OOPR
OLD OAK & PARK ROYAL
WALKING, CYCLING &
PUBLIC REALM

PERS Audit

APPENDIX TO MAIN REPORT
APRIL 2017

5th studio







Old Oak & Park Royal Walking, Cycling, Streets and Public Realm Strategy: PERS audit

April 2017

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TRANSPORT PLANNING AT A HUMAN SCALE

Executive Summary

What is PERS?

PERS (Pedestrian Environment Review System) is an audit tool used to assess the level of service and quality provided across a range of pedestrian environments.

Checklists are completed on street to obtain a comprehensive understanding of what it's like to experience an area on foot.

General impressions

The OPDC area covers the Old Oak Common and Park Royal Opportunity Areas in the Mayor's London Plan (2015). While the Old Oak Common will be comprehensively redeveloped, the Park Royal employment area is expected to grow though incremental densification. While Park Royal is a vibrant and diverse area, people accessing its businesses on foot from the surrounding public transport hubs currently experience a walking environment that is unpleasant and monotonous in places, and unsafe and hostile in others.

The results of the PERS audit are negative overall. PERS uses a red, amber, green (RAG) scoring system to summarise the aggregated and weighted results of the audits. The PERS route and link audit results for the study area are all scored as amber or red. This means that while individual review parameters were scored positively, the majority of the aggregated PERS audits were scored as average or negative in balance.

Key findings

- The study area is predominantly industrial in character at present. The key walking routes audited include the routes between Underground station locations on edge of the study area and the main employment areas. Except for the immediate surroundings of the stations these pedestrian routes all have low to medium pedestrian flows by London standards.
- With a high rate of violent and sexual crimes reported in the area, actual and perceived risks to personal security are of concern. Several of the key routes from railway stations involve links that are not overlooked at all and/or include links through unattractive tunnels or subways.
- The trafficked streets through the study area all carry a high proportion of HGVs and LGVs, creating an environment of noise and fumes.
- The road safety statistics indicate that the actual pedestrian casualty rate is low as can be expected with the low footfall. Yet there were two pedestrian fatalities in five years on the main roads bounding the study area, and a high proportion of the pedestrian casualties in it were classed as serious. Shocking examples of aggressive driving behaviour that wouldn't be tolerated in parts of London with a greater pedestrian presence are frequently observed.
- The western side of Park Royal is dominated by large big box units that do not front the streets. These areas tend to offer acceptable footway infrastructure but a poor quality of environment for walking. The presence of large roundabouts with multiple lanes and wide turning radii makes crossing difficult at key junctions, and does not offer any sense of pedestrian ownership of the space.
- The eastern side of Park Royal has many smaller street-facing industrial units. These areas tend to feel more human in scale but in many cases the footway does not meet basic requirements due to conflicting uses (parking, servicing).
- There are several key station access links in the study area that do not provide step-free access, and several other links in the study area do not offer step-free access as a result of the lack of dropped kerbs or poor surface quality at vehicle crossovers.
- Legibility for pedestrians is challenging since not all of the routes to/from the surrounding stations are intuitive, due to the sheer number of businesses in the area, and due to the lack of any formal pedestrian wayfinding.







Old Oak & Park Royal Walking, Cycling, Streets and Public Realm Strategy: PERS audit

January 2017

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Version control

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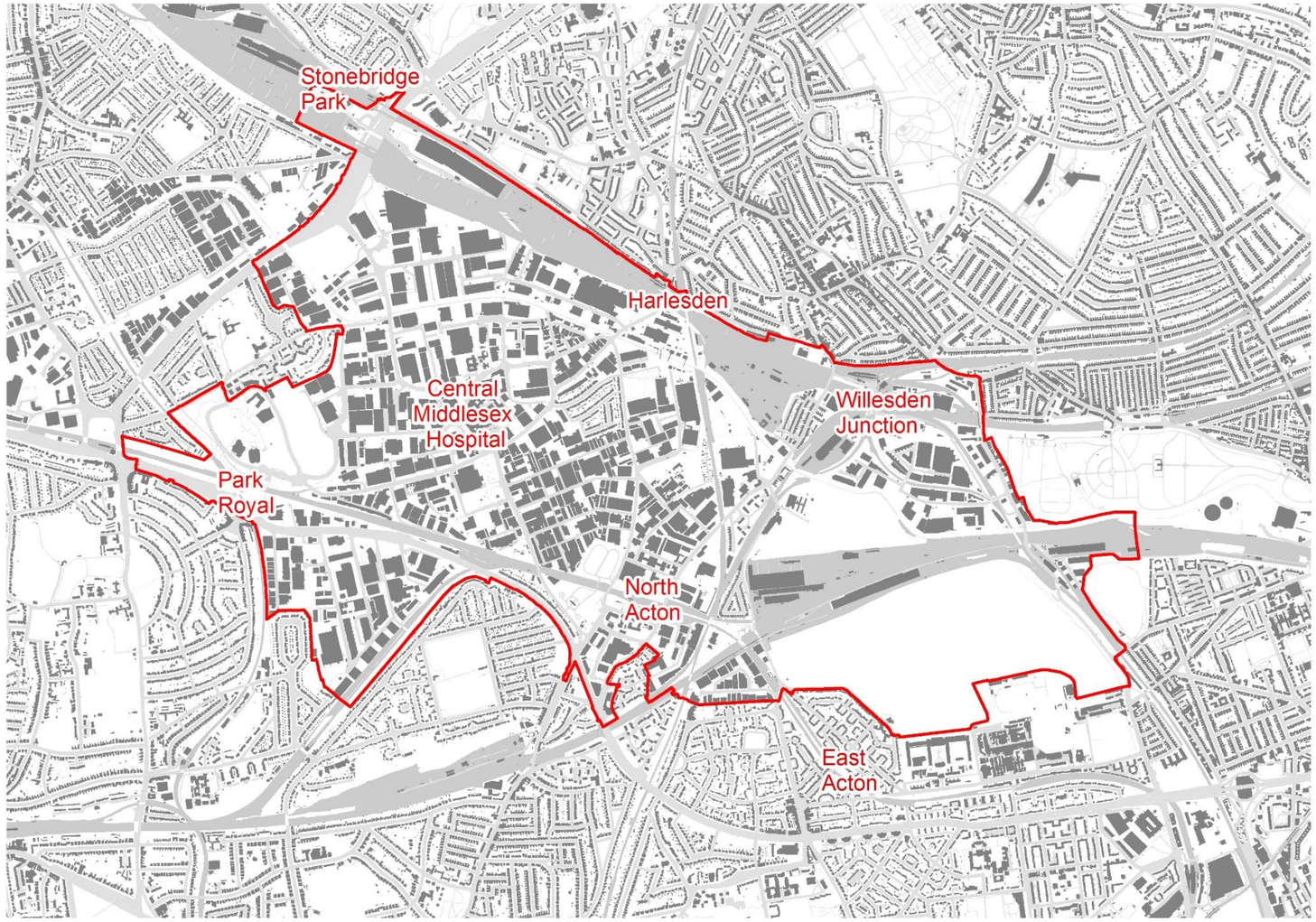
1 Introduction

1.1 Background

1.1.1 The team of 5th Studio, Alan Baxter Ltd and Wedderburn Transport Planning Ltd has been commissioned to prepare a Walking, Cycling, Streets and Public Realm Strategy for the Old Oak and Park Royal (OOPR) area. Wedderburn Transport Planning Ltd has undertaken PERS (Pedestrian Environment Review System) audits in the study area as one element of the study baseline assessment.

1.1.2 The Old Oak and Park Royal Development Corporation (OPDC) published a draft Local Plan for consultation in February 2016, which will be the Development Plan Document for the area. The OPDC area covers the Old Oak Common and Park Royal Opportunity Areas in the Mayor's London Plan (2015). Together these areas are identified as having the capacity to deliver a minimum additional 25,500 homes and indicative 65,000 jobs.

Figure 1-1: Overview of OPDC study area



1.2 What is PERS?

1.2.1 PERS (Pedestrian Environment Review System) is an audit tool used to assess the level of service and quality provided across a range of pedestrian environments. Checklists are completed on street to obtain a comprehensive understanding of what it's like to experience an area on foot.

