AGAR GROVE

TRANSPORT ASSESSMENT

DECEMBER 2013

Document prepared on behalf of the London Borough of Camden (Applicant) by:

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Agar Grove, Camden

Transport Assessment

On behalf of **The London Borough of Camden**

Project Ref: 28732/002 | Rev: 3 | Date: December 2013

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1	15/11/2013	Draft issue to design team	AH	MD	RP
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Contents

Figures

Tables

Appendices

1 Introduction

1.1 Background

1.1.1 Peter Brett Associates LLP (PBA) has been commissioned by the London Borough of Camden (LBC) to prepare a Transport Assessment (TA) in support of the planning application for the regeneration of the Agar Grove Estate in Camden.

1.2 Existing Landuse

1.2.1 Agar Grove Estate was constructed by the London Borough of Camden in the 1960s and comprises 249 residential units; two small retail units; and community facilities. The Estate consists of a series of low / medium rise blocks of flats and an 18 storey tower (Lulworth House) along with areas of open space and surface car-parking.

1.2.2 The Estate currently comprises 249 dwellings, of which 212 are let to Council tenants and 39 are occupied by leaseholders. There is a small convenience store and café located to the Agar Grove frontage and a community room within the base of Lulworth House. There is a small block of flats owned by L&Q and a Sure Start Children Centre within the curtilage of the Estate but not included within the redevelopment proposals. To the north of the site lies a predominantly residential area dating from the mid to late 19th century and comprising an inner London suburb formed of a planned, gridded layout focused around Camden Square with a mixture of high-quality terraces and villas. Much of the area to the immediate north falls within the Camden Square and Rochester Conservation Areas.

1.2.3 To the east of the site beyond the mainline railway is the 1960s Benson and Forsyth Maiden Lane Estate which is currently undergoing refurbishment and intensification as part of the Council's estate regeneration programme. Further to the south-east lies the Kings Cross Opportunity Area which is currently undergoing major redevelopment.

1.2.4 The site location plan is shown in Figure 1.1. Figure 1.2 presents the existing blocks within the Agar Grove Estate.

1.3 Site Location

1.3.1 The site is located to the north east of the Grand Union canal and north of St Pancras International Station. The strategic location of the site is shown in Figure 1.1.

1.3.2 The redevelopment site is located to the south of Agar Grove, to the west of Camley Street and to the east of Agar Place and Wrotham Road.

1.3.3 The site boundary is shown in Figure 1.2; it is bounded to the south by railway lines. To the west it is bounded by residential units, to the north by Agar Grove and to the east by industrial units on Camley Street.

1.3.4 The Agar Children's Centre to the south of the site will remain in its current state, though servicing and emergency access will be considered for the facility through the site.

1.4 Proposed Development Schedule

1.4.1 The Agar Estate Regeneration project forms part of Camden's 'Community Investment Programme' (CIP) which aims to generate investment, deliver new homes and regenerate neighbourhoods. A detailed description of the application proposals is provided in the Design and Access Statement which, in broad terms, comprises:

- Demolition of the existing low-rise blocks (with the exception of the children's centre) and comprehensive refurbishment of Lulworth House
- Creation of 493 new homes (net increase of 244 units) including a mix of social rent, shared-ownership and private units designed to meet current housing needs and space standards (including a single decant for the majority of existing tenants)
- Replacement community and retail facilities along with new small-scale business space; and
- Landscaped open and amenity spaces to support the development and contribute towards the creation of a high-quality environment.

1.4.2 In addition to 249 units there are currently two retail units on the estate. Following redevelopment the site will have 493 homes. The proposed development quantum for the residential aspect of the estate is presented in Table 1.1. In addition to this there will be circa. 935m^2 of community and commercial space proposed for the site, however this will be ancillary to the residential and therefore not create any additional trips.

Table 1.1 Existing and Proposed Development Quantum

Unit size	Affordable	Intermediate	Market	Total
Total Existing	210	0	39	249
Total Proposed	216	37	240	493

1.4.3 A key component of the project brief is to deliver a phasing strategy that will allow the majority of existing residents to be re-located within a single decant without leaving the Estate. The development proposals will retain Lulworth tower, refurbishing it to provide a total of 148 units, ranging in size from studio to three bedroomed.

1.4.4 The other blocks on site will be demolished to make space for blocks A to L which between them will provide 345 units, ranging in size from one bedroom to four.

1.4.5 In addition to residential land uses there will be commercial and retail space provided, the majority of which will be located in Plot B or Lulworth.

1.5 Report Structure

1.5.1 A scope of works for this Transport Assessment was circulated to LBC Highways in June 2013. In addition to this a pre-application meeting was held with Transport for London (TfL). This TA is based on the scope of works agreed with LBC and TfL. The submitted scope of works is presented in Appendix A alongside the scoping response.

1.5.2 As agreed in the scope of works, this transport assessment has been structured as follows:

- Chapter 2 provides an insight into the existing conditions on site, in particular the site's connections with transport networks;
- Chapter 3 presents the development proposals in detail;
- Chapter 4 provides a comprehensive review of the relevant national, regional and local policy in relation to the proposed development;
- Chapter 5 presents the travel characteristics of the site, including the trip generation estimations as agreed with LBC Highways;

- Chapter 6 uses the trip generation estimations from Chapter 5 to assess the potential impact of the development on the highway;
- Chapter 7 uses the trip generation estimations from Chapter 5 to assess the potential impacts that the development could have on public transport;
- Chapter 8 presents the Delivery and Servicing Plan for the proposed development;
- Chapter 9 provides a framework Construction and Logistics Plan for the proposed development; and
- Finally, Chapter 10 will summarise and conclude the report.

1.5.3 A full Residential Travel Plan and a PERS audit report have been prepared by PBA and are appended to this Transport Assessment.

Figure 1.1 Strategic Site Location

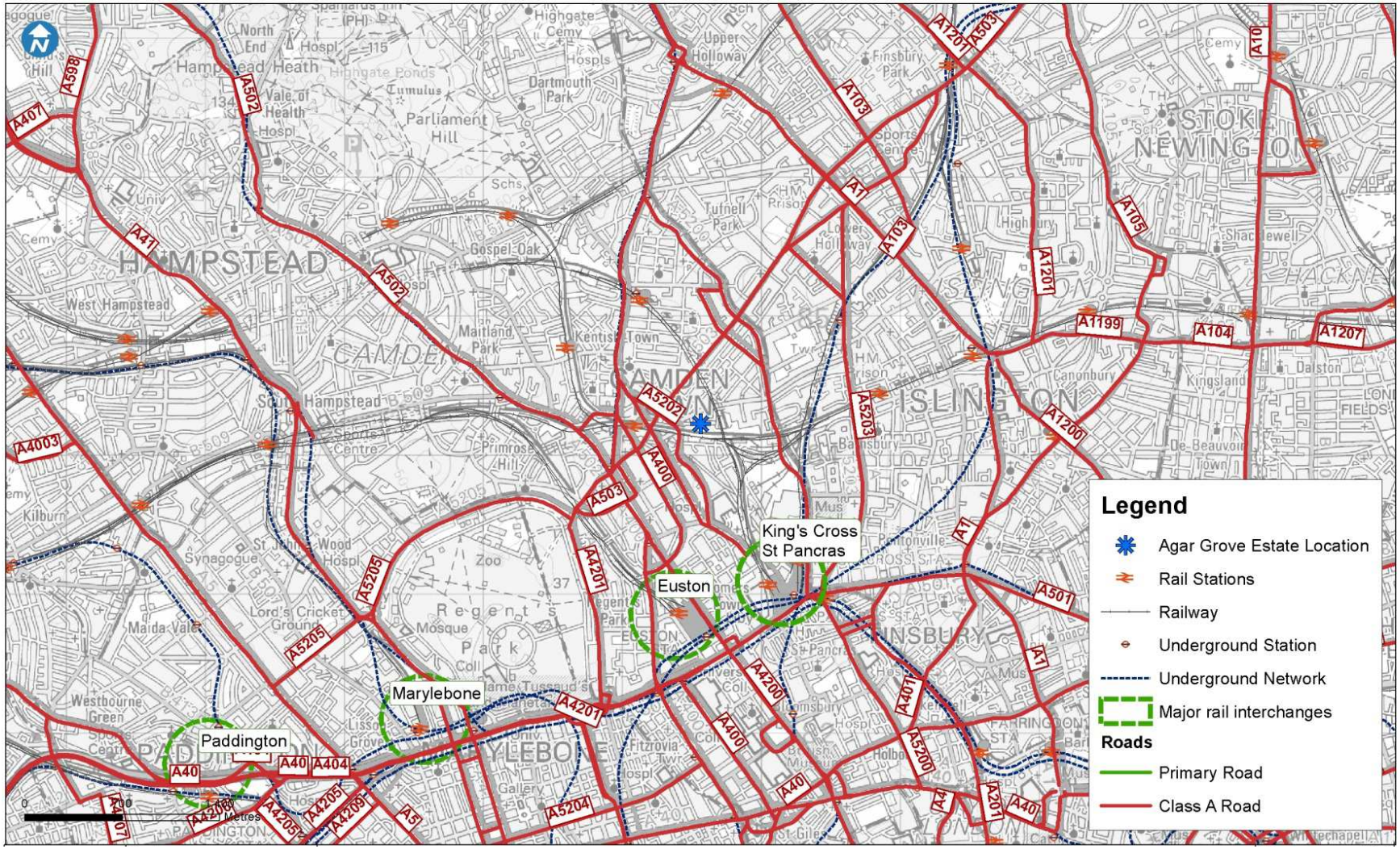


Figure 1.2 Site Boundary

2 Existing Condition

2.1 Introduction

2.1.1 The Agar Grove estate has been identified by LBC for regeneration as part of their community investment programme. The existing site land uses are presented in Section 1.2 and Figure 2.1 presents the site location plan in the local context. This section outlines the baseline conditions of the site, focussing on the transport conditions.

2.2 Existing Highway Network

2.2.1 The vehicular access to the site is via Agar Grove which links to York Way (A5200) in the east and St Pancras Way (A5202) in the west. A5202/Agar Grove junction and Agar Grove/A5200 junction are signal-controlled junctions.

2.2.2 Agar Grove is an approximately 5m wide two-lane carriageway with 2.5m footways on both sides and drop kerbs at accesses. There is also on-street parking on both sides of the road. Traffic calming is in place along Agar Grove in the form of speed cushions. Towards the St Pancras Way (A5202)/ Agar Grove junction, there is a dedicated cycle lane and Advanced Stop Lines (ASLs). ASLs can also be found at the Agar Grove/ York Way (A5200) junction.

2.2.3 St Pancras Way is restricted to one-way vehicular movements only; it provides two lanes in a southbound direction and is approximately 5m in width. Signal controls are in place at its junctions with Agar Grove and Camden Road. There are dedicated cycle lanes for the majority of the length of the road, including contraflow lanes between Georgiana Street and Camden Road. Footways are narrow on both sides of the carriageway of around 1.5m wide. Parking is restricted closer to the site but some on-street parking can be found near the St Pancras Way (A5202)/ Camden Road junction.

2.2.4 Camden Road (A503) runs to the north of the site and is part of the Transport for London Road Network (TLRN). Camden Road is approximately 11.4m in width and is signal-controlled at junction with St Pancras Way. Turning lanes are provided on junction approaches and bus lanes are in place along sections of the road. Footways are approximately 3m wide on both sides of the carriageway and are observed to be well-maintained.

2.2.5 The A1 is approximately two kilometres east of the site. The A1 is a major A road which connects London to Edinburgh, the part of the route that lies within London is TLRN road. Closer to the site, following the Highbury roundabout is a wide single carriageway of approximately 6m in width with bus lanes running on both sides. It then widens out into a dual carriageway passing the A103 until crossing with A503. Various parking restrictions can be found along A1, predominately red routes. Footways are observed to be wide, ranging from 4-6m in width with signal-controlled crossings and drop kerbs at accesses. Cycle facilities like storage racks and ASLs can be found along A1.

2.3 Existing Traffic Flows

2.3.1 Classified junction turning counts were undertaken on Wednesday July 17th 2013 during morning and evening peak periods. Counts were taken between 07:00 and 10:00 to cover the morning peak and between 16:00 and 19:00 to cover the evening peak period.

2.3.2 The junctions surveyed were:

- Agar Grove/ Murray Street/ Estate Access point; and
- Agar Grove/ St Pancras Way/ Randolph Street.

