDS does not respond to changes in demand by altering the configuration of in and out gates at the gateline. As a result a specific assessment of Hampstead's gateline capacity has also been undertaken, which shows that the total gateline capacity is sufficient as there are fewer than the LU standard maximum of 25 passengers per minute per gate during the busiest 15 minute period. As is standard protocol, the station staff would manually set-up the gateline to serve the entry and exit flows depending upon the times of day. The assessment shows that the total number of gates they would require to meet the combination of flows is sufficient.

Tooting Broadway

At Tooting Broadway the worst LoS occurs on the escalator, which worsens from category C to category D. This is due to a marginal change in the demand of just 23 passengers exiting the station between the scenarios, moving the LoS across the threshold from C to D.

A further specific assessment has therefore also been undertaken, which shows that the escalator capacity is sufficient as less than 100 passengers per minute (the planning standard throughput of an escalator) are using it during the busiest 15 minute period.

Colliers Wood

As is the case for Tooting Broadway, the worst LoS occurs on the escalator which worsens from category D to category E. This is due to a marginal change in the demand of just 15 passengers entering the station between the scenarios, moving the LoS across the threshold from D to E.

A further specific assessment has therefore also been undertaken, which shows that the escalator capacity is sufficient as less than 100 passengers per minute (the planning standard throughput of an escalator) are using it during the busiest 15 minute period.

Conclusion

Aside from Kennington station which is being assessed separately, there are no stations on the Northern line that are forecast to require specific interventions to mitigate increased passenger flows generated by the NLE. The spread of the additional passengers generated by the NLE across the network means that changes in congestion at other stations is relatively marginal and is not forecast to worsen conditions to an extent that would justify additional station congestion measures.

C4: Legion Modelling Report on Kennington Station

Environmental Statement

Volume II



Northern Line Extension

Kennington Station - Report on dynamic modelling outputs

April 2013

Table of contents

1	Executive summary	2
2	Background and objectives.....	3
2.1	Northern Line Extension	3
2.1.1	Kennington station operation	3
2.2	Dynamic Modelling Objectives	4
3	Description of model scenarios	5
3.1	Model times	5
3.2	Current year model (2011).....	5
3.3	Future year models.....	5
3.3.1	2031 without NLE	5
3.3.2	2031 with NLE and current infrastructure	5
3.3.3	2031 with NLE and additional cross passages	5
4	Modelling inputs and assumptions.....	6
4.1	Passenger demand	6
4.1.1	Current year (2011) origin-destination matrix	6
4.1.2	Future year (2031) origin-destination matrix	6
4.1.3	Access, egress, interchange demand comparison	7
4.2	Key modelling assumptions	8
4.2.1	Train service patterns	8
4.2.2	Routings	8
5	Dynamic modelling outputs	9
5.1	Station Planning Standards and Guidelines.....	9
5.2	Modelling output results	10
5.2.1	Cumulative mean density (CMD) maps	10
5.2.2	Cumulative high density (CHD) maps	12
6	Summary and conclusion.....	14
Appendix A: Modelling methodology		15
A.1	Source of drawings.....	15
A.2	Entity colours, speed and size.....	15

1 Executive summary

This report provides an analysis and evaluation of the current and future year operation of Kennington station. The Northern Line Extension (NLE) and the expected impact it will have on interchange demand at the station is the main driver for the cross passage crowding assessments that this report comments on. The proposals for the NLE include the additional cross passages at Kennington station.

The method of analysis was dynamic modelling using specialised pedestrian simulation software. Main inputs analysed were demand forecasts for future year (2031) without and with NLE; train service patterns pre and post Northern Line Upgrade 2 and boarding and alighting profiles.

The models developed for the AM peak (07:00-10:00) are:

- Current year (2011);
- 2031 without NLE;
- 2031 with NLE and current infrastructure;
- 2031 with NLE and two additional cross passages connecting the northbound platforms.

The level of crowding on the northbound platforms and cross passages in the AM Peak was analysed for the peak 15 minutes (08:30-08:45) of the peak. The southbound platforms and cross passages are less busy during the AM peak and hence are not considered in this report. The dynamic modelling outputs examined are the Cumulative Mean and High Density Maps showing Fruin's Levels of Service (LoS) (with ranges from A to F) registered in the area. Within that range the Station Planning and Standards Guidelines (SPSG) recommends that normal operation should not, wherever possible, exceed a value within the range covered by LoS C.

The conclusions drawn from the analysis of these crowding maps are:

- With current year (2011) demand and train service, crowding levels on the cross passages reach LoS D or E.
- With 2031 demand levels (without NLE) crowding on the cross passages reaches LoS D or E as a result of the increase in background demand that counterbalances the more frequent (compared to current year) train service.
- With 2031 demand levels with NLE the additional interchange demand from extension creates additional crowding (compared to the 2031 without NLE case) in all the cross passages connecting the northbound platforms. LoS E is reached in some of the interchange passageways and sustained for a period of 3 minutes in the peak 15 minutes of the AM Peak.

- The addition of two cross passages on the northbound platforms with NLE (2031 demand) is projected to have sufficient capacity and not lead to sustained high density levels in the cross passages. This conclusion is reached from the examination of the cumulative high density (CHD) maps that show LoS does not reach greater LoS C for the duration of the peak 15 minutes in the AM peak. It was also observed that the addition of the cross passages reduced crowding on the northbound platforms, compared to the 2031 without and with NLE model scenarios where no additional cross passages are provided.

It is recommended two additional cross passages between the northbound platforms should be implemented if the NLE is to be built.

2 Background and objectives

2.1 Northern Line Extension

The extension of the Northern Line to Nine Elms and Battersea is part of wider plans to regenerate the Vauxhall, Nine Elms and Battersea Opportunity Area (VNEB OA). The regeneration is expected to improve transport links and public spaces in the area and is supported by the Mayor of London, Wandsworth, Lambeth and Southwark councils.

Up to 25,000 new jobs and 16,000 new homes could be created and with the extension of the tube journey times from Nine Elms or Battersea to the West End or the City will, in some cases, be less than 15 minutes¹.

2.1.1 Kennington station operation

The NLE will result in the number of stations served by the Northern line increasing by two. One will be at Nine Elms on Wandsworth Road, and a second at the Battersea Power Station site which will provide the new terminus to the southwest of Kennington. These two stations will be served by Charing Cross branch trains travelling via Kennington station.

In addition to the NLE, the Northern Line Upgrade 2 (NLU2) will see train services split at Kennington. In the AM Peak (07:00-10:00), all northbound (NB) trains coming from Morden will travel via Bank to High Barnet. In the same period, all trains on the Charing Cross branch will start at Kennington or Battersea and terminate at Edgware. NLU2 will therefore result in additional interchange movements at Kennington.

The NLE will also produce additional interchange movements at Kennington compared to those observed today. Passengers wishing to travel via Bank from the two new stations will interchange at Kennington. This will be in addition to the passengers travelling from the Morden branch who wish to travel to stations on the Charing Cross Branch, as they currently do.

Figure 1 that follows, shows the service patterns for the Northern line post NLU2.

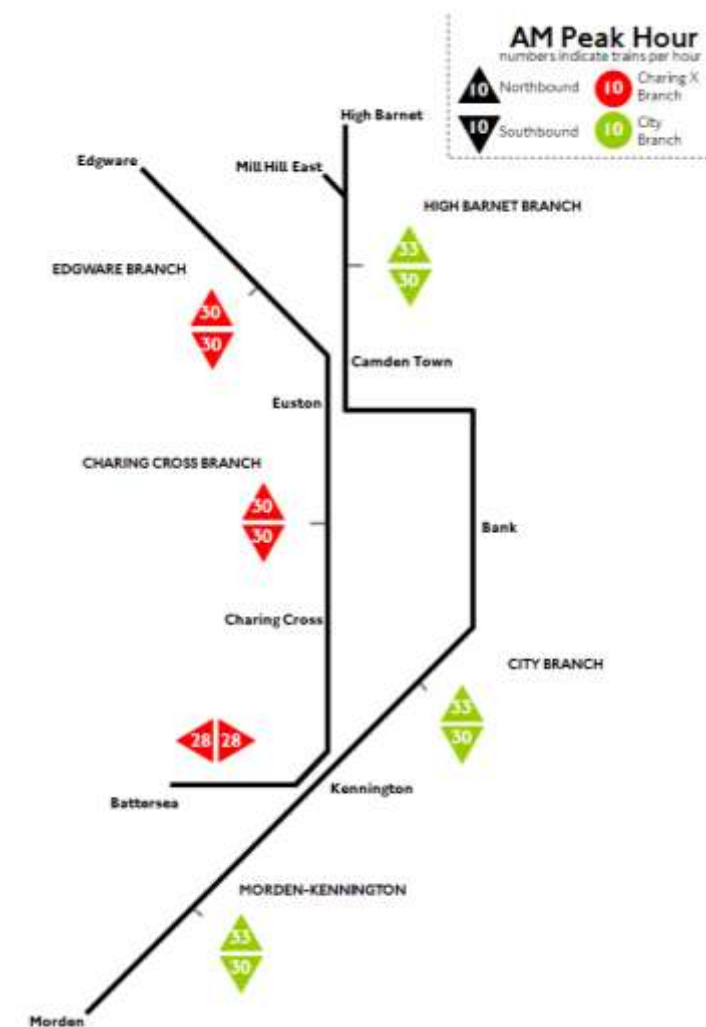


Figure 1 – Train service patterns post NLU2 and with NLE

In the AM Peak and for the northbound direction, the train service patterns effectively result in a full separation of the Northern line.