1.2.2 Chapter 2 sets out the PERS methodology and how it was applied to the OOPR study area.

2 PERS methodology

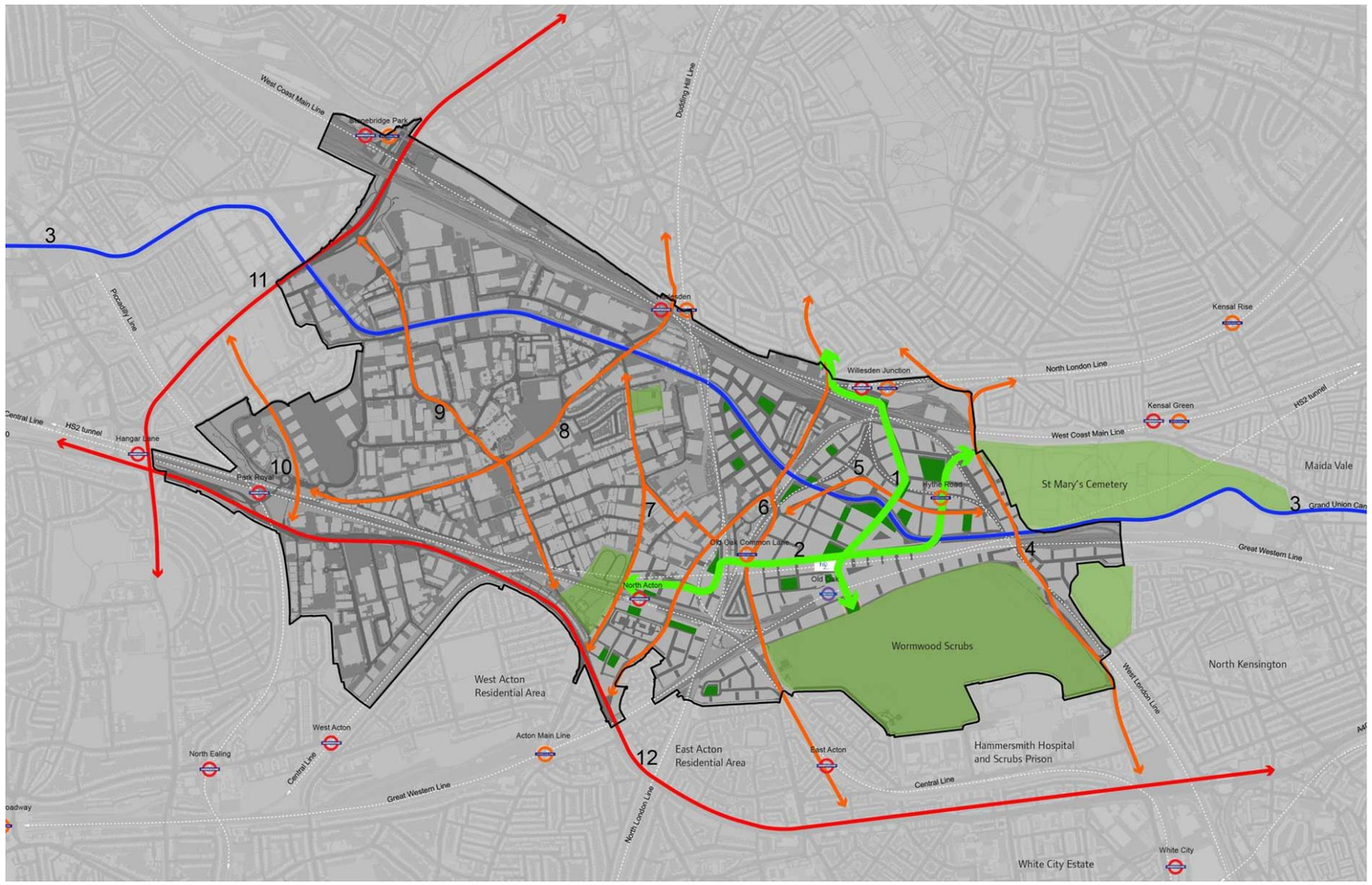
2.1 Definition of the study area

2.1.1 The first step in a PERS audit is to ensure that the boundary of the study area is clearly defined with any key objectives for the review of the study area established. Within the available time and budget, the scope for the OOPR audits was intended to avoid areas that will be subject to transformational as part of redevelopment proposals, but to target key pedestrian infrastructure that will serve access into and through the various sites before, during and after the redevelopment.

2.1.2 The scope of the PERS audit was defined by the key routes through the area identified in the Local Plan (Figure 2-1). From a pedestrian perspective, these include routes into the heart of the area from the public transport interchanges located within the study area and around its edges (shown in orange). The canal towpath also forms a key east-west pedestrian route through the area (in blue).

2.1.3 The routes along the A40 and A406 (in red) are not included in the audit scope, nor are the proposed green cross routes that do not currently exist. The PERS methodology applies its review frameworks to various components of the pedestrian environment:

Figure 2-1: Key routes through the study area (from draft OPDC Local Plan Figure 16)



Routes

2.1.4 The study area is defined around 11 key walking routes. These include the main walking routes into the OPDC area from the public transport interchanges located around the edges.

Links

2.1.5 Links can be any footway, footpath or highway that make up the walking network. Some links may be divided into sections or by side of the street if the level of service varies significantly between them. A total of 38 individual link audits were carried out along the key routes in the OOPR study area.

2.1.6 The Victoria Road and Scrubs Lane corridors are subject to more detailed public realm studies, and are therefore detailed PERS link (and crossing) audits are not completed for the full length of these routes. Likewise, detailed link audits are not conducted on the canal towpath since this is expected to change dramatically as a result of adjacent development.

Crossings

2.1.7 Crossings can include any designated or undesignated crossing points where a pedestrian desire line crosses the highway network. A total of 65 individual crossing audits were carried out in the OOPR study area.

Public transport waiting areas and interchange spaces

2.1.8 Public transport waiting areas can include any designated areas where passengers wait for public transport services. Interchange spaces are the areas around and between public transport stops or termini. These audits have not been undertaken in the OOPR study area the public transport infrastructure is the subject of several other workstreams.

Public spaces

2.1.9 The role of public space audits is to assess the place function of certain areas of the public realm. No public space audits have been conducted because a range of other tools have been employed to assess the public spaces in the study area.

2.2 Collation of existing information

2.2.1 Prior to the on-site audit process, a desktop review of background information was undertaken. The following information was collated:

- Casualty statistics for the study area
- Crime and disorder data

2.2.2 This information can inform the PERS outputs and indicate to the auditor if there are specific areas of concern.

2.3 On-street evaluation

2.3.1 The PERS audits were conducted on-site by an experienced auditor. For each PERS review framework, a review form is available for manual entry on site. Each review framework consists of a number of parameters requiring evaluation, as listed in Table 2-1.

2.3.2 Each review form requires the auditor to score and comment on each parameter. Parameters are scored from -3 to +3, where +3 is the highest score and -3 the lowest. For a parameter to score +3 it would need to be exemplary and of a standard to be identified as best practice. The PERS methodology provides a series of useful prompts for auditors when on-site, along with descriptions of the top, middle and lowest scores to provide a scoring benchmark. The auditor can note down their comments relative to the score given and take photographic records of their observations.

2.3.3 The PERS on-site audits were undertaken between 17th March and 11th April 2016 during normal business hours. Separate evening audits to assess lighting and personal security parameters did not form part of the scope.

Table 2-1: PERS review parameters, weight bands and default weightings for each parameter

Link review			Crossing review			Route review		
Factor	Weight Band	Default weighting	Factor	Weight Band	Default weighting	Factor	Weight Band	Default weighting
Effective width	C	5	Crossing provision	C	5	Directness	C	5
Dropped kerbs	H	3	Deviation from desire line	H	3	Permeability	H	3
Gradient	B	1	Performance	C	5	Road safety	C	5
Obstructions	H	3	Capacity	B	1	Personal security	C	5
Permeability	H	3	Delay	H	3	Legibility	H	3
Legibility	B	1	Legibility	B	1	Rest points	B	1
Lighting	H	3	Legibility for sensory impaired people	H	3	Quality of the environment	B	1
Tactile Information	H	3	Dropped kerbs	H	3	Link Audits and Crossing Audits	C	5
Colour contrast	H	3	Gradient	B	1			
Personal security	C	5	Obstructions	B	1			
Surface quality	H	3	Surface quality	H	3			
User conflict	C	5	Maintenance	B	1			
Quality of the environment	B	1						
Maintenance	B	1						
Public transport waiting areas review			**Interchange space review**			**Public space review**		
Factor	Weight Band	Default weighting	Factor	Weight Band	Default weighting	Factor	Weight Band	Default weighting
Information to the waiting area	H	3	Moving between modes	C	5	Moving in the space	C	5
Infrastructure to the waiting area	H	3	Identifying where to go	H	3	Interpreting the space	H	3
Boarding public transport	C	5	Personal safety	C	5	Personal safety	C	5
Information at the waiting area	H	3	Feeling comfortable	H	3	Feeling comfortable	H	3
Safety perceptions	C	5	Quality of the environment	B	1	Sense of place	H	3
Security measures	C	5	Maintenance	B	1	Opportunity for activity	B	1
Lighting	H	3	Link Audits and Crossing Audits	C	5	Link Audits and Crossing Audits	C	5
Quality of the environment	B	1	Route Audits	C	5	Route Audits	C	5
Maintenance and Cleanliness	B	1	PT Waiting Area Audits	C	5	PT Waiting Area Audits	C	5
Waiting area comfort	H	3						

2.4 Data analysis

2.4.1 All of the PERS review forms have been input into Excel and GIS so that all elements of the audit are transferable to the client and stakeholders in a format they can access. The audit rating scores on a 7-point scale have been entered into the database along with relevant comments.

2.4.2 The PERS methodology applies weighting factors to the scores attributed by the auditor. The purpose of the weighting factor is to allow for differentiation between those elements that are more significant than others. The default weightings are banded into the following categories:

- Baseline: of general importance to all pedestrians (B)
- High significance: of particular importance to some pedestrians (H)
- Critical: of major significance to a majority of pedestrians (C)

2.4.3 In the default settings, these groups are weighted at 1, 3 and 5 respectively, the weighting factor acting as a multiplier. Table 2-1 shows the weighting bands for each parameter.

2.4.4 The PERS methodology produces an aggregated weighted score for each review form, and bands the performance of a facility into red, amber and green (RAG score). Green represents good or very good provision, amber represents average provision and red represents poor or very poor and components receiving a red score are of most concern.

2.5 Display of audit findings

2.5.1 The RAG scoring system is used to convey the overall weighted scores or the score for individual parameters in a spatial manner. As well as providing high level maps, this report highlights the key issues identified in the audit and summarises how these issues affect the pedestrians experience in the study area. Photographic records are used to illustrate these issues.