2.3.3 Table 2.1 presents the cumulative traffic movements at the survey junctions, in terms of Passenger Carrying Units (PCUs), for the morning and evening peak hours.

2.3.4 Turning counts are given in terms of PCUs in Figures 2.2 and 2.3. Appendix B presents the detailed survey results and outputs.

Table 2.1 Total PCUs Observed at Agar Grove Junctions in Morning and Evening Peak Hours

Junction	AM peak hour	PM peak hour
Agar Grove/ Murray Street/ Estate Access	965.30	804.30
Agar Grove/ St Pancras Way/ Randolph St	1180.80	882.40

Existing Junction Modelling

2.3.5 The junction between Agar Grove/ Estate Access road is presently the main vehicular access to the site and will remain the main point of access for the proposed development and therefore was also assessed for capacity. The current access junction was modelled using the priority intersection module of Junctions 8. The model for present scenario is presented in Appendix C with a summary of results presented in Table 2.2.

	AM Peak				PM Peak			
Existing	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Site access	0.03	8.53	3%	A	0.03	8.89	3%	A
Right Turn In	0.01	5.35	1%	A	0	4.62	0%	A

2.3.6 As can be seen in Table 2.2, there is sufficient spare capacity at the current access junction in the morning and evening peak hours with maximum of 97% on access road.

2.4 Existing Parking Situation

2.4.1 There are currently approximately 118 parking spaces on site, 20 of which are garages and 98 are on-street spaces. Of these 118 spaces, 59 spaces are presently void; the remaining 59 are let to permit holders. Nine of the permit holder spaces are let to people residing elsewhere and not on the Estate. The current parking permit information for residents of Agar Grove is presented in Appendix D.

2.4.2 It is LBC's aspiration that the returning residents will be re-provided with a car parking permit if they already have one for the existing site. The rest of the development will be car-free. Therefore 50 spaces are proposed to be re-provided for the returning residents.

2.4.3 The Agar Grove estate lies within the Camden Controlled Parking Zone (CPZ) called CAN. The parking in this zone is restricted to residents with parking permits only during the hours of 08:30 and 18:30 from Monday to Friday.

2.4.4 Agar Grove has 25 parking spaces for Permit Holders only, between St Pancras Way and Murray Street. There are also six pay and display parking bays on Agar Grove immediately outside the site. Agar Place has four bays for Permit Holders only and Wrotham Road has six Permit Holders only bays.

2.4.5 Within reasonable walking distance from the site, there are four Car Club bays. The closest bay is at A503 Sandall Road, an approximately 8-minute walk from the site. One vehicle is available at the Sandall Road bay. The other three are located on Bartholomew Road; Hammond Street and Gaisford Street, all with two vehicles.

2.4.6 Figure 2.4 presents the Controlled Parking Zone containing the site and Figure 2.5 presents the location of Car Club bays in proximity to Agar Grove Estate.

2.5 Existing Public Transport Facilities

2.5.1 Bus service 274 runs directly past the site on Agar Grove, with two eastbound stops and two westbound stops outside of the site on Agar Grove. There is an eastbound and a westbound stop between the Agar Grove Estate shops and Agar Place; the other eastbound and westbound stops are on Agar Grove, slightly east of the junction with Murray Street.

2.5.2 When considering access to public transport, TfL consider eight minutes to be the maximum time a person will walk to access a bus stop, only including bus stops within 640m of the point of interest in PTAL calculations. Table 2.2 details the services which stop within 640m (eight minutes walking distance) of the site.

2.5.3 As can be seen in Table 2.2, there are six bus services that stop within 640m walking distance of the Agar Grove Estate in both directions. These six bus services have a combined peak frequency of 51 buses per hour during the morning and 52 buses during the evening network peak hour.

2.5.4 In addition to these services there are a further seven bus services which stop within 640m walking distance of the site in southbound direction only; this is because Camden Gardens is within a one-way system. In the northbound direction these services either stop at Hawley Road which is 700m walking distance from the site, or at Camden Town which is 900m walking distance from the site. These services have a combined peak frequency of 61 buses per hour during the morning peak and 63 buses per hour during the evening peak.

2.5.5 Though the bus stops on both Hawley Road and at Camden Town are just outside of the TfL defined 640m walking distance, some residents may still choose to use them. If the frequencies of these routes are combined with the frequencies of the six routes which stop within 640m in both directions then there is a total peak frequency of 112 buses per hour in the morning peak and 115 buses per hour in the evening peak.

Table 2.3 Bus Services within 640m of Agar Grove and their Peak Hour Frequencies

Number	Route	Nearest stop	Peak Frequency (buses per hour)	
			AM	PM
274	Angel Islington – Lancaster Gate Station	Agar Grove Estate/ Murray St	7	7
29	Lordship Lane – Trafalgar Square/Charing Cross Stn	Murray Street (on Camden Road) or Camden Road Station – both approx. 300m walk from site	12	12

Number	Route	Nearest stop	Peak Frequency (buses per hour)	
253	Hackney Central Station – Euston Bus Station	As before	10	10
46	Lancaster Bus Station – St Bartholomew's Hospital	Camden Gardens (600m) or Camden Road Station (300m)	6	6
390	Archway Station – Palace Gardens Terrace/ Notting Hill Gate	Vale Royal/ Maiden Lane (600m) or Agar Grove/Maiden Way (600m)	8	8
88	Camden Gardens – Clapham Common Old Town	Camden Gardens (600m) *(terminates at Camden Gardens)*	8	9
Total buses per hour for routes within 600m of the site in both directions:			***51***	***52***
24	Grosvenor Road – Royal Free Hospital	Camden Gardens (600m) *	10	10
27	Chiswick Business Park – Chalk Farm/ Morrisons	Camden Gardens (600m) *	7	7
214	Highgate School/Hampstead Lane – Finsbury Square	Camden Gardens (600m) *	7	7
134	North Finchley Bus Station – Tottenham Court Road Station	Camden Gardens (600m) *	10	12
168	Royal Free Hospital – Dunton Road	Camden Gardens (600m) *	10	10
31	Bayham Street – White City Bus Station	Camden Gardens (600m) *	10	10
C2	Parliament Hill Fields – Victoria Bus Station	Camden Gardens (600m) *	7	7
(Buses per hour for routes that stop within 600m of the site in one direction only)			(61)	(63)
**Route only stops at Camden Gardens in one direction, these routes stop at either Camden Town or Hawley Road in the opposite directions. These stops are 900m and 700m walk from the site respectively.*				

2.5.6 TfL consider 12 minutes be the maximum time a person would walk to reach a National Rail or London Underground Station and therefore only consider stations within 960m from the origin in public transport accessibility level (PTAL) calculations.

2.5.7 The nearest railway connection to the site is Camden Road Station which is approximately 300m walking distance from the site. Camden Road Station is served by the London Overground; specifically it lies on the line between Clapham Junction/ Richmond and Stratford. There is a regular service with circa eight trains in each direction during the morning peak hour.

2.5.8 Camden Town Station which is part of the London Underground network lies approximately 700m walking distance to the west of the site. It is on the Northern Line with a regular service, particularly during the peak hours with an approximate frequency of 40 trains per hour.

2.5.9 The services from Camden Road and Camden Town stations during the peak hours are summarised in Table 2.3. As can be seen in Table 2.3, the two stations have combined frequencies of nearly 100 trains per hour during the peak hours.

2.5.10 Figure 2.6 shows the local transport network in relation to the site.

Table 2.2 Frequency of Services from Camden Road and Camden Town Stations

Station	Direction	Peak Frequency (tph)	
		AM	PM
Camden Road (Overground) (300m walk)	Eastbound	8	8
	Westbound	8	8
Camden Town (Northern Line) (700m walk)	North (Edgware)	20	19
	North (High Barnet/ Mill Hill East)	21	19
	South (Kennington/Morden from High Barnet/Mill Hill East)	19	21
	South (Kennington/Morden from Edgware)	20	21
Total		**96**	**96**

2.6 Existing Public Transport Accessibility

2.6.1 Public Transport Accessibility Levels (PTALs) are a measure of the accessibility of a point from a development site to the public transport network, taking into account walk access times and service availability. The method is essentially a way of measuring the density of the public transport network at particular points. A PTAL score can range from 1a to 6b, where a score of 1 indicates a “very poor” level of accessibility and 6b indicates an “excellent” accessibility level.

2.6.2 The PTAL on the Agar Grove estate varies; it is between 5 and 6a to the north near Agar Grove and falls towards the centre of the site. PTALs have been calculated using Transport for London (TfL)’s online calculator at (www.webptals.org.uk). The detailed output from the online calculator is given in Appendix E.

2.6.3 The site is generally well accessed from public transport. Bus route 274 runs past the site on Agar Grove and the Overground station is approximately 700m walk from the site. St Pancras Way and York Way provide access to further bus routes. Beyond PTAL the site is well accessed by public transport and the routes which do stop within walking distance of the site provide quick links to local jobs and services.

2.7 Existing Pedestrian and Cycle Accesses

2.7.1 Cycle and pedestrian access from the north is from Agar Grove and to the west from Wrotham Road via St Pancras Way and Agar Place via Agar Grove.

2.7.2 The frontage of the estate onto Agar Grove is fenced with private gated pedestrian accesses at the entrances to the blocks. At the north eastern corner of the site there is a pedestrian and vehicle access which runs along the eastern border of the site and towards the car park at the centre of the site and Lulworth. This access does not provide a through route to the south or east of the site.

2.7.3 Pedestrian connections to the site are good. Agar Grove is within a 20mph speed restricted area and has traffic calming measures. There is a good quality at-grade zebra crossing near to the intersection of Agar Grove and Murray Street providing a safe and convenient way for residents of the estate and the wider community to access the retail units here. At the crossroads between Agar Grove, Randolph Street and St Pancras Way, there are signalised crossing points on three arms of the junction, providing pedestrian access to Camden Road Station, Camden Town Station and Camden Town centre.

2.7.4 Figure 2.7 presents the walking catchments for the site, identifying the facilities within a 5, 10 or 15 minute walking time. As can be seen in Figure 2.6, there is a cycle hire docking station, a GPs surgery and two Car Clubs within five minutes walking distance of the site. There are primary and secondary schools within ten minutes walking distance from the site.

2.7.5 Figure 2.8 presents cycling catchments showing what is 5, 10 and 15 minutes cycling time of the site. As shown London Underground services can be accessed from Kentish Town or Camden Town within 5 minutes cycling time or King's Cross within 10 minutes cycling time.

2.7.6 Alongside Camley Street there is a segregated pedestrian and cycle route, however it does not provide a direct access route to the estate.

2.7.7 There is an off-carriageway cycle route between Agar Grove and Stratford Villas to the north of the site. Agar Place, to the west of the site, has a dedicated cycle turning lane onto Agar Grove. The Grand Union Towpath offers an off-carriageway cycle route to the south of the site. Cycling networks local to the site are presented in Figure 2.9.

2.7.8 The nearest cycle hire docking station to the site is located at Camden Road Overground Station and has 45 cycle hire docking stations. The redevelopment of the nearby Maiden Lane Estate will include a new Barclays Cycle Hire Docking Station with space for 24 bikes on York Way.

2.7.9 There are no formal cycle parking spaces currently provided on site.

2.7.10 A PERS audit of the site has been undertaken, the results of which are in the report in Appendix F.

2.7.11 The audit found no significant areas for concern on the surrounding pedestrian network, though did note the need to re-consider crossing provision on the southern arm of St Pancras Way at its intersection with Agar Grove and Randolph Street, in discussions with TfL should there be a desire line.

2.8 Accident Information

2.8.1 Accident data was requested from TfL to cover the area within a 500m radius of the Agar Grove Estate. The data spans the three year period to March 2013. The data is mapped and presented in Figure 2.10 whilst the detailed TfL output is presented in Appendix G.

2.8.2 Over the three year period, there were 115 accidents within the identified area. One of these accidents was fatal, twelve were serious and the remaining 102 were of a slight nature.

2.8.3 The one fatal accident occurred at the junction between Camden Road/ St Pancras Way when a skip lorry collided with a cyclist on its nearside whilst turning left. There appears to be a

cluster of accidents at this junction however most of these are vehicle related and it does not form part of a key route from the site to a local facility.

2.8.4 Closer to the site, 14 accidents occurred on Agar Grove, Wrotham Road, Agar Place and Randolph Street combined. Of these accidents, one was serious whilst the remaining accidents were slight in nature. The serious accident occurred on Agar Grove when a goods vehicle collided with a cyclist on the nearside whilst pulling over to park.