Kennington station becomes a key interchange station for passengers wishing to switch to either of the Charing Cross (CX) or Bank branches. A logical question therefore arises, as to whether the station will be able to cope with the additional (compared to RODS 2011²) interchange demand.

¹ <http://www.tfl.gov.uk/corporate/projectsandschemes/21614.aspx>

² Interchange levels as observed and by the Rolling Origin and Destination Survey for 2011

2.2 Dynamic Modelling Objectives

As a result of the observations made with regards to the operation of Kennington station post NLE and NLU2, a modelling exercise using Legion Spaceworks has been conducted to give an insight on future year station operation. The main changes that are expected to affect operation of the station are demand (specifically am peak interchange demand for the northbound direction) and train service patterns brought about by the NLU2.

The modelling exercise provided the basis for a comparative analysis of output results between current (2011) and future year (2031) demand levels.

The main objective of this report is to estimate crowding levels on platforms and interchange cross passages at Kennington station, as well as identify other areas that are expected to be affected by the number of passengers interchanging. Plus then to test the effectiveness of the additional cross passage infrastructure in terms of its ability to accommodate the interchange demand generated by the NLE and hence the impact on the overall operation of the station.

For the purposes of this assessment, it is assumed that the cross passages will be located roughly equidistant between existing cross passages and will be sufficient width – this is consistent with the design for cross passages presented in the NLE Environmental Statement.

3 Description of model scenarios

placed equidistant between the passageway on the north end or south end part of the platform and the adjacent passageway.

3.1 Model times

All models described in the following section were run for the AM Peak, from 07:00 to 10:00.

The particular interest in the AM peak is because it is the period of day when interchange movements going northbound from Kennington are expected in a 2031 post-NLE scenario to have the greatest impact on interchange passageway utilisation.

3.2 Current year model (2011)

The base year model against which future year models are compared to is for 2011.

The current year model was run with RODS 2011 demand levels. Train service patterns input were as of Working Timetable 53.

A full description of train service patterns and demand tables is given in Chapter 4.

3.3 Future year models

Future year models were run using 2031 demand levels.

Based on assumptions with regards to completion of NLE and infrastructure changes, the following 2031 model scenarios were simulated:

3.3.1 2031 without NLE

A model of Kennington station with 2031 demand levels and NLU2 train service patterns scenario.

For this scenario it is assumed that the NLE has not been built.

3.3.2 2031 with NLE and current infrastructure

A model of Kennington station with 2031 levels and an NLU2 train service pattern with the NLE in operation but without the addition of the cross passages.

3.3.3 2031 with NLE and additional cross passages

The same scenario as the 2031 with NLE with the addition of two extra cross passages connecting the northbound platforms. This scenario has been developed with two extra cross passages between platforms 1 and 3. Each of these cross passages has been

4 Modelling inputs and assumptions

4.1 Passenger demand

4.1.1 Current year (2011) origin-destination matrix

RODS 2011 demand data was used for the current year (2011) models.

Table 1 shows the origin destination matrix for Kennington station under 2011 demand levels.

Kennington 2011 AM Peak Demand Matrix	KENNINGTON BANK NB	KENNINGTON BANK SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON BANK NB	40		6,237		181	6,458
KENNINGTON BANK SB			184		463	647
KENNINGTON CX NB	391		4		36	431
KENNINGTON CX SB	139	956		127	384	1,606
KENNINGTON T H	1,084	169	1,389	76		2,718
TOTAL	1,654	1,125	7,814	203	1,064	11,860

Table 1 – RODS 2011 origin-destination matrix

Table 2 gives the total number of passengers accessing, egressing and interchanging in 2011 at Kennington station.

RODS 2011 Demand	Number of passengers
Access	2,718
Egress	1,064
Interchange	8,078
Total	11,860

Table 2 – RODS 2011 Access, Egress, Interchange demand

4.1.2 Future year (2031) origin-destination matrix

TfL’s Railplan model was used to provide demand forecasting outputs which were used for the future year (2031) models after application of the demand forecasting formula for station modelling³.

4.1.2.1 Railplan scenarios

The following 2031 Railplan Scenarios were analysed:

NX242: 2031 demand without NLE

This assumes all of the consented development schemes within VNEB OA are built out according to their planning consents as of January 2013, with the exception of specific phases of Battersea Power Station.

NX243: 2031 demand with NLE

This assumes the completion of all the consented schemes as per their planning consents in January 2013, including all phases of Battersea Power Station, i.e. the provision of the NLE enables the remainder of the power station development. It also includes other sites within the VNEB OA which have yet to come forward with a planning application.

4.1.2.2 Forecasted 2031 demand levels

Tables 3 and 4 show the forecasted⁴ demand levels for 2031 without and with NLE respectively.

2031 without NLE Forecasted AM Peak Demand	KENNINGTON BANK NB	KENNINGTON BANK SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON BANK NB			9,932		248	10,180
KENNINGTON BANK SB			638		855	1,493
KENNINGTON CX NB	0				0	0
KENNINGTON CX SB	72	1,921			1,005	2,998
KENNINGTON T H	1,570	619	3,373			5,562
TOTAL	1,643	2,540	13,943	0	2,108	20,234

Table 3 – 2031 without NLE origin-destination matrix

³ For further information regarding application of the demand forecasting formula please refer to the following document: *Station Demand Modelling v1.1, June 2005, page 16*

⁴ Forecasted demand is the output of the application of the demand forecasting formula on Railplan Scenarios NX242 and NX243.

The demand shown in Table 3 is after the application of the demand forecasting formula on the Railplan output from scenario NX242 for 2031 without NLE.

2031 with NLE Forecasted AM Peak Demand	KENNINGTON NB BANK	KENNINGTON SB BANK	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON BANK NB			9,353	181	239	9,773
KENNINGTON BANK SB			562	1,711	852	3,125
KENNINGTON CX NB	2,552	195			244	2,991
KENNINGTON CX SB	60	859			970	1,889
KENNINGTON T H	1,555	567	3,069	432		5,623
TOTAL	4,167	1,621	12,984	2,324	2,306	23,402

Table 4 – 2031 with NLE origin-destination matrix

Similarly, demand for the 2031 with NLE scenario in Table 4 is the output of the application of the demand forecasting formula on Railplan scenario NX243 for 2031 with NLE.

The section that follows provides an insight on the differences between the two 2031 demand scenarios per movement (access, egress and interchange).

4.1.3 Access, egress, interchange demand comparison

Analysing the demand forecasts for 2031 with and without NLE, it becomes clear that an additional interchange movement occurs post-NLE.

With Nine Elms and Battersea stations added, passengers will interchange at Kennington from the Charing Cross NB platform (platform 1) to the Bank branch NB platform (platform 3). This is an interchange movement that does occur in the without NLE scenarios and is additional to the main interchange movement under the without NLE scenarios, from Bank branch NB platform (platform 3) to Charing Cross NB platform (platform 1).

Figure 2 shows the level of demand for access, egress and interchange for the 2031 scenarios without and with NLE.

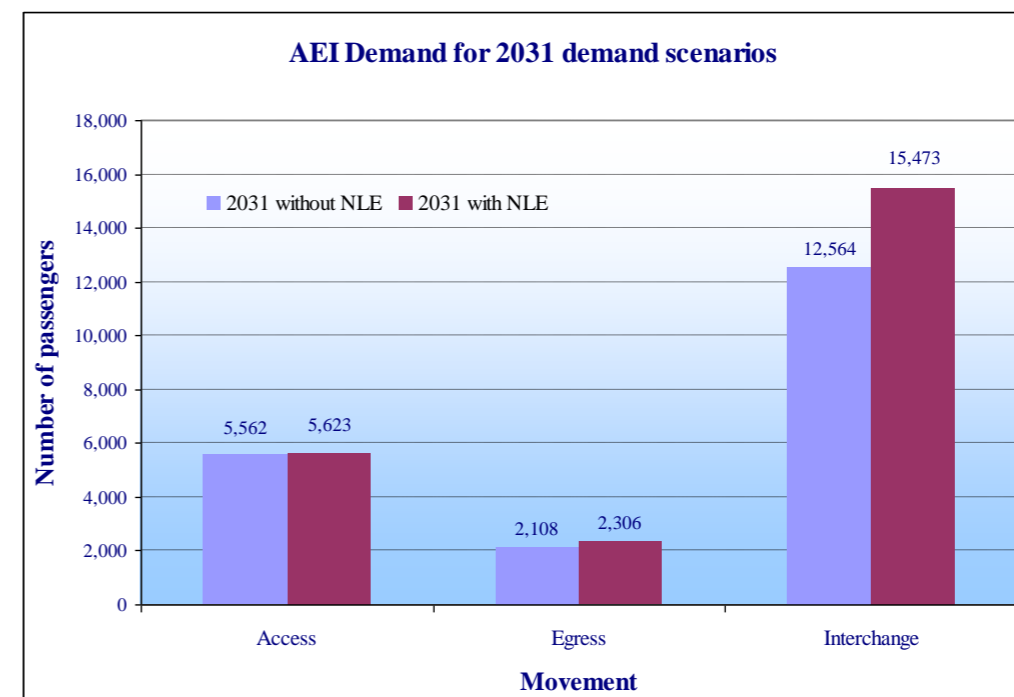


Figure 2 – 2031 access, egress and interchange demand without and with NLE

The introduction of two new stations with the NLE results in a 23% increase in total interchange demand compared to the 2031 demand scenario without NLE.

The additional interchange demand from platform 1 (Charing Cross NB) to platform 3 (Bank NB) movement is for the 2031 with NLE scenario 2,552 passengers during the three hours in the AM peak.