2.5.2 This report is accompanied by a full set of PERS audits supplied in an Excel spreadsheet and GIS files for the graphical display of audit results.



3 Background information

3.1 Introduction

3.1.1 This section provides a brief overview of study area. The following information is presented:

- Pedestrian collision statistics
- Crime and disorder data

3.1.2 This information has informed the PERS audit results presented in chapter 4.

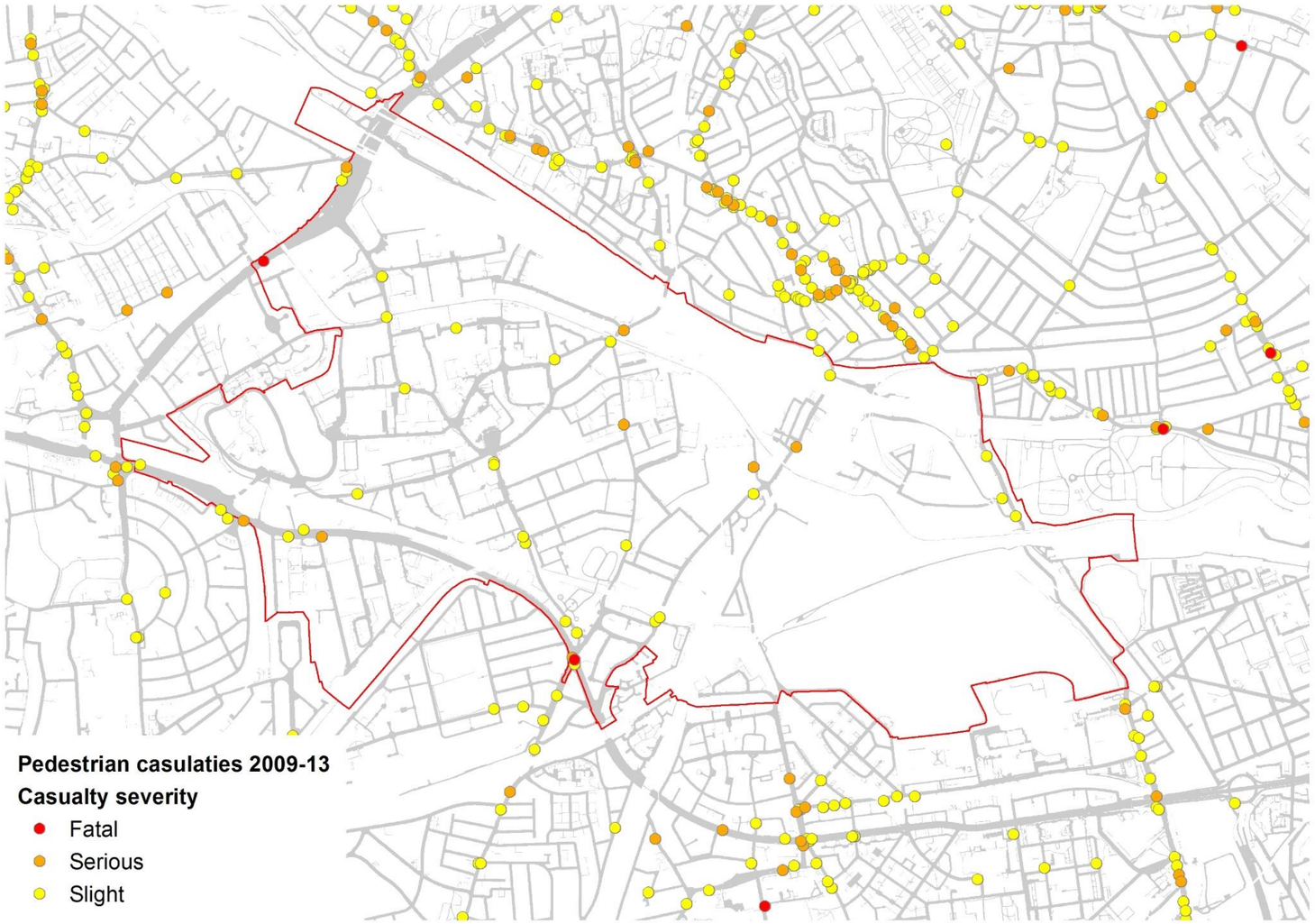
3.2 Pedestrian collision statistics

3.2.1 Figure 3-1 shows the collision statistics involving pedestrians in five full calendar years (2009 to 2013).

3.2.2 The overall picture shows that the number of pedestrian casualty collisions within the study is actually very low compared to the surrounding area. Much higher pedestrian casualty rates are observed on surrounding corridors with much higher pedestrian footfall such as Harlesden High Street and Ealing Road.

3.2.3 There are, however, several clusters of pedestrian collisions on the edges of the study area. For example, there are several pedestrian casualty collisions, including one fatality, at the junction of the A40 to the south of North Acton. And there is an additional pedestrian fatality crossing the North Circular to the south of the Grand Union Canal. Both of these fatalities occurred after dark when pedestrians were hit by drivers approaching from the nearside, the first near a signalised pedestrian crossing and latter within proximity of a subway crossing.

Figure 3-1: Pedestrian casualties 2009-13 by severity

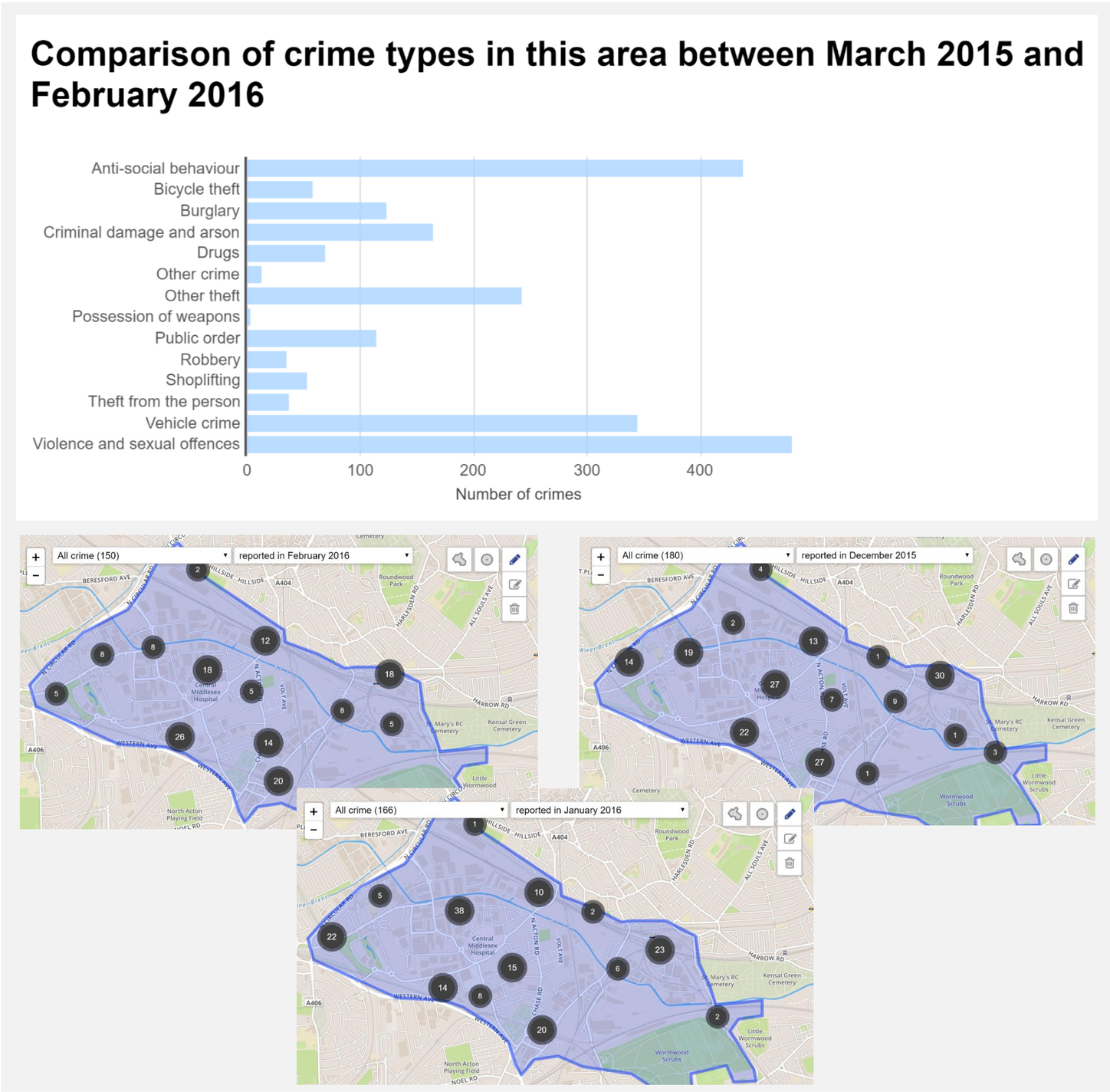


3.3 Crime and disorder data

3.3.1 Figure 3-2 shows the occurrence of reported crime and anti-social behaviour in the study for the most recent year of data. The most common types of reported offence are violent or sexual offences, anti-social behaviour and vehicle crime. The high number of 480 violence and sexual offences equates to 40 reported occurrences per month in the study area.