2.8.5 Of the 14 accidents, two involved pedestrians and both were whilst crossing Agar Grove. The first accident occurred when a pedestrian crossed the road near the junction with Agar Place, the second occurred when a pedestrian crossed at the junction between Agar Grove/ St Pancras Way/ Randolph Street, near the arm where no pedestrian crossing facility is currently provided.

Figure 2.1 Site Location Plan

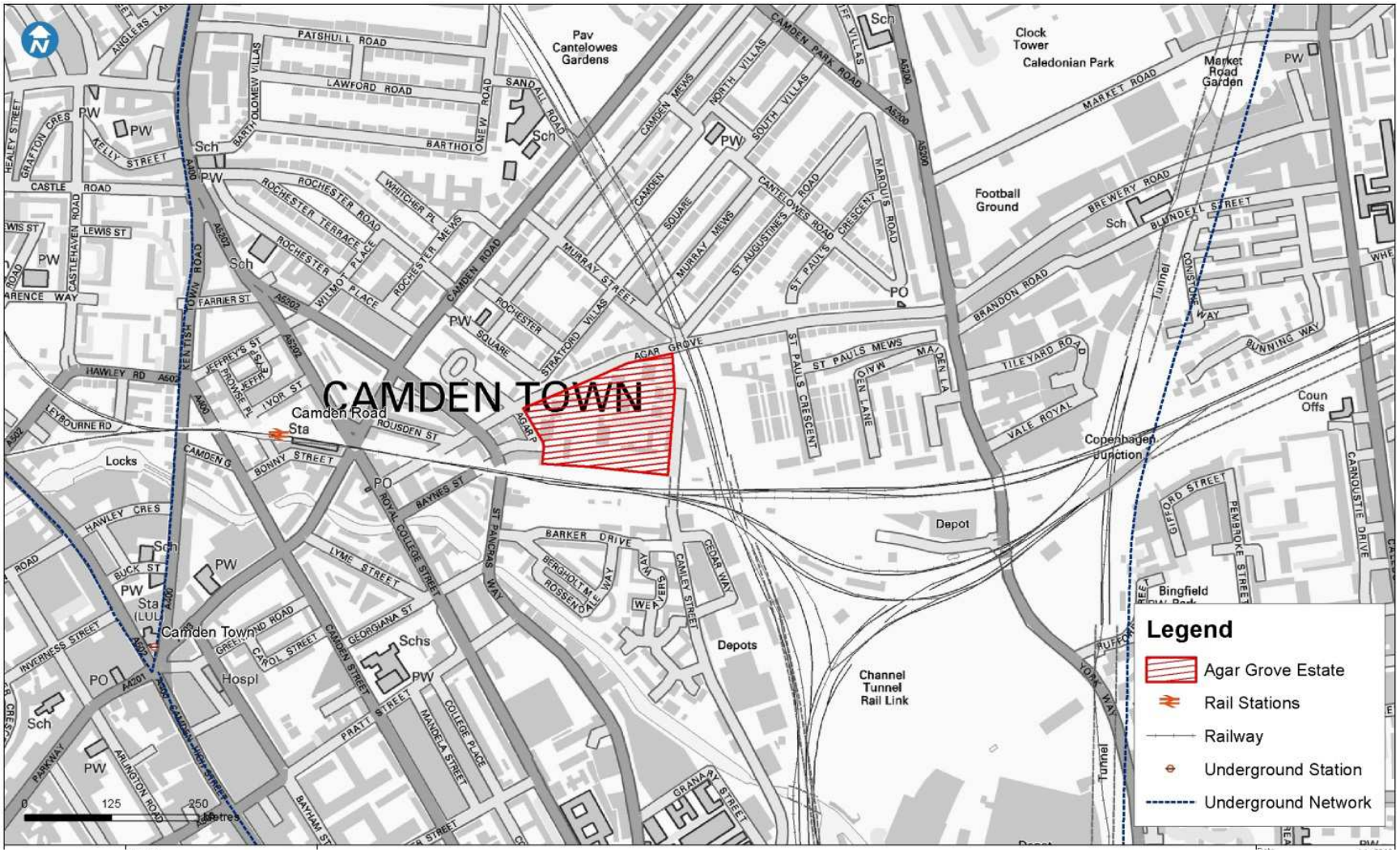


Figure 2.2 Turning Counts at the Junction b/w Agar Grove/ Murray Street

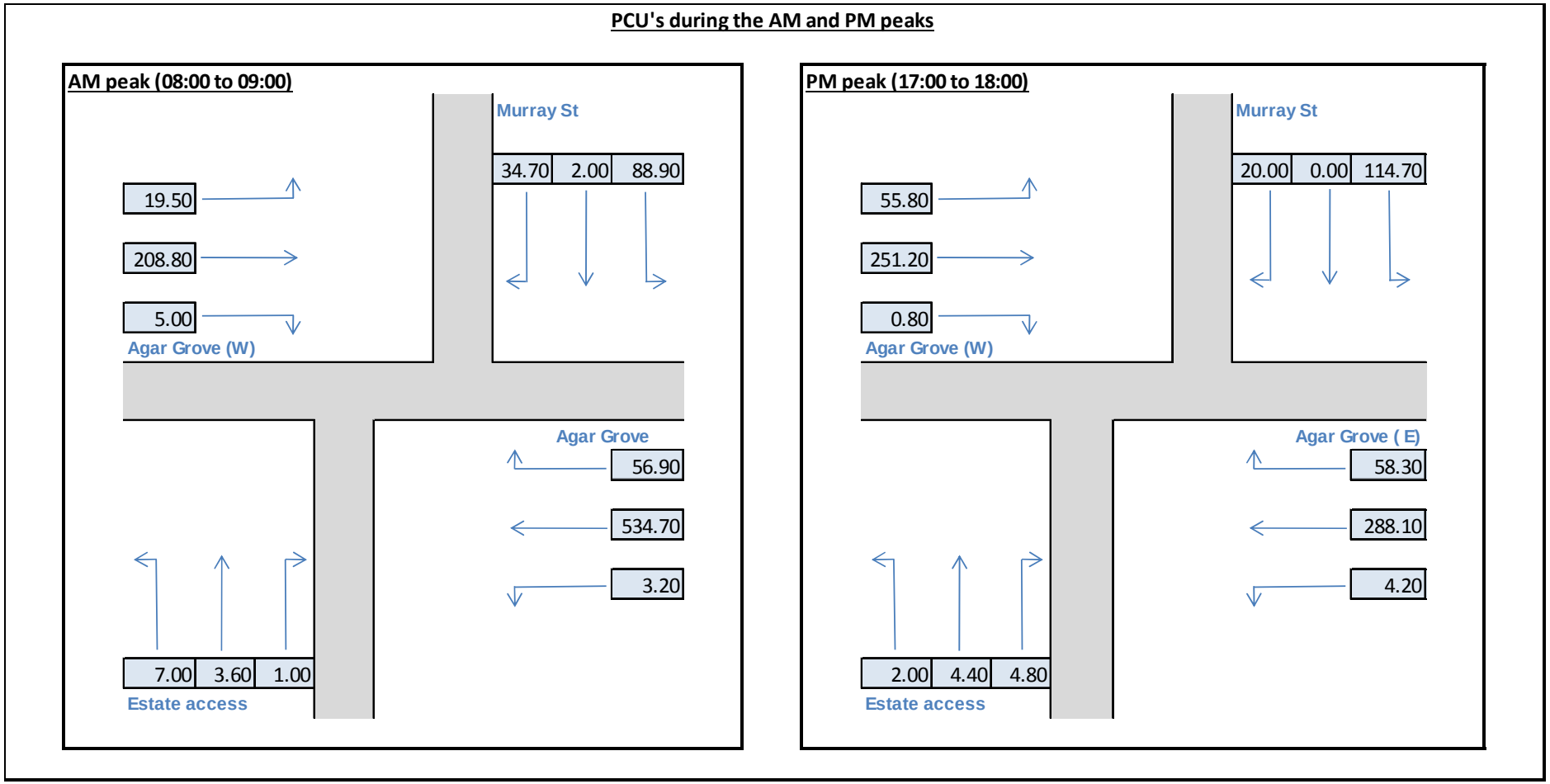


Figure 2.3 Turning Counts at the Junction b/w Agar Grove/ Randolph Street/ St Pancras Way