For the busiest 15 minutes⁵, this means an additional 335 passengers⁶ using the 4 cross passages from platform 1 to platform 3.

No significant differences are observed between the two 2031 scenarios for access and egress demand.

⁵ Based on RODS 2011, the busiest 15 minutes have been identified to be between 08:30-08:45

⁶ Station Planning Standards and Guidelines, Section 2.2 for the calculation of peak 15 minute demand based on a three hour total

4.2 Key modelling assumptions

4.2.1 Train service patterns

For the Current Year (2011) model, train service patterns were drawn from Working Timetable 53.

For the 2031 future year scenarios, Figure 1 shows the train service patterns that are expected to operate post-NLE. These have been summarised in Table 5 below.

The trains per hour going through platforms 1 and 3 for the northbound direction and platforms 2 and 4 for the southbound direction for each of the model scenarios (described in section 3) are as follows:

Trains per hour for current year (2011) model		07:00-08:00	08:00-09:00	09:00-10:00
Platform 1	Charing Cross Northbound	19	21	18
Platform 3	Bank Northbound	19	21	17
Platform 2	Charing Cross Southbound	16	20	17
Platform 4	Bank Southbound	17	19	18

Table 5 – Trains per hour assumptions for current year (2011) model

Trains per hour for future year (2031) models		07:00-08:00	08:00-09:00	09:00-10:00
Platform 1	Charing Cross Northbound	30	30	30
Platform 3	Bank Northbound	30	33	30
Platform 2	Charing Cross Southbound	30	30	30
Platform 4	Bank Southbound	30	30	30

Table 6 – Trains per hour assumptions for future year (2031) models⁷

In the AM Peak, 9 more trains in the peak hour will be scheduled to run compared to the Current Year scenario. This year is going to form the basis for comparison in terms of modelling outputs to the future year (2031) model scenarios with and without NLE.

⁷ This assumes 28 train per hour from Battersea and 2 trains per hour from Kennington on the Charing Cross branch,

4.2.2 Routings

The models developed take into account the mid-concourse and platform levels.

Figure 3 shows the extent of the model that is covered in the simulations of Kennington station operation in the base and future year scenarios.

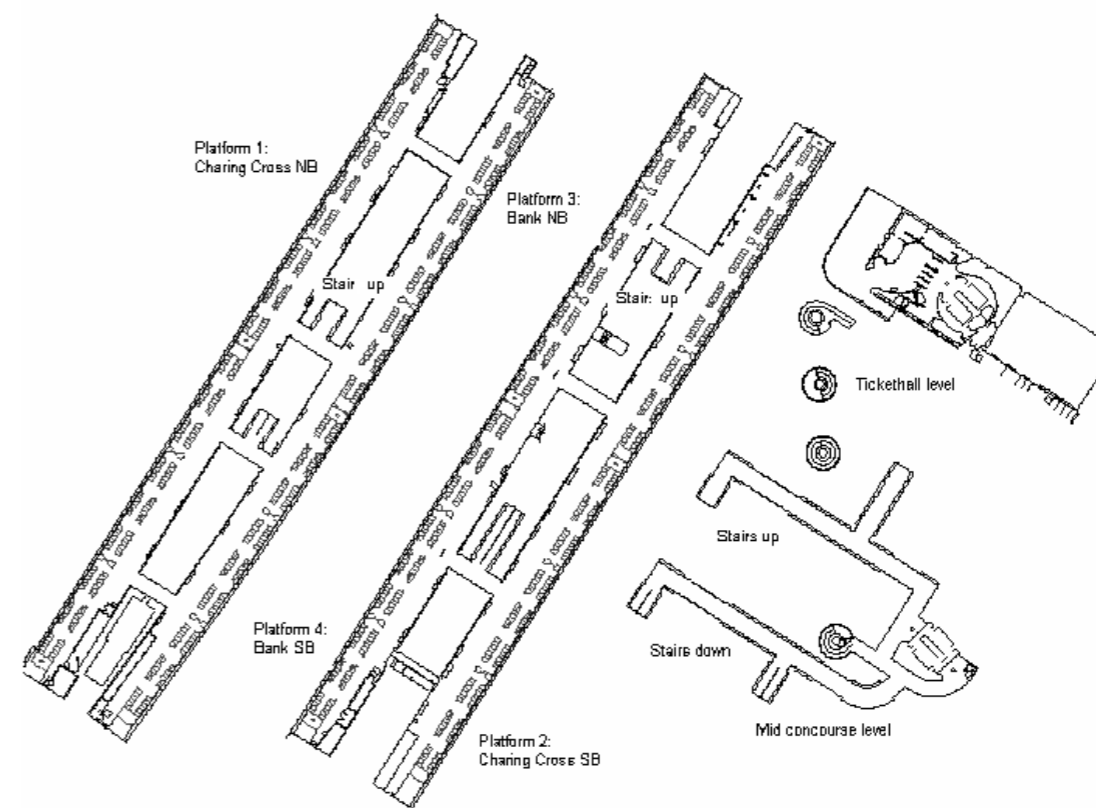


Figure 3 – Kennington station layout

Of the station areas shown in Figure 3, mid concourse and platform levels have been included in the developed models.

Lifts operate as through lifts at the mid concourse level. On exiting the lifts passengers move to the right and use the stairs to go down to the northbound or southbound platforms.

From platform level, exiting passengers use the stairs going up shown in Figure 3, as at mid concourse level this provides easier access to the lift entrance.

5 Dynamic modelling outputs

5.1 Station Planning Standards and Guidelines

The results from the modelling outputs from these scenarios have been analysed to understand the change to crowding levels in the cross passages and on the platforms.

The Station Planning Standards and Guidelines (SPSG)⁸ document is used as a reference guide to identify areas in the station that may not meet space planning criteria.

Space planning, as defined in the SPSG, is based upon passenger density and the concept of “levels of service”.

Figure 4 shows the correlation between “levels of service” (LoS) and the quality of the passenger’s space.

Level of service	Description (for queuing areas, walkways and stairways)
A	Free circulation.
B	Uni-directional flows and free circulation. Reverse and cross-flows with only minor conflicts.
C	Slightly restricted circulation due to difficulty in passing others. Reverse and cross-flows with difficulty.
D	Restricted circulation for most pedestrians. Significant difficulty for reverse and cross-flows.
E	Restricted circulation for all pedestrians. Intermittent stoppages and serious difficulties for reverse and cross-flows.
F	Complete breakdown in traffic flow with many stoppages.

Figure 4 – Levels of service description

The SPSG sets requirements and recommendations for space planning under a normal operation in order to minimise congestion and be resilient to train service disruption.

These requirements differ based on the station area, for example platforms, open concourses, cross passages, staircases and escalators.

Figure 5 highlights the LoS concept for the normal operations category of station operations per station area:

Station Area	LoS
Open concourses	B
Queuing for ticket hall facilities	C
Passageways- one-way	D
Passageways- two-way	C
Stairs- one-way	D
Stairs- two-way	C
Escalators	
Platforms	B/C

Figure 5 – Levels of service under normal operation per station area

The main assessment conducted on the modelling output results are with regards to crowding levels on cross passages and platforms.

The AM Peak in a northbound direction is forecaste to be the busiest time of the day at Kennington, therefore the analyses are focused on the northbound platforms and the four cross passages that connect them.

The section that follows, comments on modelling output results for each of the four models described in section 3. In relation to the SPSG requirements for normal operation LoS, the outputs commented on are for Cumulative Mean Density (CMD) and Cumulative High Density (CHD) maps.

⁸ Station planning and standards guidelines, 2012 edition

5.2 Modelling output results

5.2.1 Cumulative mean density (CMD) maps

5.2.1.1 CMD maps description

A Cumulative mean density map (CMD) shows the mean level of density registered in a station area within a defined period of time.

Fruin’s levels of service for walkways were used to produce the maps shown in this section.

LoS (Figure 4) is a measure by which transport planners determine the quality of the service on transportation infrastructure. LoS takes into account several factors and it is a measure of traffic density, rather than overall speed of the journey.

To visualize this information Legion uses a thermic map to report the density values associated with Fruin’s levels.

For LoS Walkways, the thermic map assigns a range of values of the measure “persons per square metre” on each of the six LoS (A to F).

Figure 6 shows this LoS map legend, as will appear next to the CMD maps that follow.

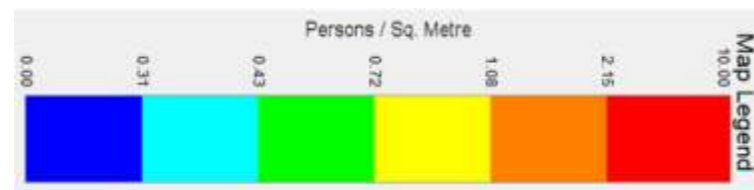


Figure 6 – Levels of service for walkways map legend

5.2.1.2 CMD maps time period

The CMD maps in this section are for the period 08:30 – 08:45.

The reason this fifteen minute period was selected is because it has been identified from RODS 2011 that 08:30-08:45 is the busiest period in the AM peak.

In the case of the future year (2031) model scenarios, arrival profiles per 15 minutes have been used as per RODS 2011. Therefore, for the future year (2031) models CMD maps are also extracted for the 08:30-08:45 period.