3.3.2 The crime maps for the last three months show a relatively consistent profile of the spatial distribution of crime in the study area. Unsurprisingly there are clusters of reported offences around the Underground stations where footfall is highest. The area around Central Middlesex Hospital is also characterised by a higher rate of crime.

Figure 3-2: Crime summary data for the study area



Source: www.police.uk

4 PERS audit findings

4.1 Routes

4.1.1 Figure 4-1 shows a map of the 11 routes assessed by their RAG score. All routes are scored as amber except for the routes from East Acton station, from Park Royal station and from Stonebridge Park station.

4.1.2 Appendix A contains a full set of maps showing the route scores for all criteria.

Directness

4.1.3 In the PERS methodology, directness is measured by comparing the ratio of the actual distance to the direct distance (as the crow flies). The directness ratio for all of the routes assessed is in the region of 1.5 or less. Local deviations from the most direct route are observed at the exits to several stations, notably North Acton (R7) and Park Royal (R8b).

Permeability

4.1.4 Several of the main routes into the study area are characterised by their high volume and speed of traffic. The provision of pedestrian crossing facilities is mixed. While there are some junctions where signalised pedestrian crossings are provided, there are also several examples of large roundabouts where pedestrians need to cross multiple lanes of traffic, often exiting the roundabout at speed. There are also key junctions where there is absolutely no provision

Figure 4-2: High traffic volume and speed (R9a)



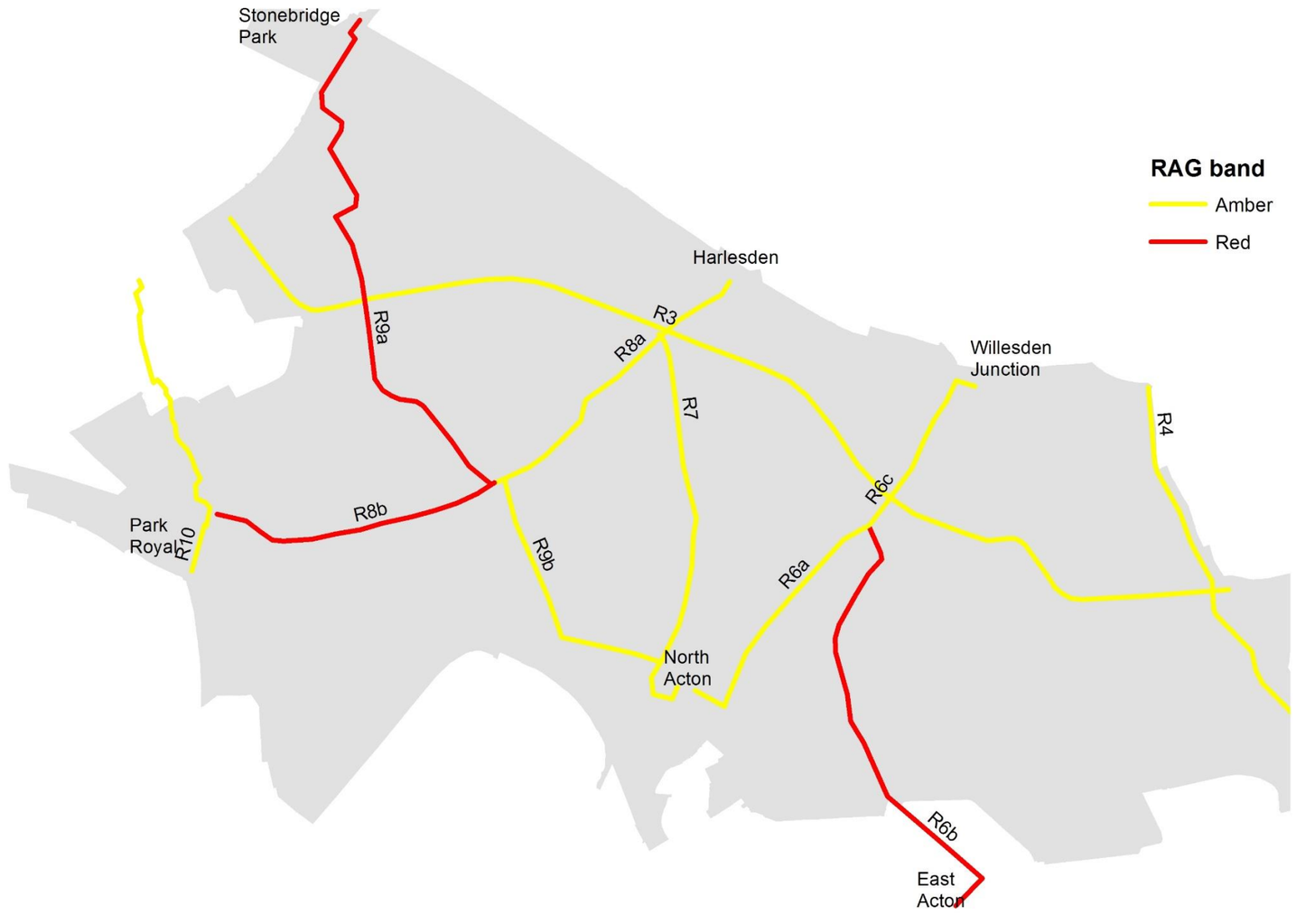
Road safety

4.1.5 As described in section 3.2, there are no significant clusters of pedestrian casualty collisions in the core study area. This is partly due to the low pedestrian volumes in the area. The on-streets audits identified a number of road safety concerns, such as high vehicle speeds, the lack of crossing provision, and conflicts between pedestrians and turning vehicles at vehicle crossovers.

4.1.6 Perhaps more significantly, the driving culture experienced in Park Royal is far removed from what Londoners tolerate in other neighbourhoods. Generally aggressive driving behaviour can frequently be observed, partly from LGVs in a hurry in the course of their work but also from boy racers testing the power of their vehicles. The nature of the environment and the low volume of pedestrians appear to contribute to the sense that this sort of behaviour is tolerated in the area.

4.1.7 While PERS is an environmental audit tool, it should be noted that these issues cannot be addressed solely through infrastructure. Greater education and enforcement would be necessary to address this culture.

Figure 4-1: PERS routes – RAG bands



Personal security

4.1.8 As presented in section 3.3, the study area is characterised by a high rate of violent and sexual crime. The experience of on-street auditing was that the main streets through Old Oak Common and Park Royal had some footfall during daylight hours and some form of street lighting. Yet there are large sections of these streets with predominantly inactive frontages since many of the industrial estates have an internal layout and back onto the main roads through the area.

4.1.9 Furthermore, there are several key routes into the study area where pedestrians have large sections with no fronting or overlooking activity at all. These include the Stonebridge Park station link over the North Circular (R9a), the Park Royal station link (R8b and R10), the cemetery link between North Acton station and Park Royal Road (R9b), and the succession of railway tunnels on Old Oak Common lane (R6b).

Figure 4-3: Footpath link towards North Acton station (R9b)



Legibility

4.1.10 Apart from the canal towpath where pedestrian wayfinding is provided at key decision points, all routes scored negatively for legibility. The area can be confusing for pedestrians due since the routes to/from key public transport hubs are not always intuitive and some routes lack particular features of visual interest.

4.1.11 In some parts of the study area, the provision of street signs is at least relatively consistent. However, there is no comprehensive pedestrian wayfinding in the study area. Therefore, it is challenging to find one's way around the sheer volume of businesses and industrial estates operating in the area.

Rest points

4.1.12 Nearly all of the routes scored negatively under the rest points criterion. Seating is provided reasonably frequently on the canal towpath (R3), around Lakeside Drive (R10) and along Victoria Road (R6c). However, in most of Royal Park Royal there are virtually no rest except for the seating provision at bus stops.

Quality of the environment

4.1.13 The vast majority of the study area is dominated by industrial land use. The quality of the pedestrian experience when walking in these areas is generally negative due to the presence of large blank walls and routes along busy roads with a very high proportion of HGVs.

Figure 4-4: Large units with no street-facing activity (R9a)



4.1.14 The perception of quality of the environment does depend on the nature of the industrial frontages though. In some areas with smaller unit sizes and some street-facing units there is more visual interest and the passer-by can catch glimpses of the adjacent places of work. Yet the more interesting environments are often those that generate the most conflict with pedestrians if they spill out onto the footway

Figure 4-5: Smaller unit sizes with street-facing activity (R7)



4.1.15 The canal towpath (R3) scores higher for quality of environment since it is a fascinating place combining nature, working industries, residential use of the canal boats and industrial heritage.

Figure 4-6: Typical view of the canal towpath (R3)



4.2 Links

4.2.1 Figure 4-7 shows a map of the 38 links assessed by their RAG score. The majority of these links are scored as amber overall and four of the links as red.

4.2.2 Appendix B contains a full set of maps showing the link scores for all criteria.

Effective width and obstructions

4.2.3 The vast majority of links in the study area have enough space to provide effective footway width for the level of flows currently experienced.

4.2.4 Narrower footways are encountered in the railway tunnels on Old Oak Common Lane (L17 and L18), and the provision of guardrails reduces the effective width yet further. The capacity in these tunnels will prove challenging if pedestrian flows increase with development in the area.