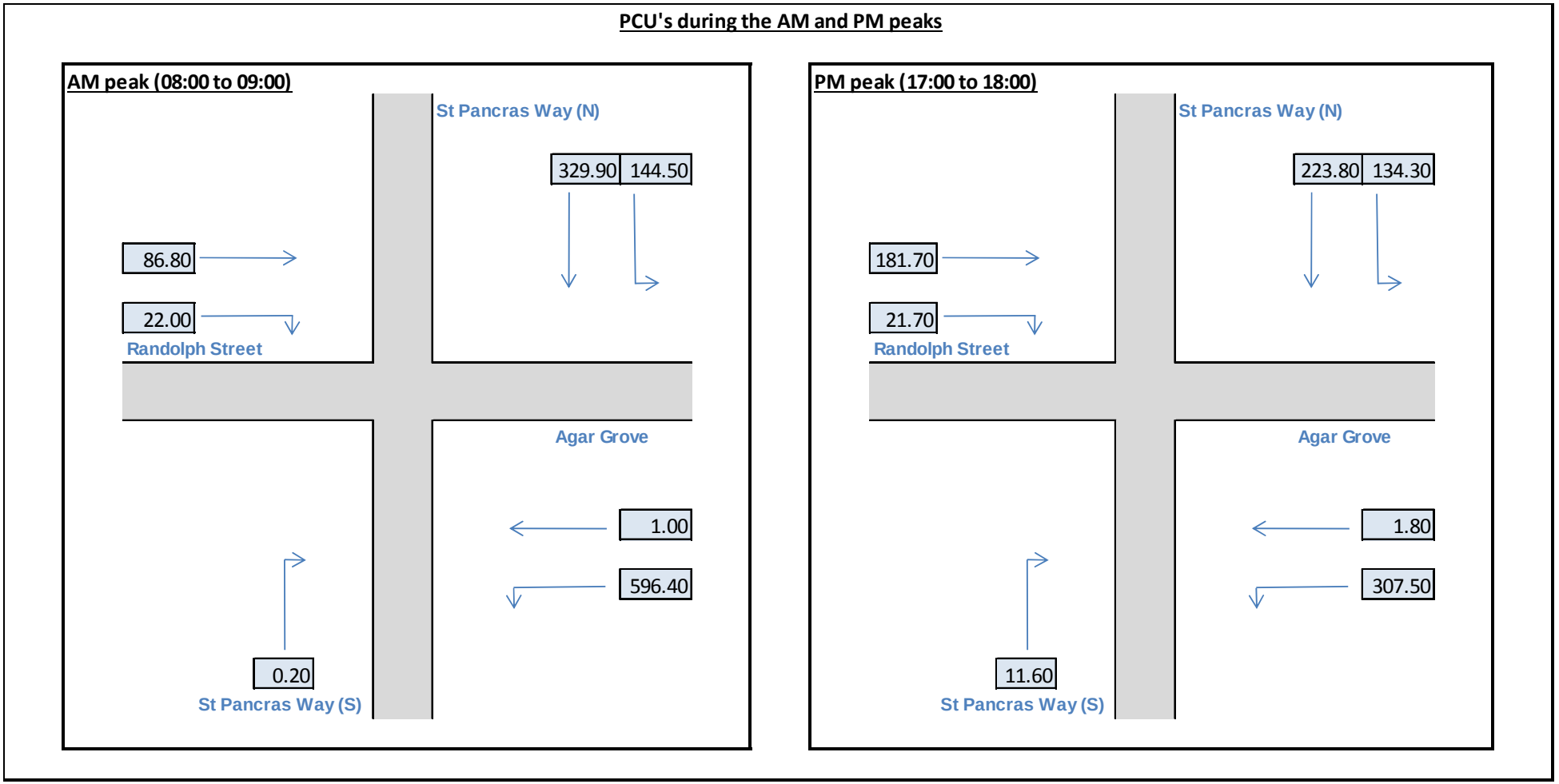


Figure 2.4 Controlled Parking Zones

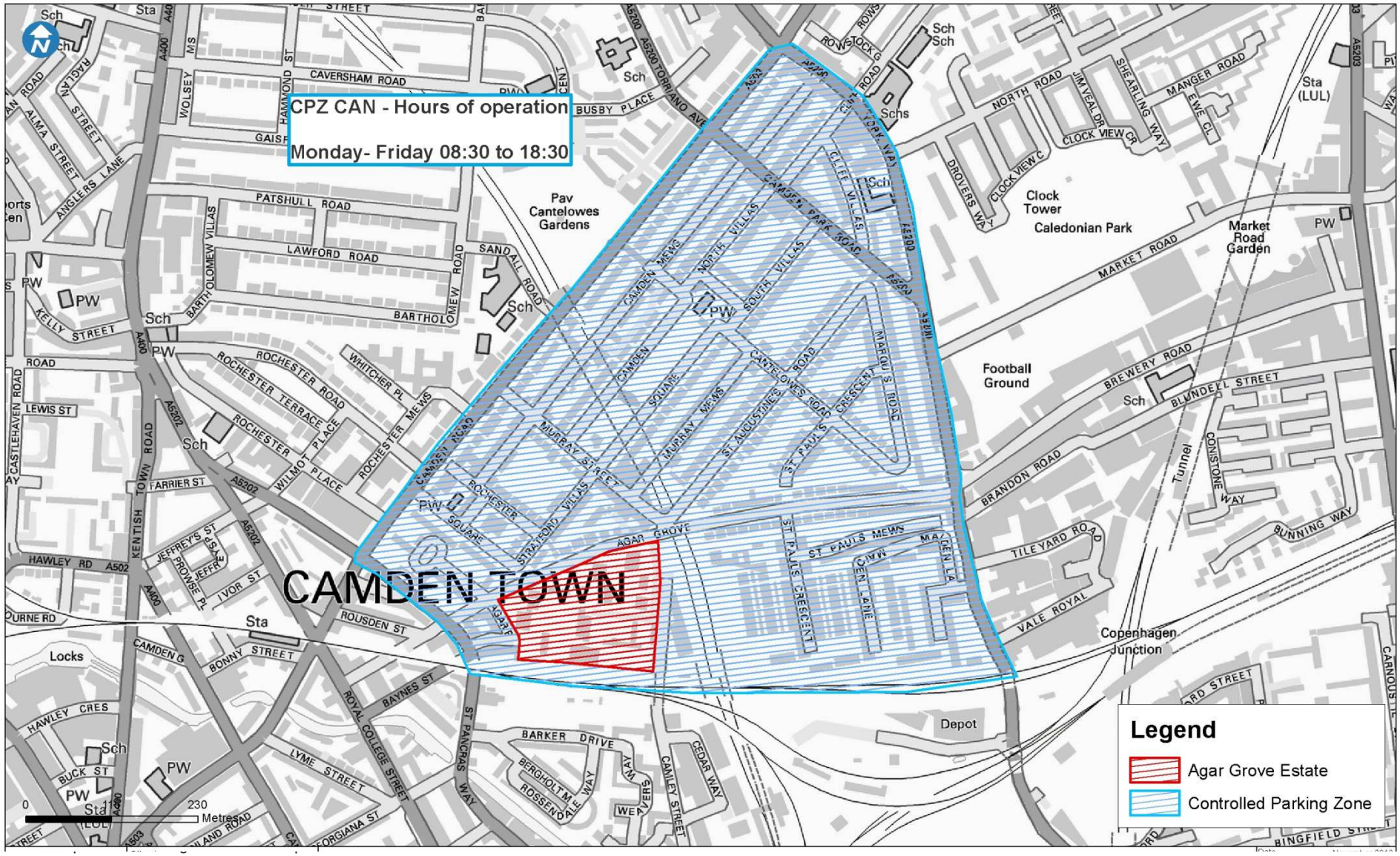


Figure 2.5 Car Club Bays in the Vicinity of Agar Grove Development

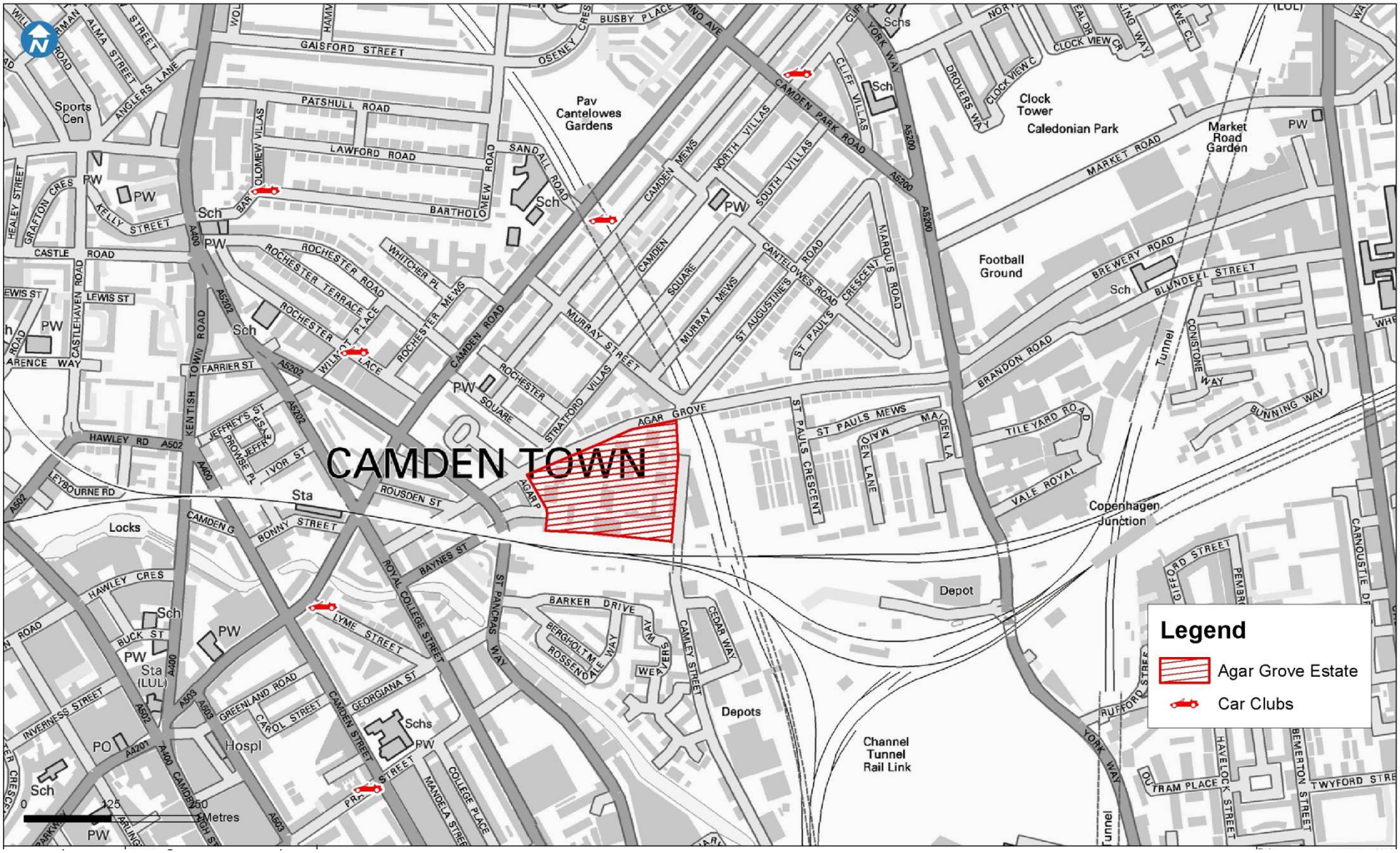


Figure 2.6 Public Transport Connections Local to the Site

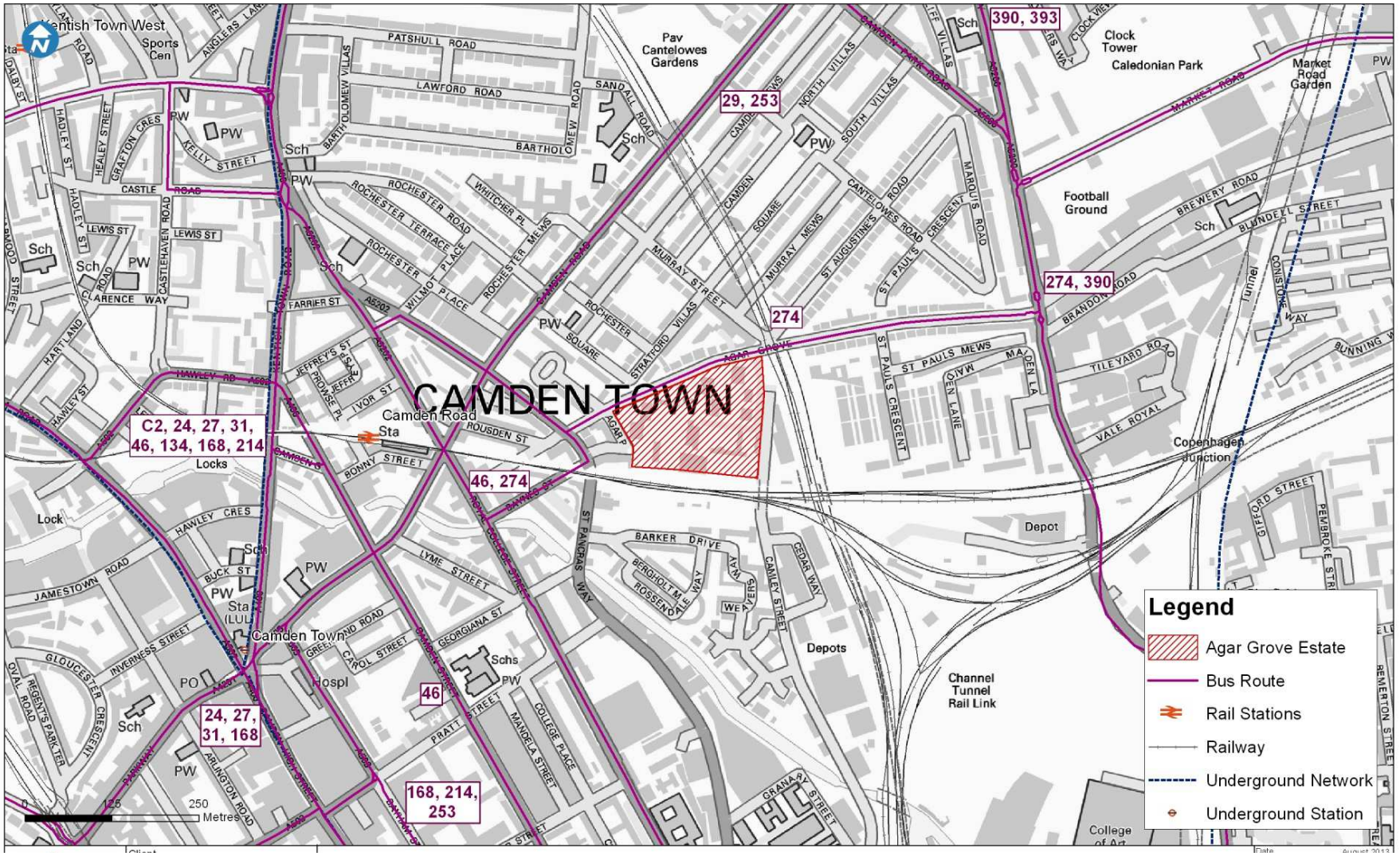


Figure 2.7 Walking Catchments of 5, 10 and 15 minutes from the Site

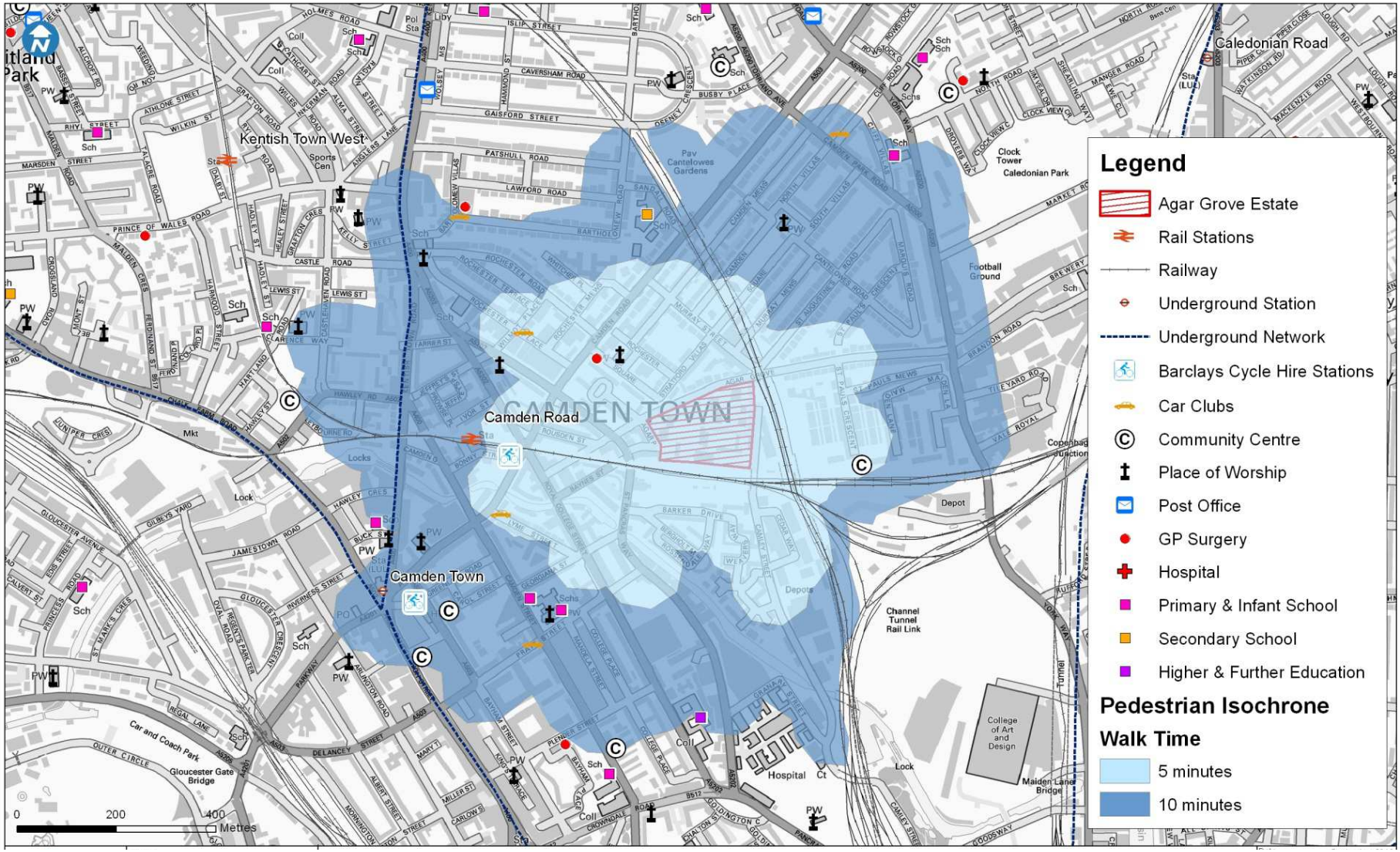


Figure 2.8 Cycling Catchments of 5,10 and 15 minutes from the Site

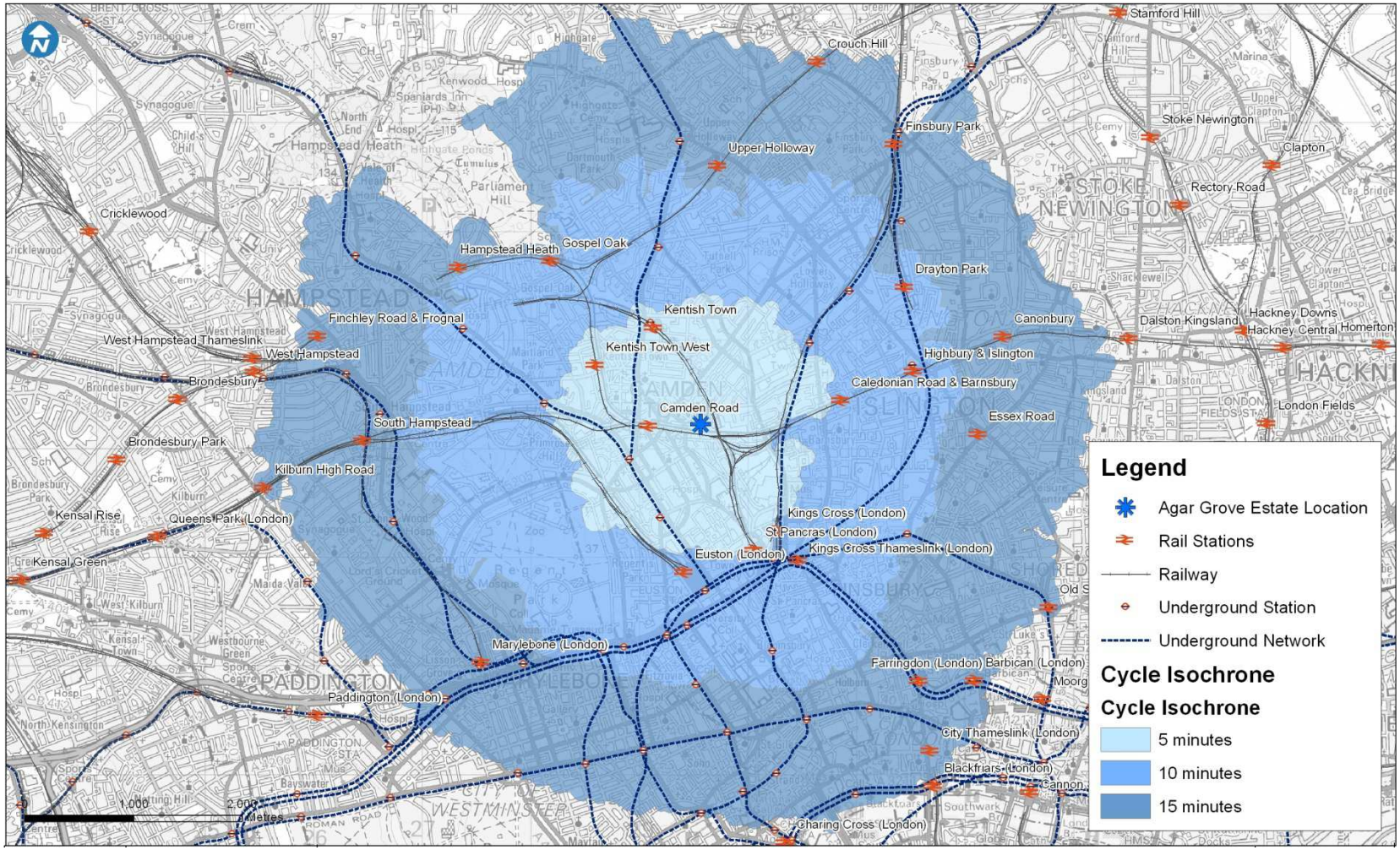


Figure 2.9 Cycling Networks Local to the Site

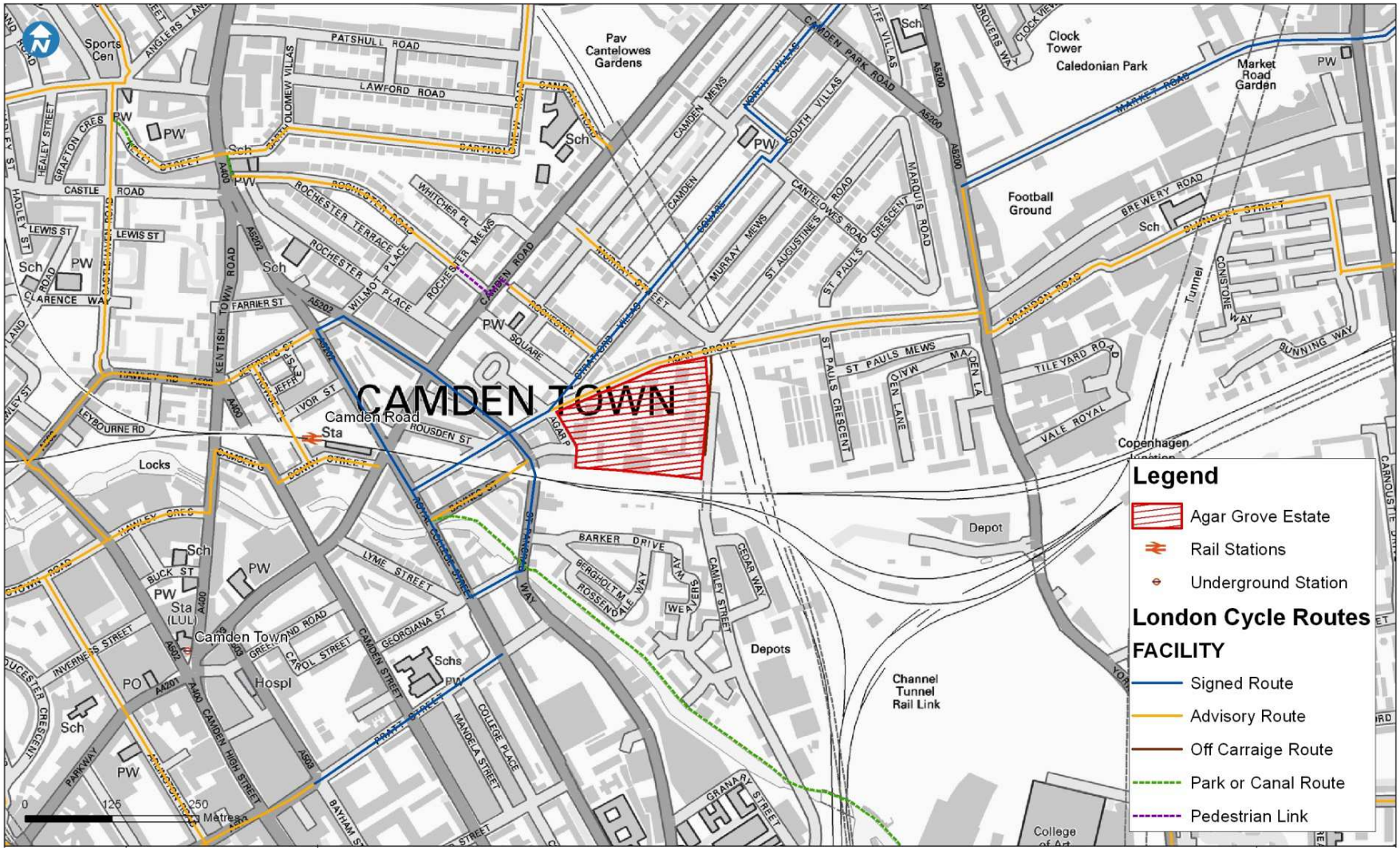


Figure 2.10 Accidents During the Three Year Period to March 2013

3 Development Proposals

3.1 Introduction

3.1.1 The propose redevelopment will include:

- Demolition of the existing low-rise blocks and comprehensive refurbishment of Lulworth House
- Creation of new homes to re-house existing Council tenants in response to their current housing needs and to current design / space standards
- Phasing the development to enable a single decant for tenants as far as possible
- Creation of additional new homes including private, share-ownership and social rent to create a mixed and inclusive community and generate sufficient capital receipt to deliver the project
- Appropriate open space and amenity to support the development and contribute towards the creation of a high-quality environment

3.1.2 The Agar Grove will be redeveloped to provide 493 residential units. Lulworth tower will be retained and refurbished whilst the remainder of the estate will be demolished for redevelopment.