5.2.1.3 CMD maps current year (2011) model

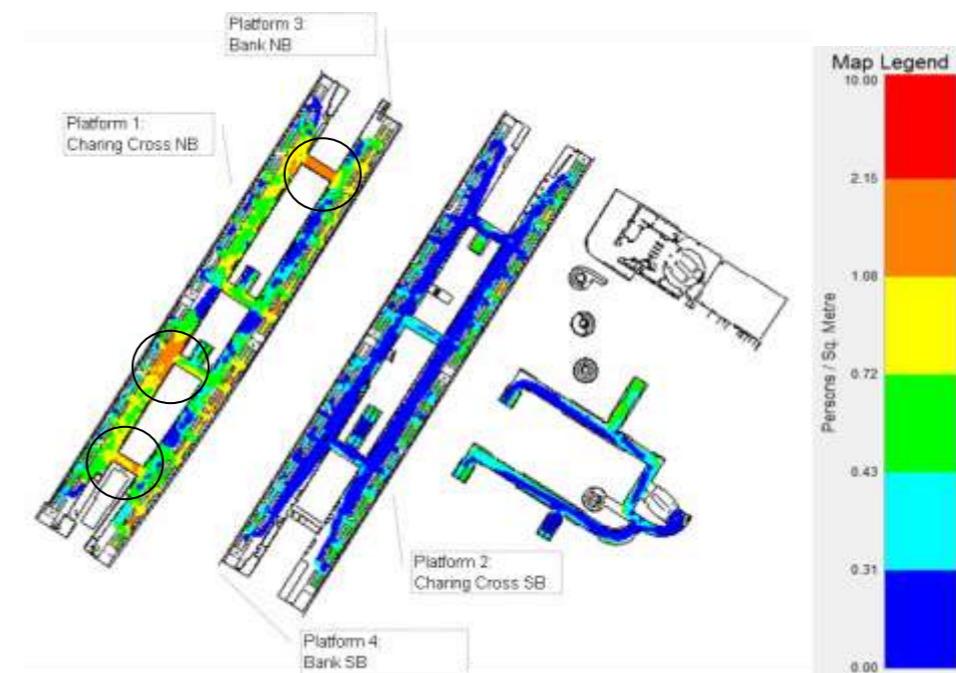


Figure 7 – CMD map 08:30-08:45, Current year (2011) model

The modelled current year (2011) train service pre the Northern Line Upgrade 1 (NLU1) delivers 4 trains going through platform 1 and 6 trains going through platform 3 (as per Working Timetable 53). This is for the peak 15 minutes of the AM peak (08:30-08:45).

The amount of people alighting from and interchanging through the northbound platforms (1 and 3) creates the crowding effect on the cross passages as is shown in Figure 7.

Circled areas show parts of the station where crowding reaches LoS D or E. These are for the cross passages on the northbound platforms.

5.2.1.4 CMD map 2031 without NLE

The origin-destination matrix for 2031 without NLE (Table 3) shows an increased demand on the Underground as travel grows in line with factors such as population and employment.

The effects of a more frequent train service (compared to current year-2011-model) is counterbalanced by the increased demand, producing crowding levels on the northbound platforms and the cross passages as is shown in Figure 8.

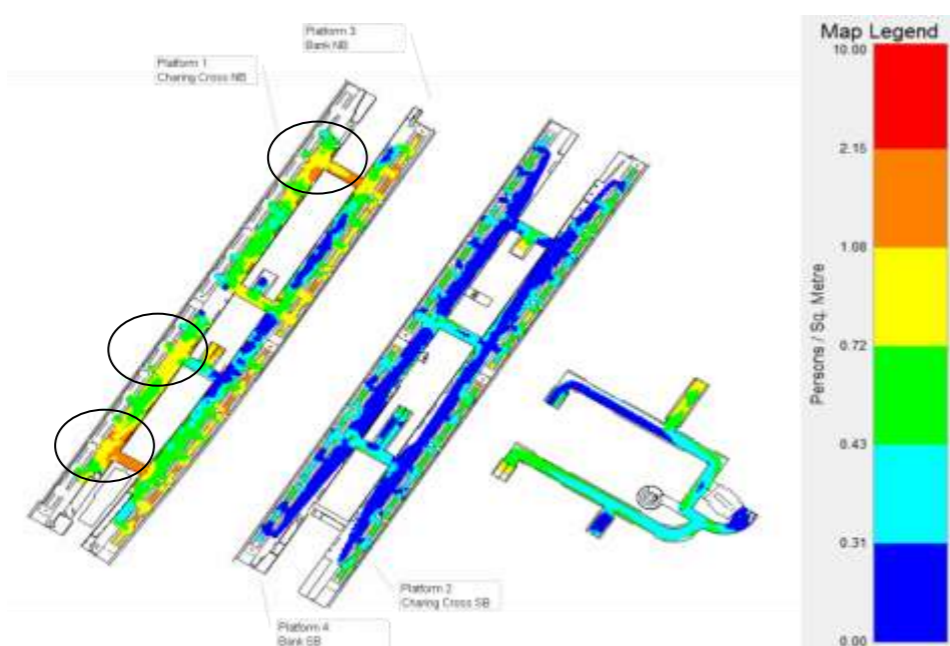


Figure 8 – CMD map 08:30-08:45, 2031 without NLE

The CMD map is for the peak 15 minutes (08:30-08:45) and highlights the effect that interchange demand (along with the number of passengers alighting and exiting) has on cross passage crowding in the 2031 without NLE scenario.

The effect is further seen on the platform areas that are close to the cross passages. These pinch points are circled in Figure 8 and show those areas where LoS is at level D or E.

Without the NLE in place, the main interchange movement is from platform 3 (Bank branch-northbound) to platform 1 (Charing Cross branch-northbound).

5.2.1.5 CMD map 2031 with NLE and current infrastructure

The introduction of two new stations on the extension of the Charing Cross branch post NLE, creates an additional movement from platform 1 (Charing Cross branch NB direction) to platform 3 (Bank NB).

This new interchange movement is created by passengers starting their journey from either Nine Elms or Battersea and arriving at Kennington on platform 1 (Charing Cross branch NB direction) and then switching on to the Bank branch by interchanging through the cross passages onto platform 3 (Bank branch NB direction).

During the peak 15 minutes (08:30-08:45) this means an additional 335⁹ passengers using the existing four cross passages to interchange between both branches.

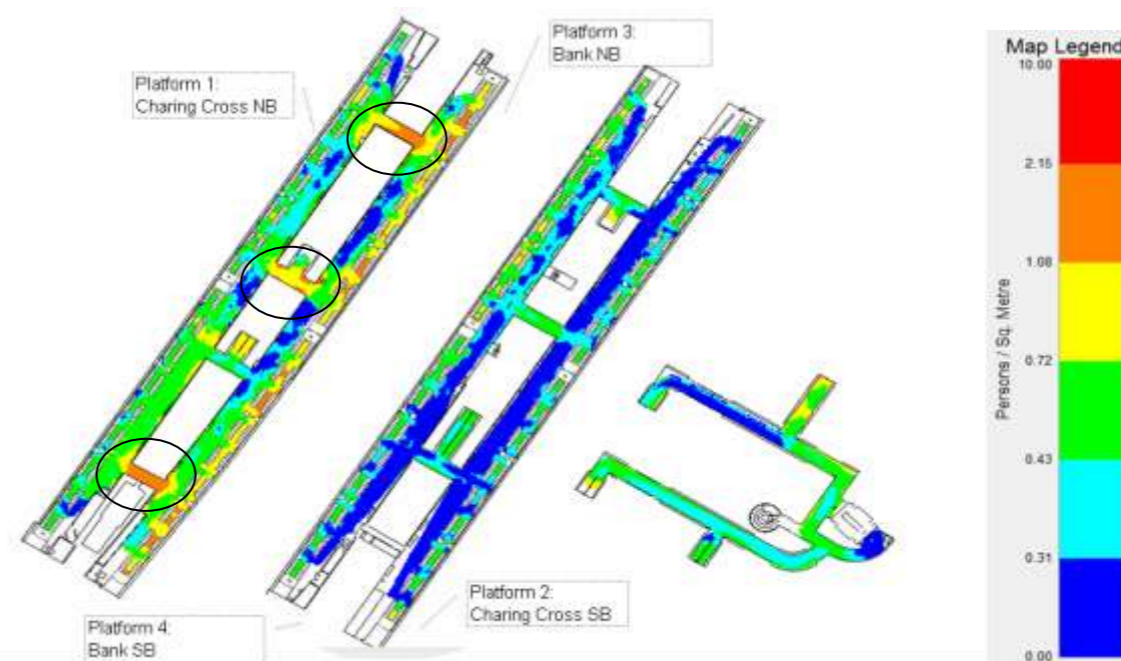


Figure 9 – CMD map 08:30-08:45, 2031 with NLE

Circled areas on Figure 9 highlight that crowding on the cross passages reaches LoS levels D or E.

⁹ Please refer to section 4.1.3 for an explanation of how this figure is obtained based on demand levels

5.2.1.6 CMD map 2031 with NLE and added cross passages

The CMD map in Figure 10 is from the 2031 with NLE model scenario with addition of two cross passages (in blue circle).

The addition of these two cross passages results in an improvement of crowding levels on interchange cross passages compared to the 2031 with NLE and current infrastructure scenario (Figure 9) as well as the 2031 without NLE scenario.

The CMD map that follows shows crowding levels for the peak 15 minutes in the AM peak, with two additional cross passages.