Figure 4-7: PERS links – RAG bands

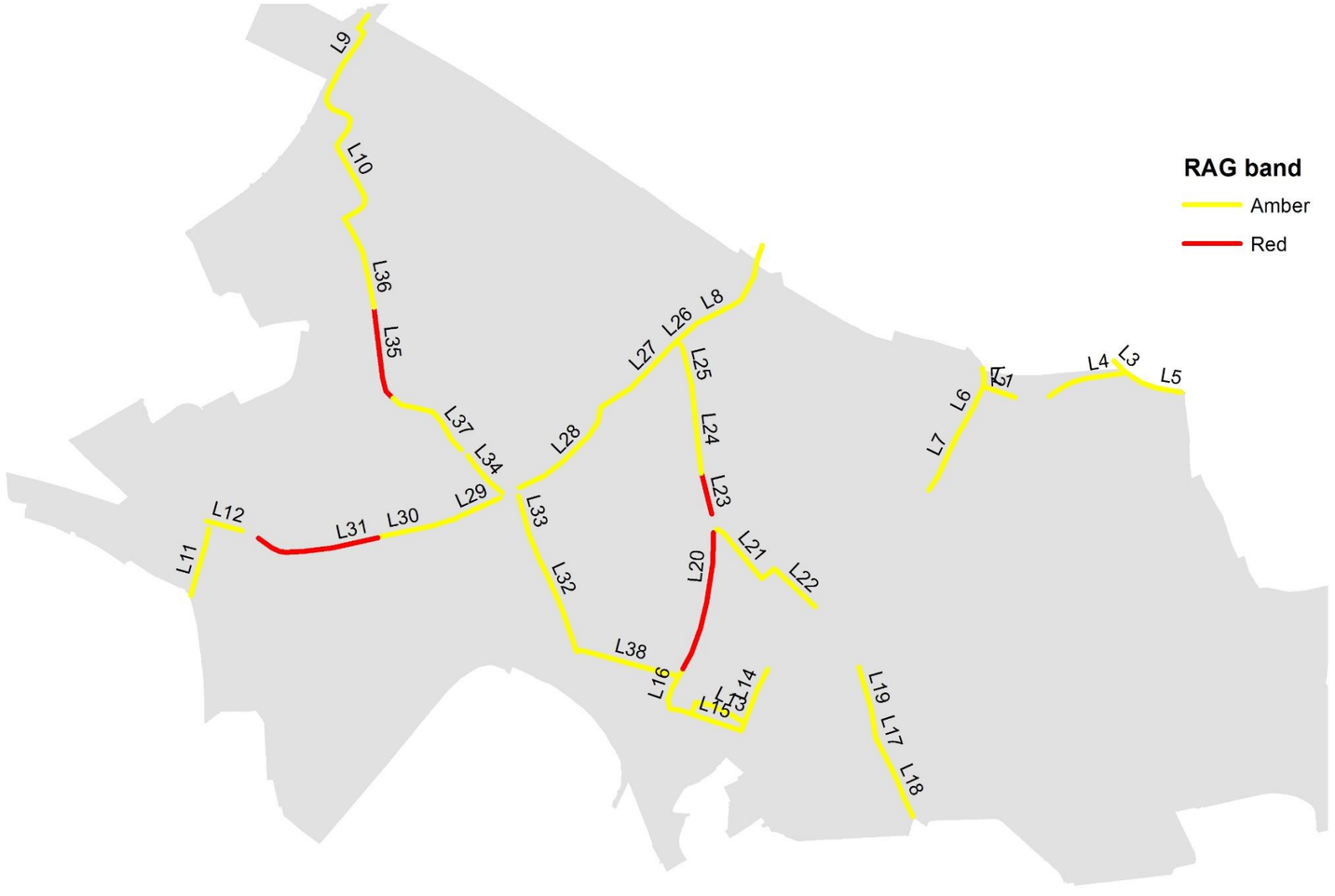
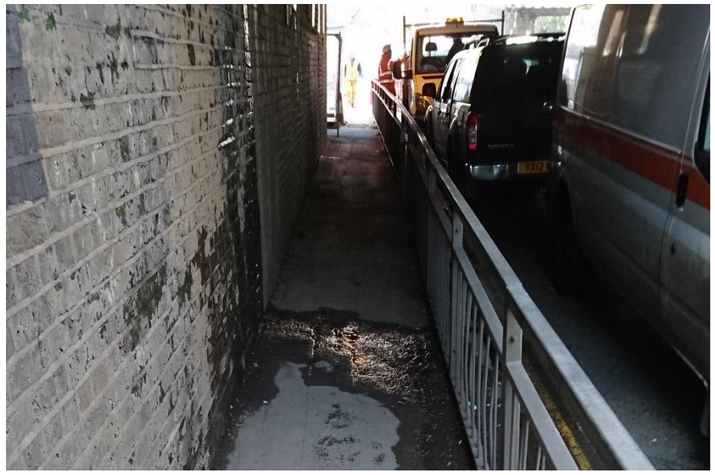


Figure 4-8: Narrow footways in railway tunnels (L17)



4.2.5 In most of the study area, the effective pedestrian space available is determined mainly by the positioning of obstructions in the footway. For example, it is not uncommon in this area that large road signs aimed at HGVs travelling at speed are mounted on two poles in the footway.

4.2.6 The blocking of footway space is most acute in several areas with a clustering of automotive related industries (L31, L24 and L27). The merging of workshop space and footway frequently leads to footways being blocked. While these are some of the more amenable pedestrian environments in Park Royal in terms of street-facing activity, they frequently fail to provide to a minimum effective width allowing passage by all users.

Figure 4-9: Frequently blocked footways (L31)



4.2.7 One section of footway adjacent to Central Middesex Hospital (L34) is effectively blocked by overhanging vegetation. The remaining footway width is unacceptable, especially for an approach route to a major hospital.

Figure 4-10: Overhanging vegetation (L34)



Step-free access

4.2.8 There are several key station access links in the study area that do not provide step-free access. The footpath from Harrow Road to Willesden Junction station has a long flight of stairs (L4). The only step-free route into this station is from the station approach (L1) and only for pedestrians walking on the eastern footway of Victoria Road. The footpath past the cemetery is the main pedestrian link between North Acton station and employment on Park Royal Road, and has a flight of stairs at the Park Royal Road entrance (L38).

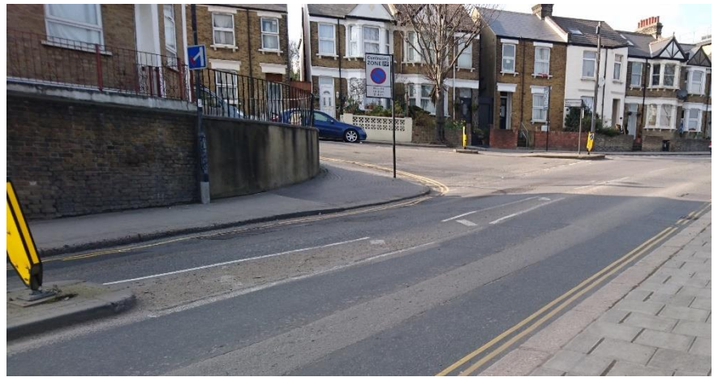
4.2.9 The study area also includes a number of links where the basic minimum of a continuous step-free footway along the main routes the area is not achieved. This is generally as a result of vehicle crossover arrangements to access industrial units. This is surprising in such an employment area not only because it excludes certain groups from accessing employment in Park Royal but because it also renders some types of servicing more difficult if goods are to be wheeled in by foot from vehicles parked in the street.

Figure 4-11: Lack of step-free access at crossovers (L20)



4.2.10 The topography of the study area means that a number of links contain some gradient. In most cases the street network follows continuous gradual gradients. Localised gradient issues in the detail of the pedestrian network can occur where steep dropped kerbs are provided on sections of slight gradient, or for example where the radius of a road junction leads to a tight pedestrian space with steep gradient and crossfall (L19).

Figure 4-12: Steep gradients with crossfall (L19)



Permeability

4.2.11 As described in the routes audit, the main routes into the site all carry high volumes of LGVs and HGVs. Yet some links score reasonably well if formal crossings are provided on all arms of the key junctions and additional pedestrian crossing assistance is provided on key desire lines.

4.2.12 A number of links score very poorly for permeability because there are is no crossing provision at all at key points. This includes the lack of formal crossings or even informal refuges at key junctions in the walking network (L27, L28, L35 and L16). In these locations pedestrians are observed to cross on desire lines with poor visibility and fast vehicle speeds. Other links have long stretches with no crossing assistance at all where informal crossing is rendered difficult by high speeds and poor visibility due to parked vehicles (L32 and L31).

Figure 4-13: No crossing provision at key junction (L27)

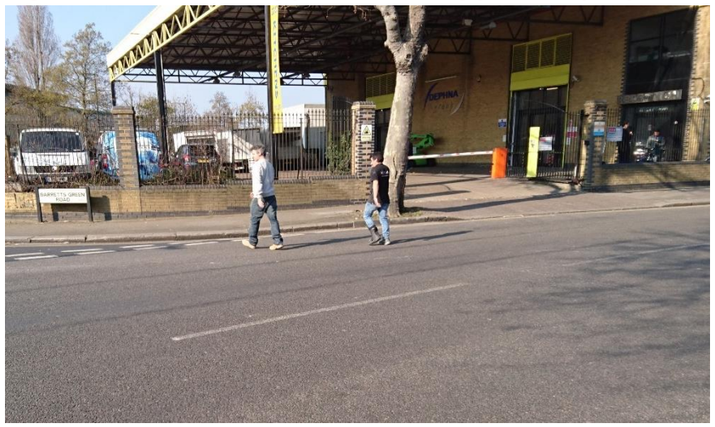


Figure 4-14: No crossing opportunities near bus stops (L35)



Legibility

4.2.13 The route audit identified that legibility in the study area is challenging since not all of the routes to/from the surrounding stations are intuitive, due to the sheer number of businesses in the area and the lack of any formal pedestrian wayfinding.