3.2 Proposed Development Schedule

3.2.1 It is proposed that the site be redeveloped in separate parcels of land with blocks A-L and Lulworth tower considered separately. Table 3.1 presents the proposed development schedule by size of units and tenure. Figure 3.1 presents the proposed masterplan for the Agar Grove redevelopment.

Table 3.1 Proposed Development Quantum

Unit size	Affordable	Intermediate	Market	Total
Studio/ One Bedroom unit	62	22	118	202
Two bedrooms	89	15	106	210
Three bedrooms	40	-	16	56
Four bedrooms	25	-	-	25
Total	**216**	**37**	**256**	**493**

3.2.2 In addition to the residential development quantum presented in Table 3.1 there will also be circa 935m^2 of commercial and community space ancillary to the development. This will include a community hall, workspaces, commercial space and some retail space. This will primarily be provided in blocks B, G and JKL.

3.2.3 The redevelopment of Agar Grove is expected to take place in five phases with the first phase completed in 2016 and final phase to be completed by 2023.

3.3 Proposed Access Arrangements

3.3.1 The current site provides two main vehicular access points and two accesses to parking courtyards.

3.3.2 The proposed access arrangements will include introducing a one-way arrangement within the site. The current access adjacent to Camley Street will be maintained and will be one-way southbound only. A new access from Agar Grove is proposed and this will serve as a one way exit only for the site. The internal street network will operate as a one-way arrangement providing 3m lane widths and with pedestrian and cycle priority.