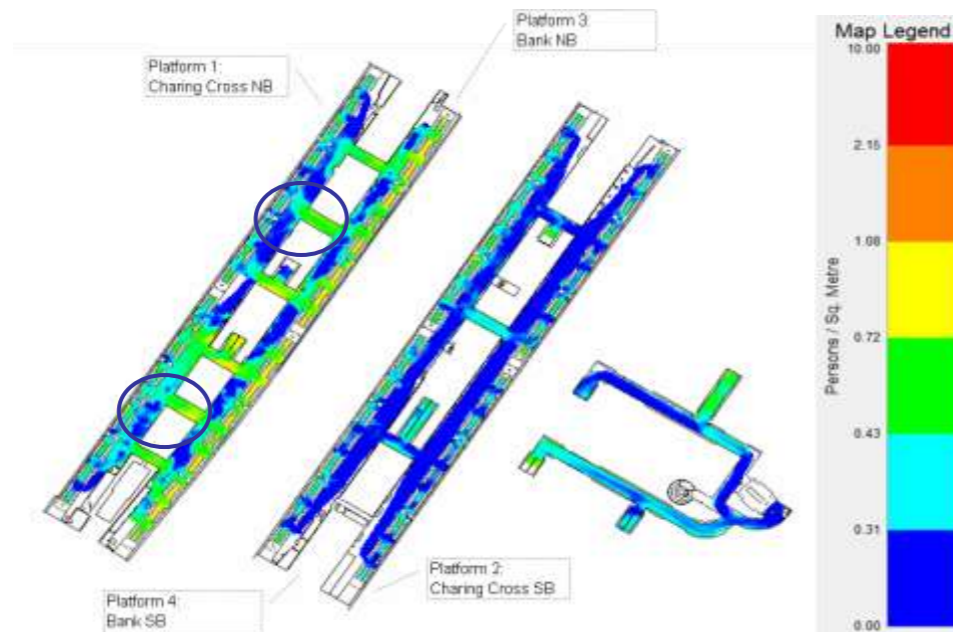


Figure 10 – CMD map 08:30-08:45, 2031 with NLE and added cross passages

It is clear from the CMD map of the peak 15 minutes that LoS C is maintained across the peak 15 minutes period for all six cross passages.

An improvement is also observed on platform crowding (compared to Figure 9 of the 2031 with NLE and current infrastructure scenario). With the additional interchange space there is less blocking back onto the platforms.

A scenario of six cross passages situated almost equidistantly along the northbound platforms (as is the assumption in the model) also improves distribution of passengers along the platforms.

5.2.2 Cumulative high density (CHD) maps

5.2.2.1 CHD maps description

CHD maps are used for identifying the duration of “hot-spots” within that station. This means areas where high levels of density are sustained. Essentially, it asks the question “is this design creating persistently uncomfortable crowd densities”?

The map legend for the CHD maps that follow show the duration of time within the peak 15 minutes (08:30-08:45) for which LoS in the simulated station operation remains above LoS for normal operation as set by the SPSG (as described in section 5.1 and Figure 5).



Figure 11 – CHD map legend

5.2.2.2 CHD map 2031 without NLE

For the duration of the peak 15 minutes (08:30-08:45) crowding levels are sustained above SPSG (Figure 5) normal operation levels for a total of 3 minutes on average.

This is identified for one of the four cross passages connecting the two northbound platforms as can be seen in the circled area in Figure 12.

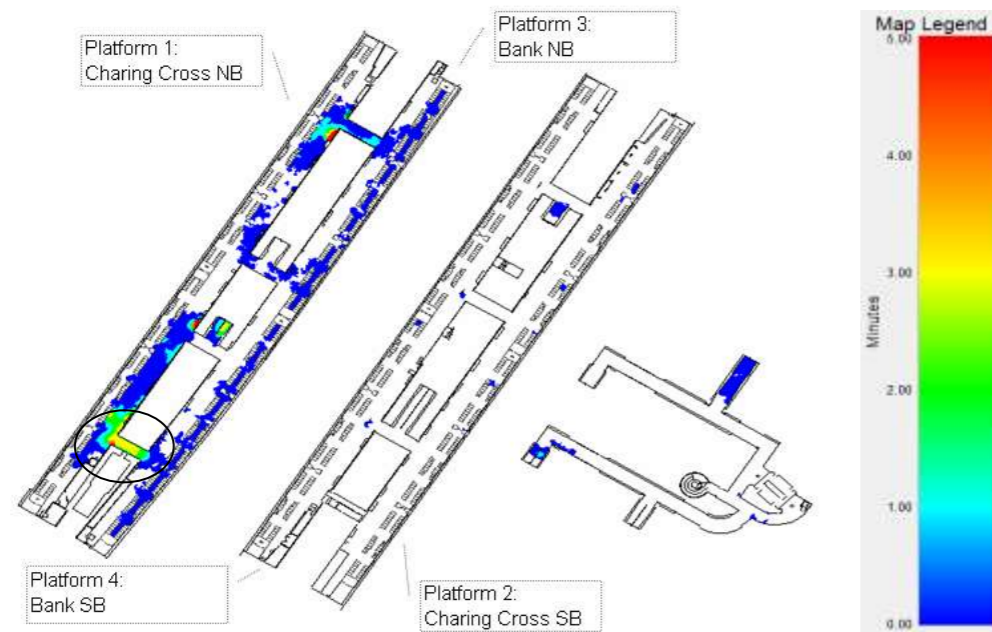


Figure 12 – CHD map 08:30-08:45, 2031 without NLE

5.2.2.3 CHD map 2031 with NLE and current infrastructure

It is clear from the CHD map for the 2031 with NLE scenario (Figure 13) that the additional interchange demand creates additional crowding (compared to the 2031 without NLE case-Figure 12) in all the interchange cross passages and the northbound platforms for a sustained period of time during the peak 15 minutes of the AM peak (08:30-08:45).

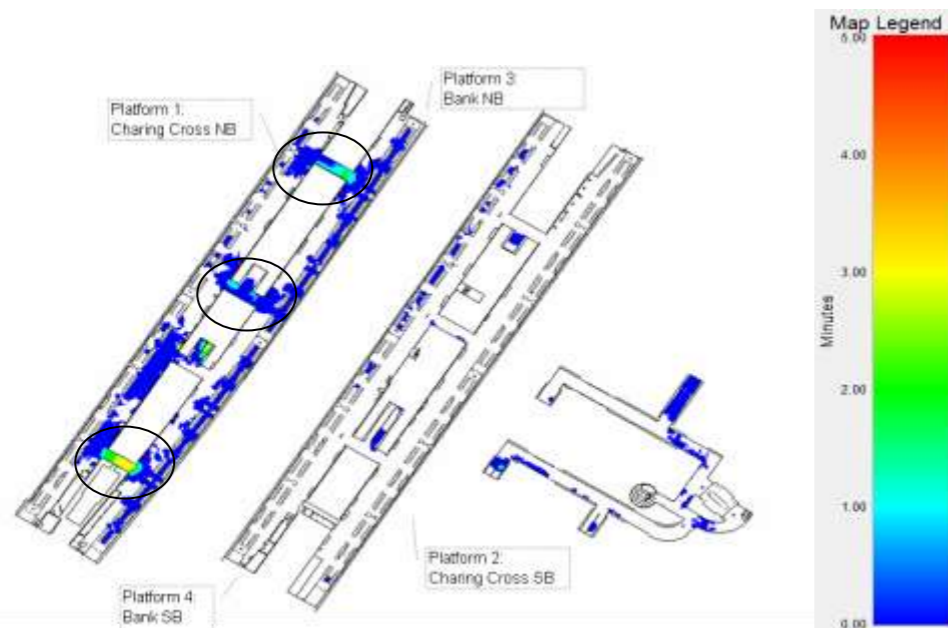


Figure 13 – CHD map 08:30-08:45, 2031 with NLE

More specifically, for the 2031 with NLE model scenario crowding on the interchange cross passages is sustained above the SPSPG normal operation criteria for an average of 3 minutes in the worst case and an average of 2 minutes for the two cross passages at the north end side of the northbound platforms. These areas are circled in Figure 13.

Compared to the 2031 without NLE scenario it is evident that interchange cross passages and platforms will experience more crowding as passengers interchange from both platforms (platform 1: CX NB to platform 3: Bank NB and vice versa). This is due to both the increased number of passengers interchanging plus that the flows are now two way and hence are meeting at times in these cross passages designed for a one way flow.

5.2.2.4 CHD map 2031 with NLE and added cross passages

Compared to the CHD map of the 2031 scenario with NLE and current layout (Figure 13), the addition of two cross passages leads to crowding levels during the peak 15 minutes which are not sustained above LoS C, as can be seen from the CHD map (Figure 14).

In other words, a design with 6 cross passages is projected to have sufficient capacity for interchange and so not lead to sustained high density levels in the interchange cross passages. This conclusion is the result of examination of the CMD and the CHD map simulation outputs for the 2031 with NLE scenario with current layout (Figure 13) and with the addition of two cross passages (Figure 14).