4.2.14 In most parts of the study area, street signs are present and consistent.

Legibility for sensory impaired persons

4.2.15 The majority of signalised pedestrian crossings in the study area have provision for sensory impaired persons in the form of tactile paving and rotating cones. The use of colour contrast paving at these crossings is also generally consistent.

4.2.16 Yet away from the signalised crossings, there are several large roundabouts with inconsistent tactile provision. For example, the roundabout to the rear of Central Middlesex Hospital has tactile paving on the crossings on all arms, except that on some arms it is not positioned to be picked up by pedestrians walking along the main footway.

4.2.17 Many of the footways through the study area have frequent vehicle crossovers and there is generally no consistency of tactile information or colour contrast at these crossovers.

Lighting and personal security

4.2.18 The route audits identify personal security as a key concern in this area.

4.2.19 Night time audits did not form part of the scope of this study, but observations in the daytime suggest that frequent street lighting is provided on all of the main roads through the study area. The greatest points of concern are the links between the surrounding stations and employment areas, which include pedestrian paths with natural surveillance from surrounding land use. While the station access routes have a reasonable level of footfall during the daytime, they can be unpleasant routes after dark. In an employment area with irregular shift patterns, many employees can be expected to use the station links early in the morning and later in the evening.

4.2.20 The station access link from Park Royal station (L11) involves a long section with a subway and a footbridge with no overlooking land uses. This route is not even connected to the station itself but located further along the A40 where is cannot benefit from the passive surveillance of the station.

4.2.21 The cemetery link forms the main station access link between North Acton station and Park Royal Road. This link does not have any surveillance from surrounding land uses.

Figure 4-15: Park Royal station link (L11)



4.2.22 The routes into the study area from East Acton station (L17) and from Stonebridge Park station (L9) include successive railway tunnels. Even with dedicated lighting of the pedestrian space, these tunnels are dark and frequently damp spaces, which often have shadowy concealed spaces around the tunnel arch. In some cases measures have been taken to close off concealed spaces to give more confidence to pedestrians at night.

Figure 4-16: Closing off concealed spaces in tunnel (L9)



4.2.23 The pedestrian access from Harlesden station into Park Royal is a main road with some surveillance from passing vehicles. But even here the first section over the railway bridge and past the biscuit factory has no natural surveillance from surrounding frontages.

4.2.24 The access routes from Willesden Junction station also involve getting past blank railway bridges first. However, overlooking frontages surround the onward routes in both directions on Old Oak Common Lane.

Figure 4-17: Overlooking residential frontages (L7)



Surface quality

4.2.25 The footpaths and shared path links in the study area are generally characterised by decent surface quality. On the streets with industrial frontages, the presence of HGVs parking, servicing and turning into premises at vehicle crossovers makes the maintenance of the footway surface challenging.

4.2.26 A number of links scored very poorly for surface quality (L20, L23 and L26). Typical evidence of HGV damage includes dislodged kerbstones, surface rutting, cracked paving, cracked or splintering carriageway surfaces on vehicle crossovers. These factors can result in significant trip hazards for pedestrians.

Figure 4-18: Poor surface quality at vehicle crossover (L23)



Figure 4-19: Example of better surface at crossover(L25)



4.2.27 Footway damage was also observed as a result of tree roots on several links (e.g. L31 and L34).

User conflict

4.2.28 The route audit identified conflict between pedestrians and other uses of the space as one decisive factor in perceptions of the walking environment. The temporary use of the footway for servicing or other uses can generally be managed since staff are present to react to the presence of pedestrians. For example, it was observed that the footway was temporarily used in places for glass-cutting or for unloading with a fork lift truck.

4.2.29 The intrusion of activities into footway space is greater where this is more permanent and not overseen by staff. Examples include the all-day use of the footway for parking and even for the display of vehicles for sale.

Figure 4-20: Lorry parking on footway (L35)



Figure 4-21: Garage overspill into footway (L24)



4.2.30 There were few observations of potential conflict at bus stops. Where bus stops were present on the footway, efforts had been made in the placement of bus stops to avoid conflict between waiting passengers and pedestrians moving along the footway.

4.2.31 In the areas of residential frontage on Old Oak Common Lane (L7), the co-existence of on-street parking and a clear footway is well-managed.

Figure 4-22: Management of on-street parking (L7)



Quality of environment

4.2.32 As described in the route audit, the majority of the links audited consist of footways running adjacent to industrial frontages. The pedestrian amenity of these routes is obviously affected by traffic passing (noise, fumes).

4.2.33 Yet the look and feel of the spaces also depends on the type of adjacent development. The links with the least visual interest for pedestrians have the largest unit sizes, which turn their back on these routes (e.g. L36). The links with smaller units and more street-facing activities have a more human scale.

Figure 4-23: Large unit sizes on Abbey Road (L36)



4.2.34 The main routes through Park Royal meet in what could be described as the ‘town centre’ of Park Royal around the hospital and ASDA supermarket. However, this area does not yet offer much of a sense of place. The supermarket is set back from the street by a large sea of parking. Current redevelopment of the corner site at the entrance to the hospital will provide a more urban frontage to the space on one side.

Figure 4-24: Park Royal ‘town centre’ (L33)



Maintenance

4.2.35 A number of both positive and negative scores were allocated to links in the study area for maintenance.

4.2.36 The presence of HGVs carrying aggregates through the area means that some streets are frequently exposed to dust, grit and debris. The ability of the footways to be cleaned then depends greatly on the surface quality and the presence of obstruction such as excess guardrail where dirt and grit tends to build up.

4.2.37 One observed effect of HGV damage on footways was a tendency for puddling in wet conditions.

4.2.38 In terms of general litter, some links were observed to be generally clean with bins generally provided at bus stops. But at the other end of the extreme were links with excessive litter and fly tipping.

Figure 4-25: Fly tipping and litter (L9)



4.3 Crossings

4.3.1 Figure 4-26**Error! Reference source not found.** shows a m ap of the 65 crossings assessed by their RAG score. The crossing scores vary considerably with a mix of green, amber and red throughout the study area.

4.3.2 Appendix C contains a full set of maps showing the crossing scores for all criteria.

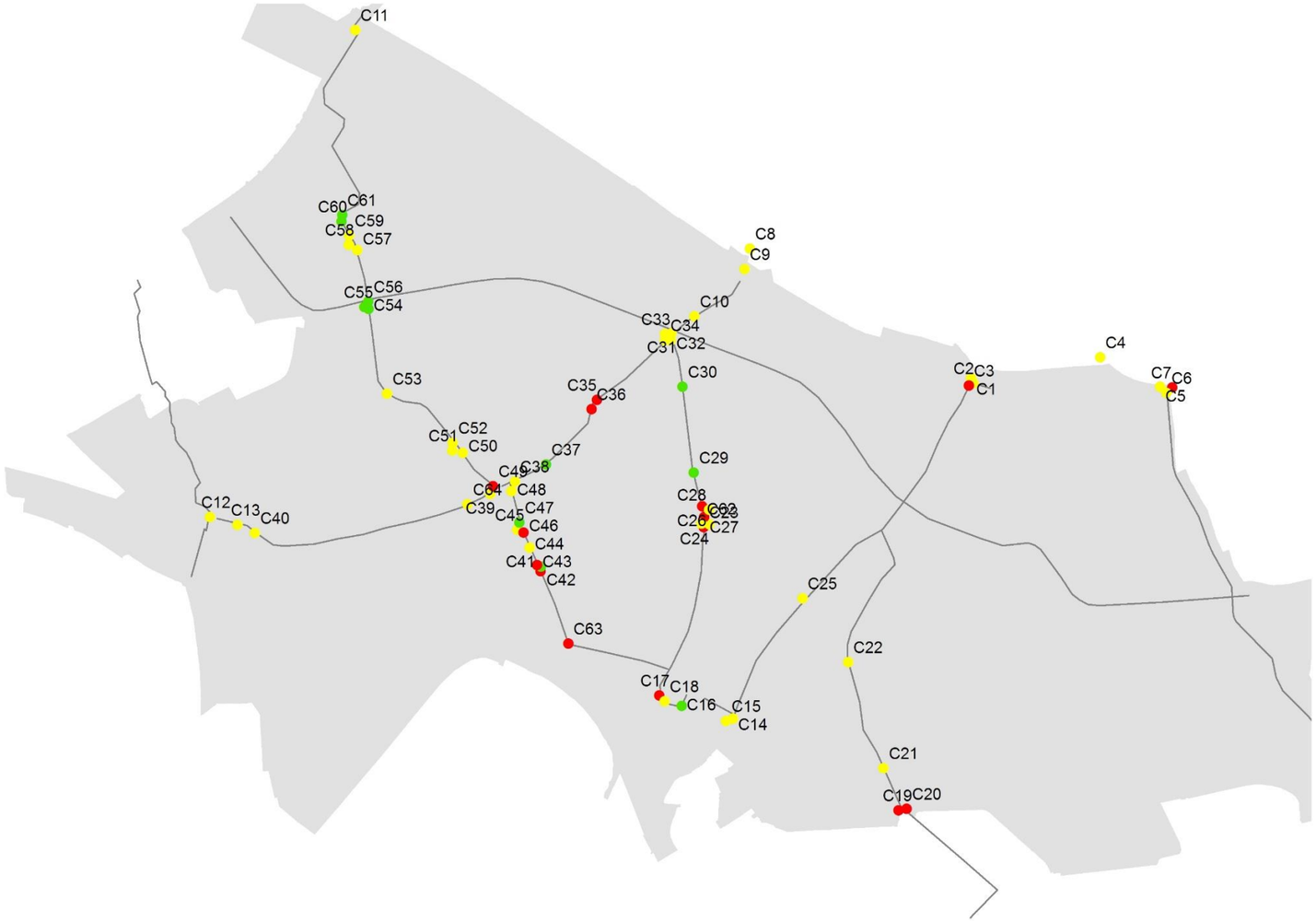
Crossing provision and performance

4.3.3 A number of the pedestrian crossing facilities are scored highly in terms of provision and performance. This includes the zebra crossing at the entry to North Acton station (C16), which has the capacity to cope well with the regular bursts of pedestrians exiting the Central Line. The signalised junctions on Abbey Road (C60, C61, C54, C55 and C56) also score well since they provide pedestrian-activated and protected crossings on what is a very busy road with high traffic flows.