3.3.3 Figure 3.2 presents the proposed access arrangements.

3.4 Proposed Parking

3.4.1 It is proposed that no car parking be provided for the new residents and in future, they will not be entitled to on-street parking permits either. It is the aspiration of LBC to re-provide the existing 50 spaces used by existing residents as part of the new development. These spaces will however be phased out or converted to spaces for Blue Badge holders over time as no new tenants will be eligible for parking. The current parking permit information is presented in Appendix D.

3.4.2 It is proposed that two of the 50 spaces re-provided will be for disabled users as two permit holders currently have Blue Badge permits. In addition to this five disabled spaces will be provided for disabled users. Further two Car Club bays are also proposed at the junction between new access road and Agar Grove. This will not only provide the access to Car Club spaces for the new Agar Grove residents but also for the community. This gives a total parking provision of 57 parking spaces, of which seven will be disabled parking spaces. All of the parking spaces can be used as disabled friendly spaces and could provide disabled parking for future use.

3.4.3 The London Plan also requires 20% of all parking spaces to be provided with electric vehicle charging points, with a further 20% to be provided in future should this demand increase. Accordingly 11 spaces will be provided with electric vehicle charging points with potential to increase to 22 in future. These spaces are provided distributed throughout the site.

3.4.4 The parking arrangement is presented in Figure 3.3.

3.5 Proposed Cycle Parking

3.5.1 It is proposed cycle parking be provided in accordance with London Plan Standards, Early Minor Alterations from 2012. Table 3.2 presents the level of cycle parking proposed.

3.5.2 No cycle parking is required for the community and commercial spaces according to the London Plan Standards as individually these do not pass the thresholds for cycle parking according to the London Plan Standards. However 10 spaces will be provided.

Table 3.2 Cycle Parking Proposed According to London Plan Standards.

Unit size	Number of units	Parking Provision according to London Plan Standards
Studio/ One Bedroom unit	202	202
Two bedrooms	210	210
Three bedrooms	56	112
Four bedrooms	25	50
Total for residents	493	574
Visitor Parking	-	13
Commercial/ Community	935m^2	10
Total		

3.6 Proposed Delivery and Servicing Arrangements

3.6.1 It is proposed that the site is accessed for delivery and servicing as per the current private vehicle access arrangement. The details for the servicing and deliveries are provided in Chapter Eight.

3.6.2 The refuse collection will take place as per the same days and time as the current situation.

3.6.3 A secure, dedicated frontage zone is proposed to the children's centre. Service and refuse access for the children's centre will still be possible via the controlled access point, with an access path to be provided between the children's centre and the residential block to the west; this would connect to the fire exit through the western boundary wall.

3.6.4 The commercial and community spaces in Blocks G and B respectively will be serviced via the new internal road network. The retail space in Block JKL will be serviced through Agar Grove.

3.7 Proposed Pedestrian and Cycle Accesses

3.7.1 The redevelopment will make the site more integrated with the surrounding network and other residential areas. The existing pedestrian and cycle access points will be retained in addition to the following proposed access points:

- The pedestrian and cycle link that currently exists between Agar Grove and Camley Street is proposed to be connected through to the development.
- Another access point onto Agar Grove will be created to the north of the site called Lulworth Avenue, which will be pedestrian and cycle priority.

3.7.2 The internal road network is designed as shared surface and will have pedestrian and cycle priority at all times.

3.7.3 The proposed internal network will dramatically enhance the pedestrian and cycle connectivity, not only for the residents of Agar Grove but also for the wider community.

3.8 Other Consented Schemes

3.8.1 The Maiden Lane Estate lies to the east of the Agar Grove Estate, across the railway tracks. It is currently undergoing redevelopment. This redevelopment will see the removal of 1509m^2 of light industrial uses and 36 residential units to be replaced with 265 residential car-free units, 550m^2 of A1 retail/A3 Café, and up to 1000m^2 of workshop/office B1 use. In addition 443 residential units will remain on the Maiden Lane Estate, bringing the total number of residential units after redevelopment up to 708.

3.8.2 This redevelopment will include two car club bays and a new Barclays Cycle Hire Docking Station for 24 bikes along York Way.

Figure 3.1 Proposed Agar Grove Masterplan

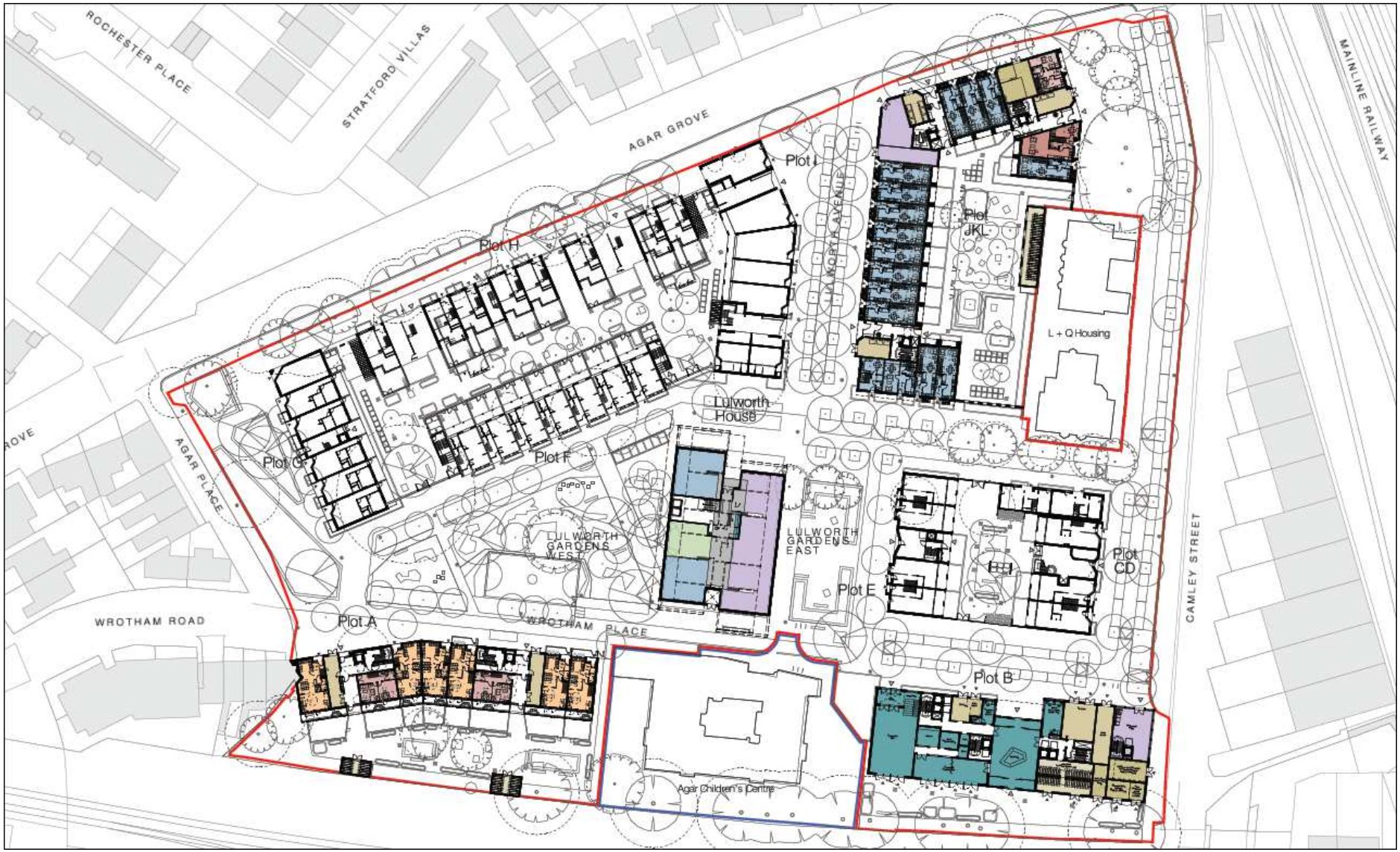


Figure 3.2 Proposed Access Arrangements

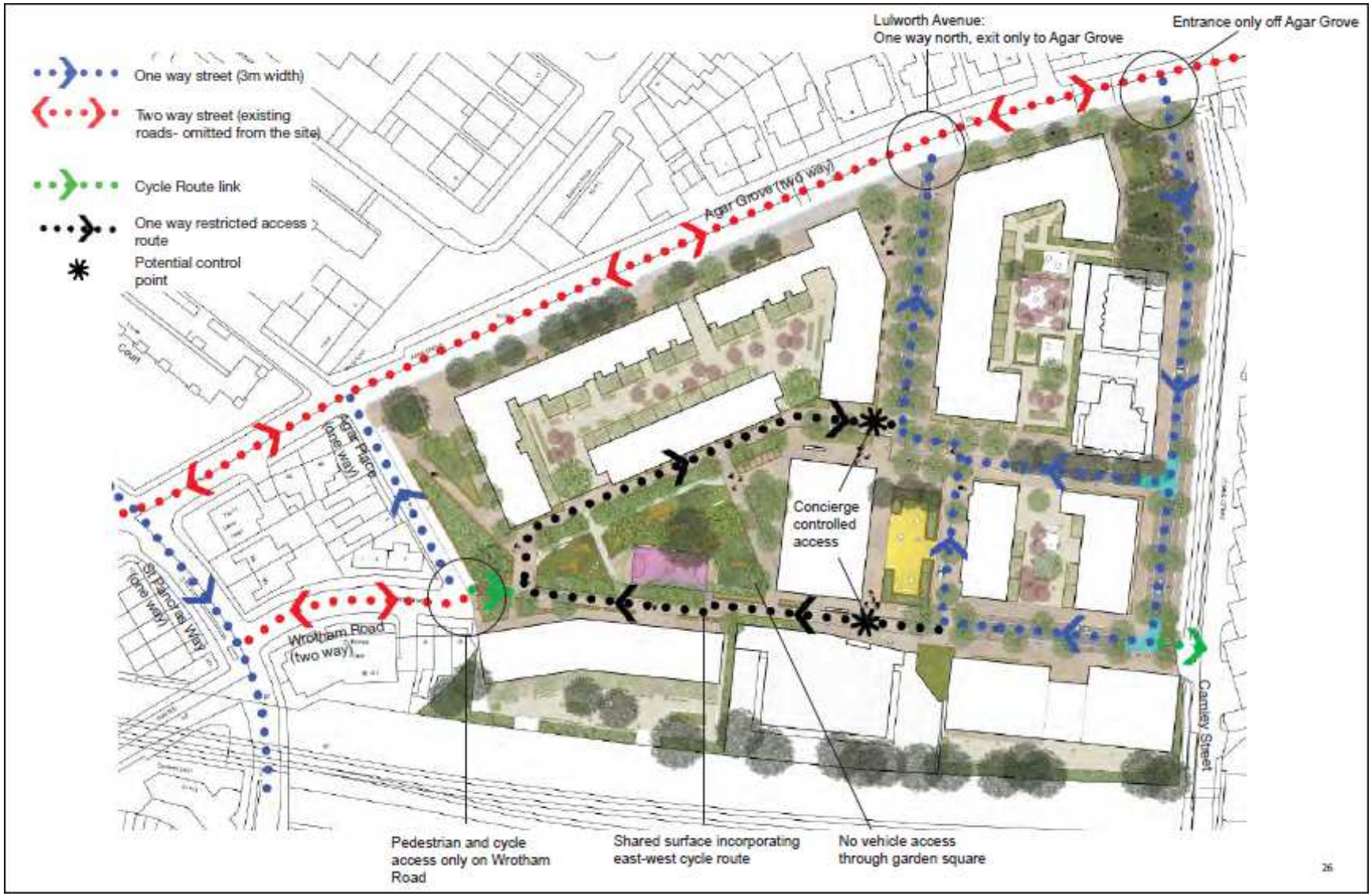


Figure 3.3 Proposed Parking Arrangements

4 Policy Review

4.1 Introduction

4.1.1 This section provides a review of the existing national, regional and local policy and discusses how the proposed development accords with these policy objectives.

4.2 National Planning Policy Framework (NPPF)

4.2.1 The National Planning Policy Framework (NPPF) was published on 27th March 2012; it seeks to facilitate sustainable development. In respect of Transport, the NPPF advocates that planning policies and decisions should consider whether:

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

4.2.2 At a more detailed level, the NPPF states that developments should be located and designed in order to:

- Give priority to pedestrian and cycle movements and have access to high quality public transport facilities; and
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians.