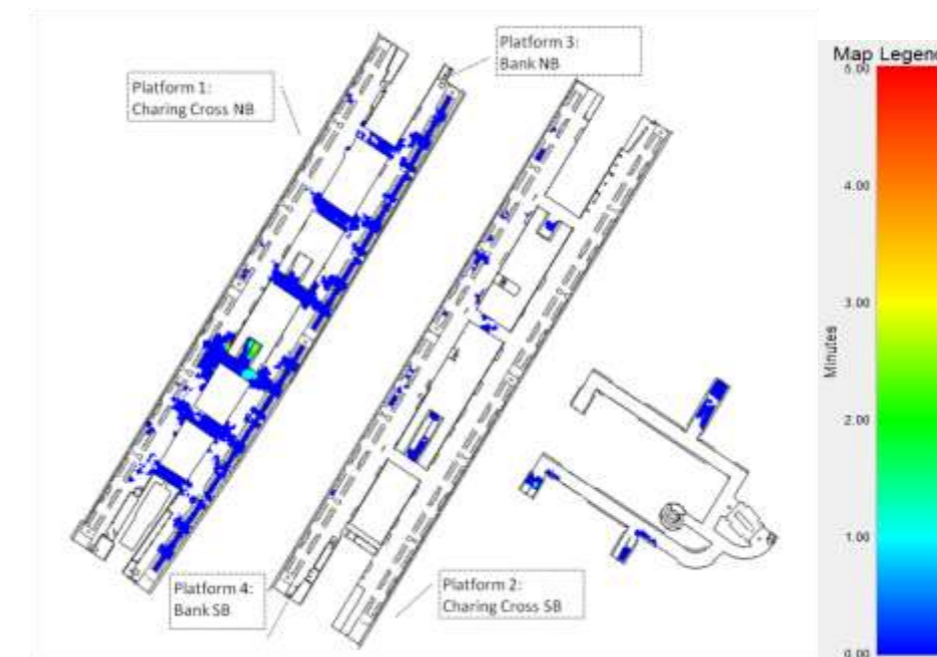


Figure 14 – CHD map 08:30-08:45, 2031 with NLE and added cross passages

6 Summary and conclusion

The dynamic models developed in Legion Spaceworks provided the basis of the analyses documented in this report. The purpose was to ascertain the impact of future year demand forecasts, changes to train service and the introduction of the NLE on cross passages crowding levels within Kennington station.

The main focus was on cross passages of the northbound platforms in the AM peak. This is considered to be the worst case in terms of the number of passengers interchanging at Kennington.

Interchange demand is high today (as shown from the current year model demand-Table 1) and is projected to increase in the future (Figure 2) even without the introduction of the NLE. Interchange demand will be higher again in the NLE with current infrastructure scenario leading to more congestion due to a new direction of passenger flow resulting in two way flows in the existing cross passages.

Analysis of the cumulative mean density and cumulative high density maps for the current year model (Figure 7) and the future year (2031) model without NLE (Figures 8 and 12) showed that crowding levels on the cross passages (northbound platforms) are sustainable though high during the peak 15 minutes (08:30-08:45).

The assessments were made in reference to SPSG's LoS for normal operation (Figure 5) per station area.

Similar assessments of the 2031 model with NLE clearly indicated the effect of the interchange demand increase (Figure 2) on interchange passageway crowding levels. Figures 9 and 13 (showing the CMD and CHD maps for the 2031 scenario with NLE) demonstrate that compared to the 2031 without NLE scenario LoS for interchange cross passages is either sustained at LoS E or increases from LoS C to D. The areas in question have been highlighted in the relevant figures.

The main reason for this effect in the with-NLE scenario is the fact that the introduction of the extension produces an additional interchange movement from the Charing Cross NB branch to the Bank NB branch. The effect of this on interchange passageway crowding is clearly visible from the crowding assessments undertaken in this report (and shown from the CMD maps in Figures 8 and 9) and further explained in sections 5.2.1 and 5.2.2.

Following on from these conclusions, a scheme was developed and a scenario was modelled to examine the extent to which the introduction of two additional cross passages linking the northbound platforms would alleviate crowding identified in the 2031 with-NLE scenario.

The cross passages were added in between the existing cross passages on the northbound platforms using CAD files obtained from within TfL. The design that

appears in the CMD and CHD maps of this scenario (Figures 10 and 14) is not yet a final design.

The results obtained from the examination of this scenario in the form of CMD and CHD maps clearly showed that with the addition of two cross passages on the northbound platforms, LoS reaches level C during the peak 15 minutes of the AM peak. Figure 5 shows LoS under normal operation per station area as suggested by the SPSG. This demonstrates that interchange efficiency at Kennington station is improved by the introduction of the NLE with two additional cross passages, even when compared to a scenario with the NLE.

It is recommended that additional cross passages are implemented if the NLE is to be built.

Appendix A: Modelling methodology

A.1 Source of drawings

Current layout

The station layout drawings that were used are for the current year (2011).

Layout with two added cross passages on northbound platforms

For the future year 2031 scenario with added cross passages, the current year station layout for the northbound platforms was used to add in the CAD two cross passages in between the existing ones.

The CAD that resulted from this is not the final design for the station under a scenario of additional cross passages on the northbound platforms.

A.2 Entity colours, speed and size

In the dynamic models developed in Legion Spaceworks, the entities have been coloured by destination. The following colours have been assigned to each entity. No entity level outputs have been included in this report.

Entity colour	Entity destination
	to street
	to platform 1
	to platform 2
	to platform 3
	to platform 4

Table 7 – Model entity colour legend

The entity speed and size used in all models was as defined by the “Station modelling with Legion: Best Practice Guide”, issued by LUL on 3 July 2009, based on separate research by both Legion and LUL.

Entity Grouping	Luggage settings	Average speed	Speed distribution
N	No luggage	1.53m/s	normal distribution
A	Large luggage	0.58m/s	fixed
B	Small luggage	0.80m/s	fixed
C	Medium luggage	1.53m/s	normal distribution
D	Large luggage	1.32m/s	normal distribution
E	Large luggage	1.37m/s	normal distribution

Table 8 – PRM entity types and speed

C5: Static Station Assessment:
Battersea Park

Environmental Statement

Volume II

Northern Line Extension

C5: Static station Assessment: Battersea Park

Report

April 2013

Prepared for:

Transport for London
4th Floor Albany House
55 Broadway
London SW1H 0BD

Prepared by:

Steer Davies Gleave
28-32 Upper Ground
London SE1 9PD

+44 (0)20 7910 5000
www.steerdaviesgleave.com

CONTENTS

1	INTRODUCTION	1
	Key	1
	Areas for Further Analysis	1
2	BATTERSEA PARK STATION	1
	Assumptions.....	2
	Train Services.....	4
	Platform Length.....	4
	Provision of Underground Ticketing System (UTS) Gateline.....	4
	Provision of TIWs and POMs	6
	Provision of Stairs and Corridors within the Station	6
	Run-Offs	7
	Platform Width	7
	Platform Exit Width	8
3	SUMMARY AND CONCLUSION	8

FIGURES

Figure 2.1	Battersea Park Station	2
Figure 2.2	UTS Gates at Battersea Park Station.....	5
Figure 2.3	TIWS and POMS at Battersea Park Station	6

TABLES

Table 1	2012 3 Hour Passenger Flows - without NLE	3
Table 2	2012 Average Peak Flows per minute (15 min peak) - without NLE	3
Table 3	2012 Average Peak Flows per minute (5 min peak) - without NLE..	3
Table 4	2031 3 Hour Passenger Flows - without NLE	3
Table 5	2031 Average Peak Flows per minute (15 min peak) - without NLE	3
Table 6	2031 Average Peak Flows per minute (5 min peak) - without NLE..	3
Table 7	2031 3 Hour Passenger Flows - with NLE	4
Table 8	2031 Average Peak Flows Per Minute (15 Min peak) - with NLE	4
Table 9	2031 Average Peak Flows per minute (5 Min peak) - with NLE	4
Table 10	Provision of UTS Gates.....	5
Table 11	Provision of Concourse Area (UnPaid Side)	5
Table 12	Provision of TIWs and POMs.....	6
Table 13	Circulation Within the Station - Stair and Corridor Width	6
Table 14	Minimum Run-Off Lengths Within the Station	7
Table 15	Northbound Platform - Minimum Platform Width Requirements....	7
Table 16	Southbound Platform - Minimum Platform Width Requirements....	7
Table 17	Northbound Platform - Minimum Exit Width Requirements.....	8
Table 18	Southbound Platform - Minimum Exit Width Requirements.....	8

1 Introduction


1.1 Steer Davies Gleave has been commissioned by Transport for London (TfL) to consider passenger movements through Battersea Park Station (Network Rail). This station may be affected by additional passenger flows at the station level due to the Northern Line Extension (NLE) and associated development.

1.2 For the purpose of this assessment, three scenarios have been considered:


- 2012 without NLE;
- 2031 without NLE; and
- 2031 with NLE (also includes impacts from the associated development).


Key

1.3 For the purpose of this assessment, the following symbols have been used:

 This symbol has been used to identify where station infrastructure does not meet minimum design standards for new stations regardless of the impacts of the NLE.

The following symbols indicate whether the additional passenger flows brought by the NLE and associated developments will have an impact on the station:

 This symbol signifies the NLE scheme and associated development **will not** have a noticeable impact on the station (compared to the 2031 without NLE scenario)

 This symbol signifies the NLE scheme and associated development **will** have a noticeable impact on the station (compared to the 2031 without NLE scenario)

Areas for Further Analysis

1.4 The following factors, infrastructure and scenarios have not been considered here but could be considered in future assessments:

- Gateline widths or provision of additional infrastructure within the station not associated with changes in forecast passenger demand;
- Provision of smart card readers;
- Station operation during special events;
- Head room within the station;
- Provision of Ticket Issuing Window (TIW) or Passenger Operated Machines (POM) based on actual sales;
- Impact of secondary income facilities e.g. vending machines or telephones;
- Persons of reduced mobility;
- Passengers point of entry/exit to/from the station;
- PM peak hour assessment; and
- Emergency evacuation of the station.

2 Battersea Park Station

2.1 This technical note considers the impact of the Northern Line Extension (NLE) and associated development on pedestrian movements at Battersea Park Station, a Network Rail (NR) station (see Figure 2.1).

2.2 This is a static assessment of the station, which comprises spreadsheet based modelling, providing a direct comparison to the ratios and guidelines presented in station design guidelines.