Figure 4-27: High capacity zebra crossing (C16)



Figure 4-26: PERS crossings – RAG bands



4.3.4 A score of -3 is registered in locations where no crossing is provided on a key pedestrian desire line. For example, there is no crossing on the northern arm of the junction of Victoria Road and Chase Road (nor on the other side of the railway bridge near the start of the cemetery link to Park Royal Road). This means that there is no provision to assist pedestrians across Chase Road on one of the main desire lines to/from North Acton station.

Figure 4-28: No crossing on desire line (C17)



4.3.5 There are several large roundabouts in the study area, one at the entry to Coronation Road (C13 and C40) and two on Abbey Road (C50-C52 and C57-C59). The provision of dropped kerbs is all that denotes a crossing alignment on dual carriageway approaches to these major roundabouts. With wide turning radii, traffic is observed to enter and exit the roundabout at considerable speed.

Figure 4-29: Crossing at large roundabout (C52)



4.3.6 One crossing that score poorly on performance is at the junction of Victoria Road and Chandos Road (C25). The use of a mini-roundabout at this location is appropriate but the layout where pedestrians are forced into the drivers' blind spot to cross is unsatisfactory.

Figure 4-30: Pedestrians forced to cross in blind spot (C25)



Deviation from the desire line

4.3.7 Many of the crossings in the study area are located on or reasonably close to the pedestrian desire lines. This is easier to achieve with crossings with a single stage.

Figure 4-31: Single stage on the main desire line (C55)



4.3.8 In addition to the locations where there is no crossing provided on the pedestrian desire line, several crossings were highlighted as deviating from the desire line due to excessive staggers. For example, there is a triple staggered crossing on the eastern arm of the junction of Victoria Road and Chase Road (C18), which even includes a separate crossing stage for a bus-only right-turn slip used by a single bus route.

Figure 4-32: Triple staggered crossing (C18)



Capacity and obstructions

4.3.9 The majority of the crossings in the study area are scored neutrally or positively for capacity. Given the low pedestrian flows observed in many locations, the need for particularly wide crossings is limited.

4.3.10 Some capacity issues are flagged at crossings with small islands (e.g. C8) or with excessive street furniture restricting access on the approaches to the crossing or on the island.

Figure 4-33: Narrow crossing at Harlesden station (C8)



Delay

4.3.11 There are a wide range of scores for delay in the study area. The highest scores are achieved by the zebra crossings where the waiting time is minimal.

4.3.12 Pedestrian delay at the roundabouts and informal crossing refuges depends on the level of traffic observed at different

times of the day. In practice during the audited times of the day, it is rare that traffic is heavy enough to generate very significant waiting times except at the busiest junctions (crossings C57 and C59 on Abbey Road especially).

4.3.13 Where signalised crossings are provided at junctions, a variety of cycle times are observed. For example, at the junction of Harrow Road and Scrubs Lane (c5 and C7), the staggered crossings run in an approximately 100-second cycle. The junction of Acton Lane, Barretts Green Road and North Acton Road has a shorter cycle time of around 70-80 seconds but no dedicated pedestrian phases on three arms (C32, C33 and C34). As a result, pedestrians are observed to run across these arms in the brief intergreen phases.

Legibility

4.3.14 The majority of the signalised and zebra crossings in the study area were assessed to have a reasonable delineation of the crossing space, clearly identifiable stop lines and generally good visibility for drivers and pedestrians.

4.3.15 The roundabouts do not perform as well in terms of the delineation of pedestrian crossing space and sightlines between drivers and pedestrians. In many cases there is simply very little sense of pedestrian ownership of the space. The double roundabout arrangement on Chase Road is one example of illegible crossings. Drivers are observed to approach at speed and negotiate between multiple vehicle movements while paying little attention to the presence of pedestrians.

Figure 4-34: No sense of pedestrian space ownership (C23)



Legibility for sensory impaired persons

4.3.16 All of the signalised crossings were observed to have some provision for sensory impaired persons in the form of tactile paving and rotating cones.

4.3.17 As described in the link audits, the use of coloured tactile paving at formal crossings is generally consistent. The greater challenge is the lack of any provision at all on the desire lines with no crossing assistance at all.

Step-free access

4.3.18 All of the crossings audited provide step-free access with dropped kerbs, and are therefore all scored neutrally positively in the dropped kerbs and gradient categories. All of the desire lines with no crossing provision at all are scored negatively.

Surface quality and maintenance

4.3.19 Surface quality issues occur at several points where the carriageway is uneven, rutted or broken up at the point where pedestrian cross the road (e.g. C20 and C22).

Figure 4-35: Carriageway damage at crossing (C22)



4.3.20 It was identified in the link audits that the presence of HGVs transporting aggregates results in grit and dust in the carriageway. This grit and debris tends to gather at dropped kerbs and crossing islands.

Figure 4-36: Build-up of grit and debris at crossing island (C7)



4.3.21 One specific issue noted in the study area is the frequent presence of guard rail and other street furniture that has been damaged by vehicles. This may be a consequence of the aggressive driving behaviour frequently observed in the area and it it does reduce the effective pedestrian width available in several places (C13 and C58).

Figure 4-37: Damaged guard rail in the footway (C58)



5 Summary of findings

5.1.1 The results of the PERS audit are negative overall. PERS uses a red, amber, green (RAG) scoring system to summarise the aggregated and weighted results of the audits. The PERS route and link audit results for the study area are all scored as amber or red. This means that while individual review parameters were scored positively, the majority of the aggregated PERS audits were scored as average or negative in balance.

Key findings

- The study area is predominantly industrial in character at present. The key walking routes audited include the routes between Underground station locations on edge of the study area and the main employment areas. Except for the immediate surroundings of the stations these pedestrian routes all have low to medium pedestrian flows by London standards.
- With a high rate of violent and sexual crimes reported in the area, actual and perceived risks to personal security are of concern. Several of the key routes from railway stations involve links that are not overlooked at all and/or include links through unattractive tunnels or subways.
- The trafficked streets through the study area all carry a high proportion of HGVs and LGVs, creating an environment of noise and fumes.
- The road safety statistics indicate that the actual pedestrian casualty rate is low as can be expected with the low footfall. Yet there were two pedestrian fatalities in five years on the main roads bounding the study area, and a high proportion of the pedestrian casualties in it were classed as serious. Shocking examples of aggressive driving behaviour that wouldn't be tolerated in parts of London with a greater pedestrian presence are frequently observed.
- The western side of Park Royal is dominated by large big box units that do not front the streets. These areas tend to offer acceptable footway infrastructure but a poor quality of environment for walking. The presence of large roundabouts with multiple lanes and wide turning radii makes crossing difficult at key junctions, and does not offer any sense of pedestrian ownership of the space.
- The eastern side of Park Royal has many smaller street-facing industrial units. These areas tend to feel more human in scale but in many cases the footway does not meet basic requirements due to conflicting uses (parking, servicing).
- There are several key station access links in the study area that do not provide step-free access, and several other links in the study area do not offer step-free access as a result of the lack of dropped kerbs or poor surface quality at vehicle crossovers.
- Legibility for pedestrians is challenging since not all of the routes to/from the surrounding stations are intuitive, due to the sheer number of businesses in the area, and due to the lack of any formal pedestrian wayfinding.