4.2.3 Priority is given to providing low emission vehicles in the NPPF, in particular charging facilities.

4.2.4 The NPPF stresses the importance of providing a Travel Plan for all developments that generate significant amounts of movement

4.3 The London Plan

4.3.1 The London Plan was published in July 2011 to provide an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. Transport was noted as having a fundamental role in addressing the objectives of the Plan.

4.3.2 Chapter 6 of the London Plan identifies polices to support the delivery of an efficient and effective transport system and places emphasis on encouraging sustainable travel by enhancing walking policies, promoting electric car use and improving public transport capacity.

4.3.3 The relevant policies included within this Chapter are outlined below:

Policy 6.1 Strategic Approach

4.3.4 The mayor will work with key parties to encourage integrated transport systems. This will be achieved by;

- Encouraging patterns and nodes of development that reduce the need to travel, especially by car;
- Supporting development with a high trip generation at locations where there is good public transport accessibility and capacity;
- Supporting measures that encourage shifts to more sustainable modes and appropriate demand management;
- Promoting greater use of low-carbon technology to reduce carbon dioxide emissions and global warming contributions; and
- Promoting walking by ensuring an improved public realm.

Policy 6.3 Assessing Transport Capacity

4.3.5 Development proposals should ensure that the impacts of the transport capacity and the transport network are considered and that Transport Assessments will be required in accordance with TfL's Transport Assessment Best Practice guidelines.

Policy 6.9 and Policy 6.10 Cycling and Walking

The Mayor will work to increase cycling and walking in London. Developments should:

- Provide secure, integrated and accessible cycle parking facilities in line with London Plan standards;
- Provide onsite showering and changing facilities;
- Integrate the Barclays Cycle Superhighways and facilitate the central London Cycle Hire scheme;
- Ensure high quality pedestrian environments in and around new developments that give emphasis to pedestrian and street space; and
- Promote simplified streetscapes that are de-cluttered and provide access for all.

Policy 6.13 Parking

4.3.6 New developments should ensure a balance is met between promoting new development and avoiding excessive car parking that can reduce the use of sustainable travel. When the car parking provision for new developments are being considered, maximum car parking standards (in line with London Plan policy) should be applied.

4.4 The Revised Early Minor Alterations to the London Plan, June 2012

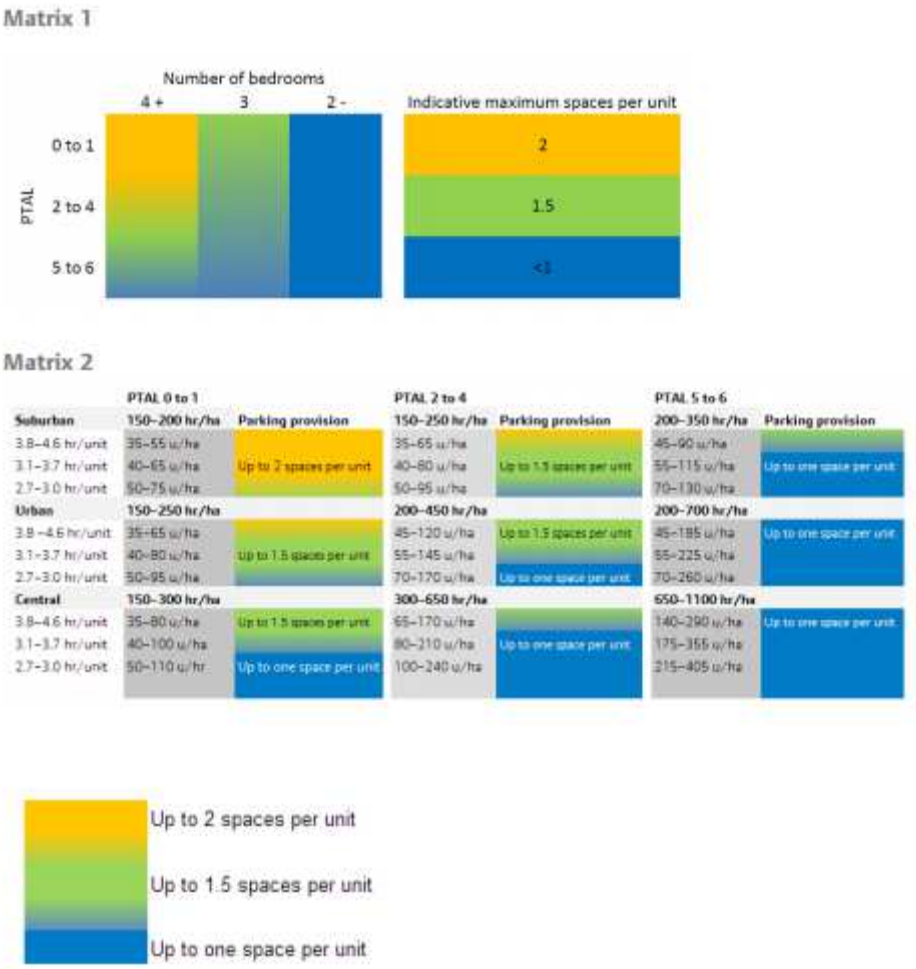
4.4.1 The revisions provide updated standards for cycle parking for all land uses. Table 6.3 in the Revised Alterations states that one cycle parking space should be provided per unit with one or two bedrooms and two spaces provided per unit with three or more bedrooms. In addition to this one visitor cycle parking space should be provided for every forty units.

4.5 Housing SPG, November 2012

4.5.1 The housing SPG was released to provide recommendations on parking provision in relation to a site's PTAL. The SPG suggested two possible approaches to calculating parking provisions, each represented as an individual scaled colour matrix.

4.5.2 Matrix 1 plots PTAL against number of bedrooms, with a sliding colour scale indicating optimum parking provision. Matrix 2 is similar it takes into account a site's location and considers unit size instead of number of bedrooms. Both matrices are given in Figure 4.1.

Figure 4.1 London Parking Standards as Given by Housing SPG



4.6 The Mayor's Transport Strategy

4.6.1 The Mayor's Transport Strategy was published in May 2010 and aims to provide a framework to inform the strategic development of London, alongside the London Plan, for the next 20 years. One of the strategic aims of the strategy is to improve transport opportunities for all Londoners.

4.6.2 The strategy aims to improve cycling and walking in London and promote the use of sustainable technologies, for example electric vehicles.

4.7 Camden Core Strategy

4.7.1 Camden's Core Strategy document lies within the borough's overall Local Development Framework. It is written to cover the period of 2010-2025.

4.7.2 Section two of the Core Strategy focusses on 'Meeting Camden's needs', this includes a focus on ensuring the transport needed to support Camden's growth is provided and promotion of more sustainable travel. This includes policy CS11 which is summarised below:

Policy CS11 – Promoting sustainable and efficient travel

4.7.3 The Council will promote the delivery of transport infrastructure and the availability of sustainable transport choices in order to support Camden's growth, reduce the environmental impact of travel and relieve the pressure of the borough's transport network.

4.7.4 Key infrastructure proposals which the Council will promote include King's Cross station improvements, improvements to facilities at Camden's London Underground and Overground Stations (including Camden Town), and improvements to walking and cycling as part of transport infrastructure works.

4.7.5 To promote sustainable travel the council will improve public spaces and pedestrian links across the borough (including extending the Legible London scheme), continue to improve facilities for cyclists (including increasing the availability of cycle parking and enhancing cycle links), and work with TfL to improve the bus network and support proposals to improve services and capacity on the tube and London Overground.

4.7.6 To work towards making private transport more sustainable the Council will expand the availability of car clubs, minimise car parking provision in new developments, restrict new public parking, promote the use of low emissions vehicles (including through the provision of electrical vehicle charging points) and ensure that growth and development has regard to Camden's road hierarchy and does not cause harm to the management of the road network.

4.8 Development Policies Document

4.8.1 The Development Policies document is also within the Local Development Framework. It relates development policies to the Core Strategy Policies laid out in the Core Strategy.

4.8.2 The relevant polices are outlined below.

DP16 – The transport implications of development

4.8.3 The Council will seek to ensure that development is properly integrated within the transport network and is supported by adequate walking, cycling and public transport links. The Council will resist development that fails to assess and address any need for:

- Movements to, from and within the site; including links to existing transport networks.
- Additional transport capacity off-site where existing or committed infrastructure cannot meet the additional need generated by the development. Where appropriate, the Council will expect proposals to provide information to indicate the likely impacts of the development and the steps that will be taken to mitigate those impacts, for example using transport assessments and travel plans.
- Safe pick-up, drop-off and waiting areas for taxis, private cars and coaches, where the activity is likely to be associated with the development.

DP17- Walking, cycling and public transport

4.8.4 The Council will promote walking, cycling and public transport use. Developments should make suitable provision for pedestrians, cyclists and public transport. Provision may include:

- Convenient, safe and well-signalled routes including footways and cycleways designed to appropriate widths.
- Other features associated with pedestrian and cycling access to the development, for example seating for pedestrians, signage, or high quality cycle parking.
- Safe road crossings where needed.
- Bus stops, shelters, passenger seating and waiting areas, signage and timetable information.

The Council will resist development that would be dependent on travel by private motor vehicles.

DP18- Parking standards and limiting the availability of car parking

4.8.5 The Council will seek to ensure that developments provide the minimum necessary car parking provision. It will be expected that development is car free in the town centres and other areas within Controlled Parking Zones that are easily accessible by public transport. Development should comply with the councils parking standards.

4.8.6 For car free and car capped developments, the Council will:

- Limit on-site parking to spaces designated for disabled people, any operational/servicing needs or any spaces designated for the occupiers of development specified as car capped.
- Not issue on-street parking permits.
- Use a legal agreement to ensure that future occupants are aware they are not entitled to on-street parking permits.

4.8.7 Developments will also be expected to meet the Council's minimum standards for cycle parking.

4.8.8 The Council will strongly encourage contributions to car clubs and pool car schemes in place of private parking in new developments across the borough. The Council will also seek the provision of electric charging points as part of any car parking provision.

DP19- Managing the impact of parking

4.8.9 The Council will ensure that the creation of additional car parking spaces does not have a negative impact on parking, highways or the environment and will encourage the removal of surplus car parking spaces. Development will be resisted where parking provision would:

- Harm highway safety or hinder pedestrian movement.
- Provide inadequate sightlines for vehicles leaving the site.
- Add to on-street parking demand where on-street spaces cannot meet existing demand, or otherwise harm existing on-street parking conditions.
- Require detrimental amendment to existing or proposed CPZ's.
- Create a shortfall of parking provision in terms of the Council's Parking Standards for bicycles, people with disabilities, service vehicles, coaches and taxis.

- Create a shortfall of public car parking, operational business parking or residents' parking.

- Create, or add to, an area of car parking that has a harmful visual impact.

4.8.10 The Council will require off-street parking to preserve a building's setting and the character of the surrounding area. It must preserve any means of enclosure, trees or other features of a forecourt or garden that make a significant contribution to the visual appearance of the area. Adequate soft landscaping, permeable surfaces and boundary treatment must be provided alongside any other treatments to offset adverse visual impacts and increases in surface run off.

4.8.11 Where parking is created or reallocated, Camden will encourage the allocation of spaces for low emission vehicles, car clubs, cycle hire/parking, and electric vehicle charging equipment.

DP20- Movement of goods and materials

4.8.12 In order to minimise the movement of goods and materials by road the Council will expect development that would generate significant movement of goods/material during construction or operation to minimise movement by road, instead considering more sustainable alternatives.

4.8.13 The Council will expect development that would generate significant movement of goods/materials by road, both during construction and in operation, to:

- Be located close to the TLRN or other Major Roads.

- Avoid any additional need for movement of vehicles over 7.5 tonnes in predominately residential areas.

- Accommodate goods vehicles on site.

- Seek opportunities to minimise disruption for local communities through effective management, including through the optimisation of collection and delivery timings and the use of low emission vehicles for deliveries.

DP21- Development connecting to the highway network

4.8.14 The Council will expect developments connecting to the highway network to:

- Ensure the use of the most appropriate roads by each form of transport and purpose of journey, in accordance with Camden's road hierarchy.

- Avoid direct vehicular access to the TLRN and other Major Roads.