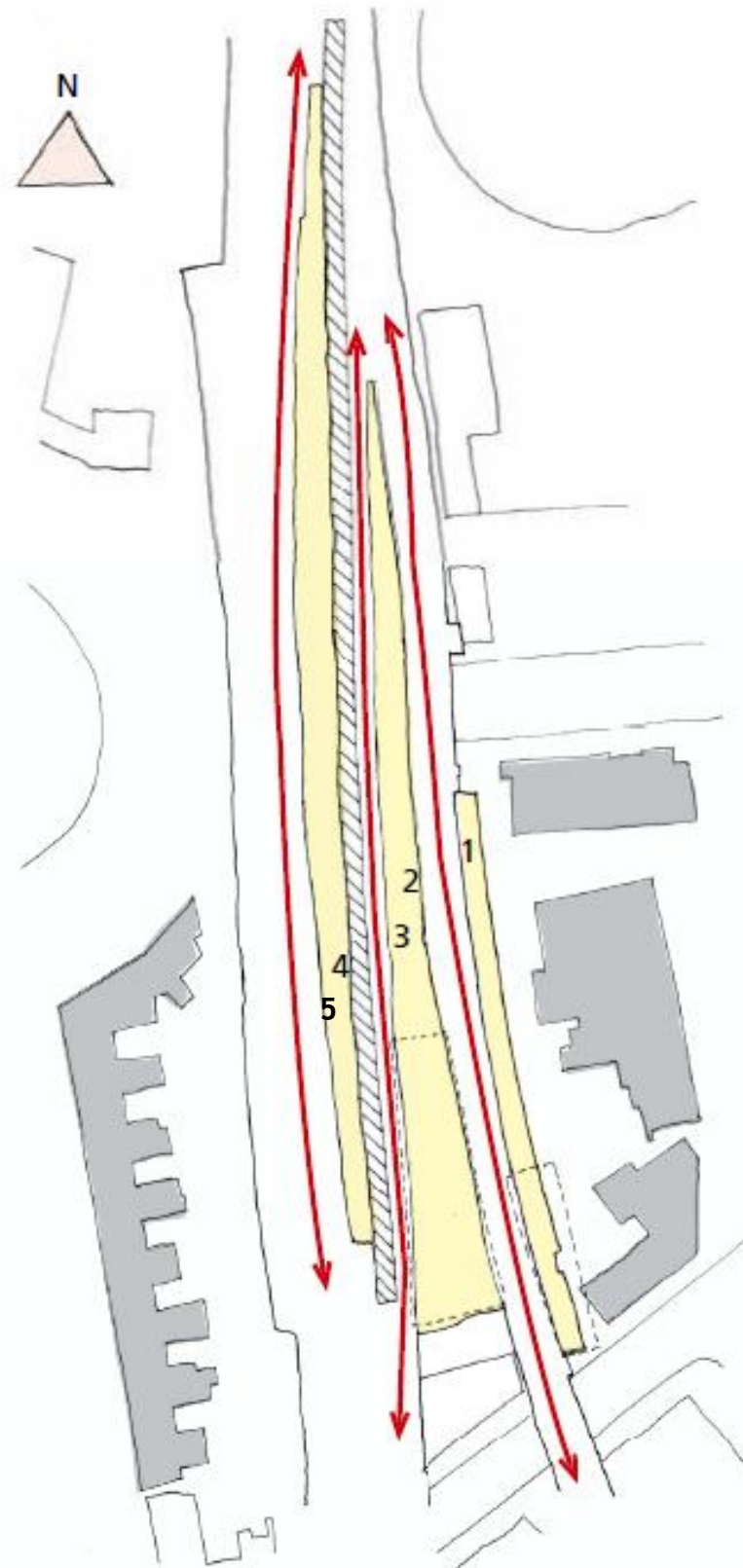
2.3 Following discussions with TfL it has been agreed that the station operation is more similar to a metro service than a typical national rail station. Passengers in the AM peak hour are likely to be regular users, with knowledge of the station environment. The high frequency service will also result in boarding passengers entering and going straight to their platform, rather than waiting on the concourse for a given service. For the purpose of this assessment, London Underground Limited's (LUL) 'Station Planning Standards and Guidelines' (SPSG) has been used to assess the station.

2.4 Measurements from within the station have been obtained from a site visit undertaken on Saturday 30th March 2013 and from available mapping.

2.5 It should be noted that this report does not assess the infrastructure of the existing station against LUL's guidelines; it assesses the impact of additional passenger demand as a result of the NLE and associated development enabled by the NLE on design elements which are dependent on passenger flows.

2.6 All assessments are based on the AM peak hour flows extracted from the Regional Railplan Model factored using 2012 survey data according to the LUL combination forecasting methodology.

FIGURE 2.1 BATTERSEA PARK STATION



Assumptions

- 2.7 The following assumptions have been used to determine the performance of the station.
- 2.8 Passenger flows are based on the AM peak hour flows from the Regional Railplan Model factored using 2012 survey data according to LUL combination forecasting methodology.
- 2.9 Overall forecast passenger volumes at Battersea Park are forecast to remain broadly constant between 2012 and 2031 without the NLE. This reflects London's population and employment growth as well as the proposed transport network improvements in the local area, such as increases to bus service frequencies and new routes to serve the Vauxhall Nine Elms Battersea area, as well as wider network improvements such as Underground and National Rail service enhancements. These changes will increase the relative attractiveness of these routes and services compared to 2012.
- 2.10 With the NLE (2031), demand increases over the without NLE scenario, reflecting the increased demand to and from the Battersea Power Station development.
- 2.11 Measurements from within the station have been obtained from a site visit undertaken on Saturday 30th March 2013 and from available mapping.
- 2.12 Historic and/or observed information was not available for this assessment. In order to obtain peak minute flows, London Underground Limited's (LUL) 'Station Planning Standards and Guidelines' (SPSG) peak 3 hour conversion factors have been applied where necessary.
- 2.13 Passenger flows for the three scenarios are provided in Tables 1-9.

2012 Passenger Flows - without NLE

TABLE 1 2012 3 HOUR PASSENGER FLOWS - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	424	923	1,347
Southbound Service	384	205	589
TOTALS	808	1,128	1,936

Source: TfL

TABLE 2 2012 AVERAGE PEAK FLOWS PER MINUTE (15 MIN PEAK) - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	3.4	7.5	10.9
Southbound Service	3.1	1.7	4.8
TOTALS	6.5	9.1	15.7

Source: TfL

TABLE 3 2012 AVERAGE PEAK FLOWS PER MINUTE (5 MIN PEAK) - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	4.1	9.0	13.1
Southbound Service	3.7	2.0	5.7
TOTALS	7.9	11.0	18.8

Source: TfL

2031 Passenger Flows - without NLE

TABLE 4 2031 3 HOUR PASSENGER FLOWS - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	252	1,256	1,508
Southbound Service	372	44	416
TOTALS	624	1,300	1,924

Source: TfL

TABLE 5 2031 AVERAGE PEAK FLOWS PER MINUTE (15 MIN PEAK) - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	2.0	10.2	12.2
Southbound Service	3.0	0.4	3.4
TOTALS	5.1	10.5	15.6

Source: TfL

TABLE 6 2031 AVERAGE PEAK FLOWS PER MINUTE (5 MIN PEAK) - WITHOUT NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	2.4	12.2	14.7
Southbound Service	3.6	0.4	4.0
TOTALS	6.1	12.6	18.7

Source: TfL

C5: Static station Assessment: Battersea Park

2031 Passenger Flows - with NLE

TABLE 7 2031 3 HOUR PASSENGER FLOWS - WITH NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	241	1,845	2,086
Southbound Service	427	37	464
TOTALS	668	1,882	2,550

Source: TfL

TABLE 8 2031 AVERAGE PEAK FLOWS PER MINUTE (15 MIN PEAK) - WITH NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	2.0	14.9	16.9
Southbound Service	3.5	0.3	3.8
TOTALS	5.4	15.2	20.7

Source: TfL

TABLE 9 2031 AVERAGE PEAK FLOWS PER MINUTE (5 MIN PEAK) - WITH NLE

	Station Inbound	Station Outbound	TOTAL
Northbound Service	2.3	17.9	20.3
Southbound Service	4.2	0.4	4.5
TOTALS	6.5	18.3	24.8

Source: TfL

Train Services

2.14 For the purpose of this assessment, it has been assumed there are **10 northbound services** and **9 southbound services** from Battersea Park Station in the AM peak hour. This is based on the existing service provision and, at this time, there are no committed plans to increase services in this corridor before 2031.

Platform Length

2.15 For the purpose of this assessment the following usable platform lengths have been assumed:

- Platform 1 - 92 metres;
- Platform 2 - 85 metres (maximum of 150 metres);
- Platform 3 - 154 metres;
- Platform 4 - 158 metres; and
- Platform 5 - 164 metres.

2.16 Platforms 3, 4 and 5 are to be lengthened to accommodate 10 car trains, increasing the platform lengths to at least 200 metres. For the purpose of this assessment, the reduced platform lengths have been assumed. This is considered a worst case scenario, as passengers will be queuing over a shorter platform length.

2.17 For the purpose of these assessments, carriages have been assumed to measure 20 metres in length, with all northbound services using platform 4 and all southbound services using platform 3.

Provision of Underground Ticketing System (UTS) Gateline

2.18 Table 10 presents the assessment of the UTS ticket gate requirements for passenger entry and exit during the AM peak hour. The existing gateline is shown in Figure 2.2.

TABLE 10 PROVISION OF UTS GATES

		2012	2031 Without NLE	2031 With NLE
Current/Future Planned Provision		3	3	3
Modelled Requirement	Entry Gates	1	1	1
	Exit Gates	2	2	3
Provision Required by SCAG		4	4	5

Source: TfL

2.19 Table 10 shows that the existing layout with three gates does not comply with LUL standards now or in 2031 without the NLE. For 2031 with NLE, two additional UTS Gates should be provided for a total of five.