Appendix A – route scores

Directness



Road safety



Legibility



Permeability



Personal security



Rest points



Quality of the environment



Appendix B – link scores

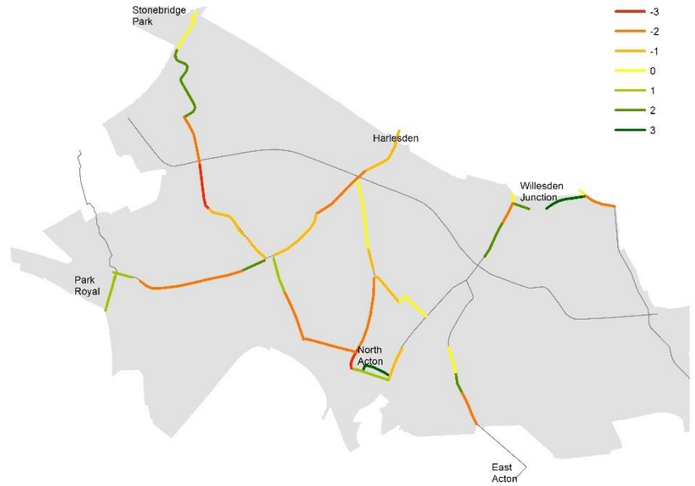
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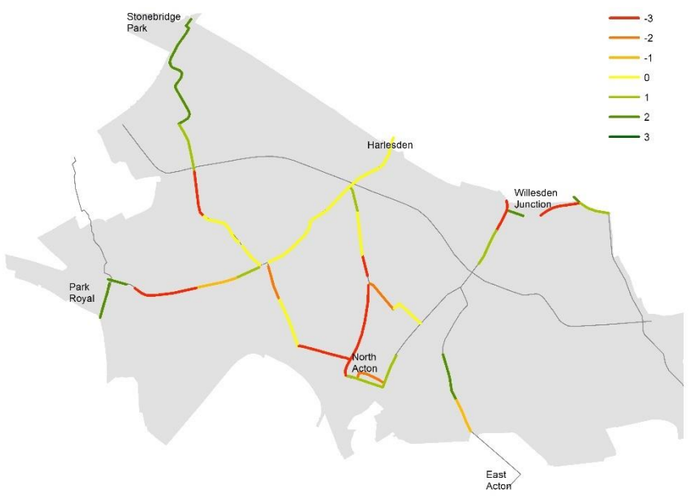
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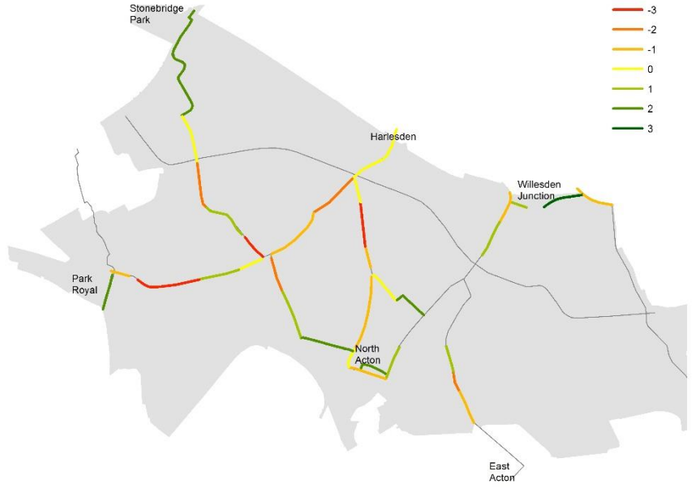
Permeability



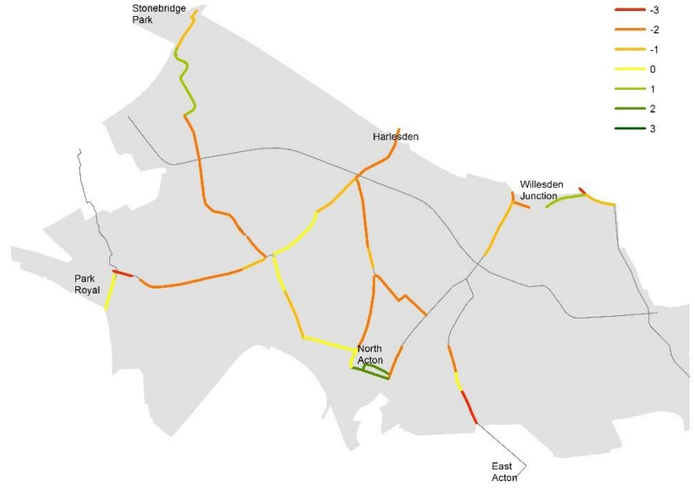
Dropped kerbs



Obstructions



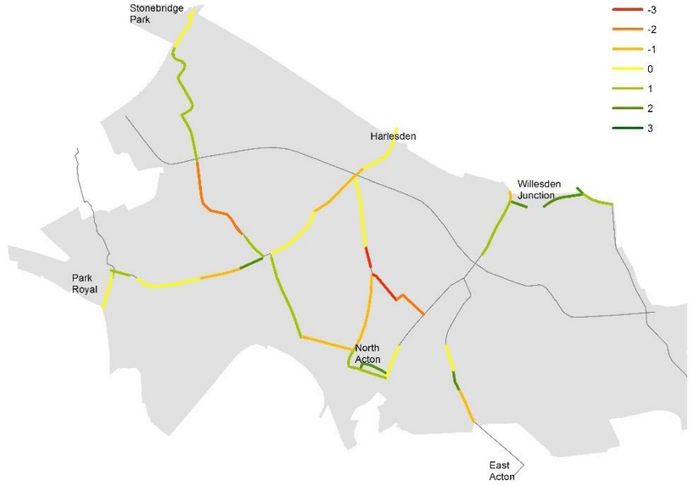
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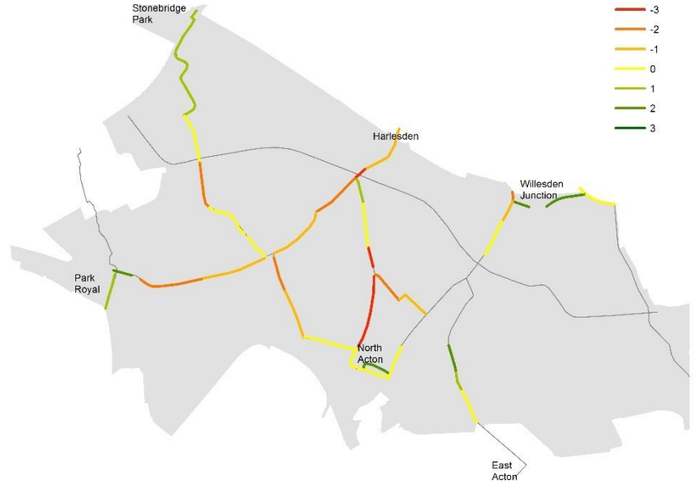
Lighting



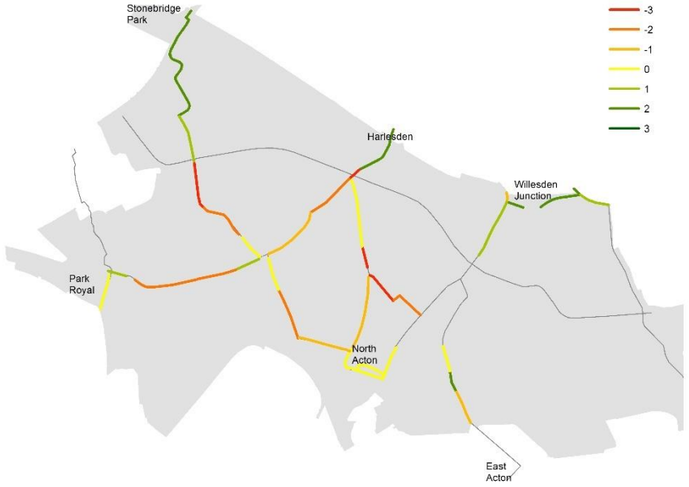
Colour contrast



Surface quality



Tactile information



Personal security



User conflict



Quality of the environment



Maintenance



Appendix C – crossing scores

Crossing provision



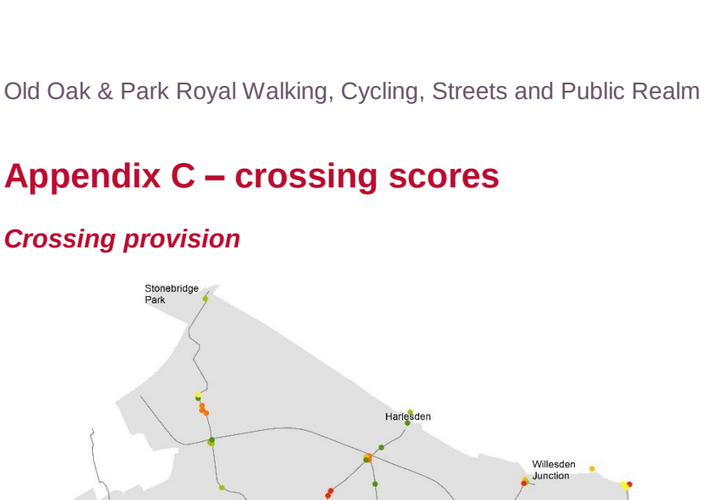
Crossing performance



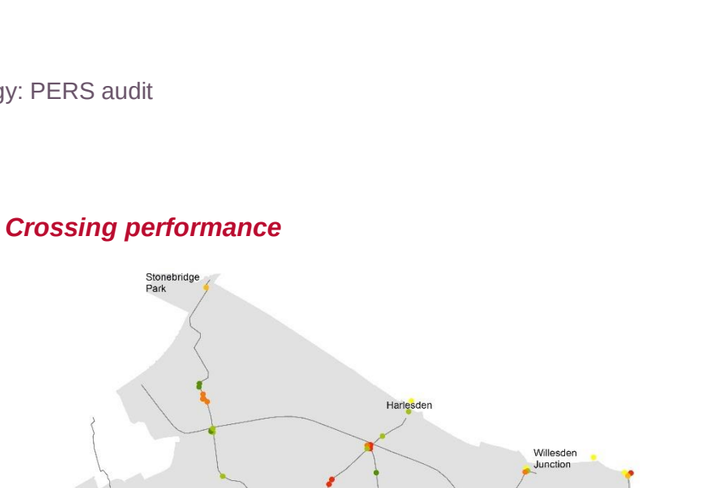
Delay



Deviation from desire line



Capacity



Legibility



Legibility for sensory impaired people



Gradient



Surface quality



Dropped kerbs



Obstructions



Maintenance



5th studio