FIGURE 2.2 UTS GATES AT BATTERSEA PARK STATION



Concourse Area (Unpaid Side)

2.20 Table 11 presents the assessment of the concourse area requirements on the unpaid side of the gateline. This is based on peak passenger demand during the AM peak hour.

TABLE 11 PROVISION OF CONCOURSE AREA (UNPAID SIDE)

	2012	2031 Without NLE	2031 With NLE
Peak 15 minute station entry and exit (persons)	235.2	233.8	309.8
Provision Required by SPSPG (m ²)	15.7	15.6	20.7
Provision Available (m ²)	>70	>70	>70

Source: TfL

2.21 Table 11 shows there is sufficient area available for passengers to enter and exit the stations within LUL's target levels for passenger comfort.

Provision of TIWs and POMs

2.22 Table 12 presents the assessment of the number of Ticket Issuing Windows (TIW) and Passenger Operated Machines (POM) required, based on LUL guidelines. It should be noted that these have been assessed based on 'City' category of station, contained within SPSG, rather than actual sales figures at the station. The existing arrangement at the station is shown in Figure 2.3.

TABLE 12 PROVISION OF TIWS AND POMS

		2012	2031 Without NLE	2031 With NLE
Current/Future Provision	TIW	1	1	1
	POM	2	2	2
Provision required by SPSG	TIW	1	1	1
	POM	1	1	1

Source: TfL

2.23 The current provision of one TIWs and two POMs within the station will be able to accommodate future passenger demand (based on figures provided for 'City' category of station) in SPSG.

2.24 The positioning of any new Gatelines, POMs and TIWs should take into account the required queuing and run-off areas.

FIGURE 2.3 TIWS AND POMS AT BATTERSEA PARK STATION



Provision of Stairs and Corridors within the Station

2.25 Table 13 present the assessment of minimum stair and corridor widths required within the station for passenger circulation in the AM peak hour.

TABLE 13 CIRCULATION WITHIN THE STATION - STAIR AND CORRIDOR WIDTH

		2012	2031 Without NLE	2031 With NLE
Current/Forecast Peak Minute Two Way Flow (pers/min)		15.7	15.6	20.7
Current	Minimum Corridor Width Provided (m)	1.7	1.7	1.7
	Minimum Stair Width Provided (m)	1.4	1.4	1.4
Modelled Requirement	Minimum Corridor Width (m)	1.0	1.0	1.1
	Minimum Stair Width (m)	0.6	0.6	0.7
Required by SPSG	Minimum Corridor Width (m)	2.0	2.0	2.0
	Minimum Stair Width (m)	2.4	2.4	2.4

Source: TfL

2.26 Table 13 shows future passenger demand can be accommodated in the station for both with and without NLE scenario. It should be noted this is an assessment of the minimum widths required based on forecast demand and is **not** based on LUL's minimum standard required for a station.

2.27 LUL requires a minimum width of 2.0 metres between finishes for a corridor.

2.28 LUL requires a minimum width of 2.4 metres between handrails for a two-way staircase and 2.0 metres for a one-way staircase.

Run-Offs

- 2.29 SPSPG describes the purpose of run-offs as 'to 'pull' passengers away from escalators, UTS gates and staircases to provide a clear landing area for following passengers'. These are clear areas that provide passengers with additional time to make decisions on their follow on journey.
- 2.30 For the 2012 and 2031 without NLE scenarios, and for 2031 with NLE with associated development, the peak hour entry or exit passenger demand (AM peak hour) through the station is less than 1,000 passengers. The flow can therefore be described as a 'light flow'.
- 2.31 Table 14 presents the assessment of minimum run-off distance required between different elements within the station, in the AM peak hour.

TABLE 14 MINIMUM RUN-OFF LENGTHS WITHIN THE STATION

	2012	2031 Without NLE	2031 With NLE
Staircase to Gateline (m)	6.0	6.0	6.0
Staircase to Passageway (m)	4.0	4.0	4.0
Gateline to Street (m)	6.0	6.0	6.0

Source: TfL

- 2.32 The existing layout provides sufficient run-off between the staircase and the concourse, and from the gateline to the street.
- 2.33 The existing layout comprises stairs from platforms 2 and 3 leading to a landing/passage. The landing at this level is less than the minimum recommended width of 2.0 metres.
- 2.34 The run off area between the concourse stairs, intermediate landing and stairs to platforms 2 and 3 do not meet LUL standards of a minimum 2.0 metre wide landing.

Platform Width

- 2.35 Tables 15 and 16 present the minimum platform width requirements based on the forecast passenger demand in the AM peak hour for both the Northbound and Southbound Platforms.

TABLE 15 NORTHBOUND PLATFORM - MINIMUM PLATFORM WIDTH REQUIREMENTS

	2012	2031 Without NLE	2031 With NLE
Peak Headway Platform Person Load	65.5	73.3	101.4
Minimum Platform Width Required (m)	1.5	1.5	1.7

Source: TfL

TABLE 16 SOUTHBOUND PLATFORM - MINIMUM PLATFORM WIDTH REQUIREMENTS

	2012	2031 Without NLE	2031 With NLE
Peak Headway Platform Person Load	31.8	22.5	25.1
Minimum Platform Width Required (m)	1.2	1.2	1.2

Source: TfL

- 2.36 The platform widths provided exceed the minimum width required to enable passenger movement along the platform.
- 2.37 Both the Northbound and Southbound platforms are platform islands. LUL has a minimum standard width of 6.0 metres for these types of platform.

C5: Static station Assessment: Battersea Park

Platform Exit Width

2.38 Tables 17 and 18 present the minimum platform exit width requirements based on the forecast passenger demand in the AM peak hour for both the Northbound and Southbound Platforms.

TABLE 17 NORTHBOUND PLATFORM - MINIMUM EXIT WIDTH REQUIREMENTS

	2012	2031 Without NLE	2031 With NLE
Peak One Minute Platform Person Load	10.9	12.2	16.9
Minimum Platform Stair Exit Width Required (m)	0.4	0.4	0.6

Source: TfL

TABLE 18 SOUTHBOUND PLATFORM - MINIMUM EXIT WIDTH REQUIREMENTS

	2012	2031 Without NLE	2031 With NLE
Peak One Minute Platform Person Load	4.8	3.4	3.8
Minimum Platform Stair Exit Width Required (m)	0.2	0.1	0.1

Source: TfL

2.39 The platform exit widths provided for the Northbound and Southbound demand can accommodate forecast passenger demand in the AM peak hour.

3 Summary and Conclusion

- 3.1 Overall forecast passenger volumes at Battersea Park are forecast to remain broadly constant between 2012 and 2031 without the NLE. This reflects London’s population and employment growth as well as the proposed transport network improvements in the local area, such as increases to bus service frequencies and new routes to serve the Vauxhall Nine Elms Battersea area, as well as wider network improvements such as Underground and National Rail service enhancements. These changes will increase the relative attractiveness of these routes and services compared to 2012.
- 3.2 With the NLE (2031), demand increases over the without NLE scenario, reflecting the increased demand to and from the Battersea Power Station development enabled by the NLE.
- 3.3 In order to accommodate this increased demand in the AM peak hour, an additional two UTS ticket gates should be provided.
- 3.4 The existing infrastructure can accommodate the forecast increase in passenger demand in the AM peak hour. It should be noted that in some instances the station infrastructure may not meet design standards for new stations but the NLE (and associated development) does not have a significant impact on station operation compared with the 2031 without NLE scenario.
- 3.5 A summary of the assessment is provided below for each component of the station infrastructure.

Location	Status	Comment
UTS Gates	<input checked="" type="checkbox"/> <input type="radio"/>	Existing provision is below guideline provision for 2012 and 2031 without NLE. 2031 with NLE and associated development will require two more ATG ticket gates
Concourse Area (Unpaid)	<input checked="" type="checkbox"/>	Sufficient concourse area in the unpaid side of the gateline is provided in all scenarios
TIW and POM	<input checked="" type="checkbox"/>	Using LUL’s ‘City’ category of station, there is sufficient provision for all scenarios.
Stairs and Corridors within the Station	<input checked="" type="checkbox"/> <input type="radio"/>	The existing dimensions can accommodate forecast passenger demand in all scenarios
Run-Offs	<input checked="" type="checkbox"/> <input type="radio"/>	2031 with NLE does not have an impact on run off length.
Platform Widths	<input checked="" type="checkbox"/> <input type="radio"/>	Platform widths at the existing station can accommodate forecast passenger flows in all scenarios.
Platform Exit Widths	<input checked="" type="checkbox"/> <input type="radio"/>	Platform exit widths at the existing station can accommodate forecast passenger flows in all scenarios.

CONTROL SHEET

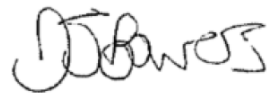
Project/Proposal Name Northern Line Extension
Document Title C5: Static station Assessment: Battersea Park
Client Contract/Project No. NLE
SDG Project/Proposal No. 22469105

ISSUE HISTORY

Issue No.	Date	Details
1	12 April 2013	Final
2	22 April 2013	Final

REVIEW

Originator Alex McCarthy
Other Contributors Grant Fletcher
Review by: Print David Bowers
Sign



DISTRIBUTION

Client: Transport for London
Steer Davies Gleave: DJB, PDT





Buro Happold

CORDEROY

Halcrow

JOHN McASLAN + PARTNERS



 **steer davies gleave**

studiodareARCHITECTS

URS