- Avoid the use of local routes by through traffic

4.8.15 Where development will be connected to the highway network, the Council will require all new public highways to be constructed to a standard it considers to be appropriate for adoption, and expect the routes to be adopted, owned and managed by the relevant Highway Authority.

Appendix 2: parking standards

4.8.16 According to Camden's Development Policies, the following standards of parking should be applied to residential development:

- **Cycles** – For residents one storage/parking space must be provided per unit, an exception may be made for dwellings available solely to occupants unlikely to use cycles due to age or disability. From a threshold of 20 units, one visitor space must be provided per ten units or part thereof.

- **People with disabilities**- For Wheelchair Housing one parking space must be provided per dwelling, the dimensions of which should be suitable for use by people with disabilities. For general housing, where justified by the likely occupancy of the dwelling and reserved for use by people with disabilities, above a threshold of ten units, one space is to be provided per 20 units or part thereof. The dimensions should be suitable for use by people with disabilities.

- **General car parking** - In low parking provision areas a maximum of 0.5 spaces per dwelling may be provided. For the rest of the borough a maximum of one space per dwelling may be provided.

4.9 Camden Planning Guidance: Transport

4.9.1 LBC have produced a series of Planning Guidance documents to support the policies in the Local Development Framework. Their Transport document is relevant to this Transport Assessment.

4.9.2 The document states that a Transport Assessment should be provided for developments which have more than 1000 person trips per day or more than 100 person trips during the morning or evening peak (07:00-10:00 or 16:00-19:00).

4.9.3 In terms of Delivery and Servicing, the document advices that the Council does not generally allow waste to be left on the highway for collection on a specified day, except in the case of a residential development of six units or less. External storage space is sought for residential developments of seven dwellings or more, and for most non-residential developments. The external storage space should be at or near street level, and within 10 meters of a place suitable for a collection vehicle to stop. If appropriate storage cannot be provided within 10 meters of the public highway, it will generally be necessary for the collection vehicle to access the development site.

4.9.4 The guidance states that applicants should provide swept path drawings. Normally all vehicles should be able to enter and leave the site in a forward gear, in exceptional circumstances where this is not possible the service area must be designed to allow vehicles to reverse off the highway rather than on to it. Servicing Bays should be cleared marked out to discourage their use for car parking and storage.

4.9.5 Where access roads for service vehicles represent the most direct or visible route for pedestrians, a segregated footway of at least 1.8m in width should be provided with direct links to each pedestrian entrance of each building on site.

4.9.6 A minimum carriageway-width of six meters is required where an internal access is designed for two-way use by service vehicles. Where a footway is not provided to each side, a safety margin with a minimum width of 0.5 meters must be provided wherever there is no footway. Vertical clearance of 3.5 meters must be provided for light and medium goods vehicles.

4.9.7 Guidance the document gives in relation to Travel Plans is summarised in the policy section of the Travel Plan appended to this Transport Assessment.

4.9.8 The guidance has a chapter summarising and explaining car-capped and car-free developments in LBC, it states that:

4.9.9 LBC expect car-free developments in the Central London area, town centres and other areas with high PTALs. It is also expected where the creation of a new access could lead to on-street parking problems where the loss of kerb space would create unacceptable parking pressure.

4.9.10 Car-capped development applies to schemes which would have an unacceptable impact on on-street parking conditions or highway management and safety through the introduction of new units with access to on-street parking permits.

4.9.11 Non-residential development can potentially involve car-free or car-capped designation if it creates a new non-residential address or involves a change-of-use that would otherwise increase the demand for car parking.

4.9.12 Car-capped development is development in which all of the dwellings created are not entitled to on-street car parking permits, although some or all of the dwellings or units created may have a car-parking space on site in accordance with LBC's parking standards.

4.9.13 In order to maintain car-free and car-capped development over the lifetime of a scheme, the developer will be required to enter into a legal agreement which would permanently remove the entitlement to an on-street parking permit for each home created.

4.9.14 Existing parking rights can normally be retained on development sites, where it can be demonstrated that existing occupiers are to return to the address when it is completed.

4.9.15 Car-free and car-capped developments should be designed taking into account the needs of disabled car users. Blue Badge holders are able to use parking spaces in Controlled Parking Zones without a parking permit. Minimum parking standards apply to parking for people with disabilities, and one car parking space for people with disabilities is required per 10 general-purpose dwellings. In addition, where car-free and car-capped developments contain wheelchair accessible dwellings, the Council will expect a parking space to be provided for each wheelchair accessible unit. Where a resident in need of a reserved disabled parking space moves into a development with no off-street spaces, the Council will consider a request for a designated disabled space on-street in the same way whether the development is formally car-free or not.

4.9.16 The document has a chapter detailing the standards that must be adhered to where any off-street parking is provided. In particular general parking spaces must be 2.4 meters wide by 4.8 meters deep, and parking spaces for disabled users must be 3.3 meters wide by 4.8 meters deep. Parking spaces provided in front gardens or forecourts should be 5.0 meters wide and 6.0 meters deep.

4.9.17 The document also sets out design guidance for the creation of new vehicular accesses, new pedestrian areas/footpaths and new cycling facilities.

5 Travel Characteristics

5.1 Introduction

5.1.1 The scope of works report for this Transport Assessment presented the method used to calculate trip generation with the LBC. Trip rates per unit were also agreed within this scoping note. Further to this, TfL had also provided comments on the trip generation methodology.

5.1.2 This section will detail the methodology used to estimate trip generation and trip rates obtained for the trip generation calculations by both methods.

5.1.3 This chapter will conclude the net impact of the proposed development on the various modes of travel, taking into account likely current and future trip rates and the Census mode split.

5.1.4 The trip rates form the TRICS and TRAVL databases were compared and it was concluded that the trip rates generated by the TRAVL database were the more contextual and were based on more relevant sites. Further the mode splits from the Census and TRAVL were also compared and it was concluded that the Census data was more specific as it related to the ward containing the site.

5.1.5 The trip generation assessment used in discussions with LBC was based on estimating different trip rates for car owning and non-car owning households. The Census mode splits were then modified to reflect the car ownership.

5.1.6 The trip generation assessment based on discussions with TfL was based on same trip rates used for all units. The sites from TRAVL were chosen on the basis of PTAL and the mode splits were modified to reflect car ownership.

5.1.7 In some cases trips rates have been rounded to the nearest full trip, therefore there may be some small inconsistencies in totals due to rounding.

5.2 Trip Generation using Variable Trip Rates

5.2.1 Sites which have been surveyed in the last ten years and are located in inner London are selected from the TRAVL database.

5.2.2 Appendix H presents these TRAVL selections, comparing them to the Agar Grove Estate and selecting those found to be contextual to the units which have parking provided and those found to be contextual to the car-free units. The sites not taken forward for trip generation calculations are also presented along with reason for not selecting.

A: Units with Car Parking

5.2.3 Table 5.1 provides a summary of the TRAVL sites chosen to calculate the trip generation for the units which will have one parking space provided per unit. Since it is recognised that many of the residents currently provided with parking do not use it, a site with a lower parking ratio has been included in the calculations.

Table 5.1 Comparison of TRAVL Sites (Units with Parking)

Ref	Site	Borough	Units	Parking	Parking ratio	Daily trips per unit
A	Agar Grove – 1:1 parking	Camden	50	50	1	-
5	Stanley Close	Greenwich	156	175	1.12	10.25
16	Sewardstone Road	Tower Hamlets	67	29	0.42	5.55

5.2.4 The trip rate per unit generated by the selected sites is presented in Table 5.2.

Table 5.2 TRAVL Trip Rate per Unit (Units with Parking)

Time period	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	0.13	0.76	0.89
PM Peak (17:00 to 18:00)	0.56	0.39	0.95
Total Daily (07:00 to 22:00)	4.51	4.57	9.08

B: Car-free Units

5.2.5 Table 5.3 summarises the TRAVL sites selected for the trip generation calculation for the car-free units. There is a smaller selection of car-free sites on the TRAVL database than there are units with parking provided. In total there are only two car-free sites in the TRAVL database which are located in inner London and have been surveyed in the last ten years. One of these sites was part of a mixed use development which was less than two minutes' walk from an Underground station and appeared to have no on-street parking restrictions. The remaining site provides a good fit for the proposed development since it is also located in Camden, in CPZ and there is a similar walking distance to the nearest rail/Underground interchange.

Table 5.3 Comparison of TRAVL Site (Car-Free Units)

Ref	Site	Borough	Units	Parking	Parking ratio	Daily trips per unit
B	Agar Grove – car-free	Camden	199 presently and 455 proposed	0	0	-
8	Green Dragon House	Camden	29	0	0	9.48

5.2.6 The trip rate per unit generated by the selected sites is given in Table 5.4.

Table 5.4 TRAVL Trip Rate per Unit (Car-Free Units)

Time period	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	0.17	0.86	1.03
PM Peak (17:00 to 18:00)	0.59	0.41	1.00
Total Daily (07:00 to 22:00)	4.72	4.76	9.48

Trip Generation for the Existing Site

5.2.7 The trip rates presented in Tables 5.2 and 5.4 are applied to existing 50 car owning units and 199 car free units and the estimated trip generation is presented in Table 5.5.

Table 5.5 Trips for Existing Site Calculated using TRAVL Database

Time period	Trips		
	Trips in	Trips out	Total
Parking provided (50 units)			
AM Peak (08:00 to 09:00)	7	38	45
PM Peak (17:00 to 18:00)	28	20	47
Total Daily (07:00 to 22:00)	226	228	454
Car-free units (199 units)			
AM Peak (08:00 to 09:00)	34	172	206
PM Peak (17:00 to 18:00)	117	82	199
Total Daily (07:00 to 22:00)	940	947	1,887
Total (249 units)			
AM Peak (08:00 to 09:00)	41	210	250
PM Peak (17:00 to 18:00)	144	102	246
Total Daily (07:00 to 22:00)	1166	1175	2,341

Trip Generation for the Proposed Site

5.2.8 The proposed site will retain parking spaces for returning residents who currently have a vehicle and any new parking will be for disabled parking provision only, in total there are likely to be 57 spaces provided for the proposed 493 units, of which 7 spaces are for additional wheelchair accessible units or visitors. Therefore there will be 50 units in total provided with a parking space and 443 will be car free. Trip generation for the proposed site is presented in Table 5.6.

Table 5.6 Trips for Proposed Site Calculated using TRAVL Database

Time period	Trips		
	Trips in	Trips out	Total
Parking provided (50 units)			
AM Peak (08:00 to 09:00)	7	38	45
PM Peak (17:00 to 18:00)	28	20	47
Total Daily (07:00 to 22:00)	226	228	454
Car-free units (443 units)			
AM Peak (08:00 to 09:00)	76	382	458
PM Peak (17:00 to 18:00)	260	183	443
Total Daily (07:00 to 22:00)	2,093	2,108	4,201
Both (493 units)			
AM Peak (08:00 to 09:00)	83	420	503
PM Peak (17:00 to 18:00)	287	203	490
Total Daily (07:00 to 22:00)	2,318	2,336	4,655

Net Trip Generation

5.2.9 The total trip generation by the existing units is deducted from the proposed units to estimate the net trip generation. This is presented in Table 5.7.

Table 5.7 Net Increase in Number of Trips Generated by Agar Grove Estate Redevelopment

Time period	Trips		
	Trips in	Trips out	Total
Parking provided			
AM Peak (08:00 to 09:00)	0	0	0
PM Peak (17:00 to 18:00)	0	0	0
Total Daily (07:00 to 22:00)	0	0	0
Car-free units (increase of 244 units)			
AM Peak (08:00 to 09:00)	44	210	252
PM Peak (17:00 to 18:00)	143	101	244
Total Daily (07:00 to 22:00)	1,153	1,161	2,314
Total increase (244 Units)			
AM Peak (08:00 to 09:00)	44	210	252
PM Peak (17:00 to 18:00)	143	101	244
Total Daily (07:00 to 22:00)	1,153	1,161	2,314

5.2.10 As shown in Table 5.7, the net increase in trips due to the Agar Grove redevelopment are 252 trips during the morning peak hour and 244 trips during evening peak hour. However the increase is all due to non-car owning units and there will be no change in the vehicular traffic generated due to the proposed redevelopment.

5.2.11 The detailed trip generation calculations are presented in Appendix H.

5.3 Trip Rates based on Site Selection using PTAL

5.3.1 Based on consultation with TfL, a separate methodology for site selection based on similar PTAL was used. TfL had requested same trip rates to be used for car owning and non-car owning households, although the trip rates were to be determined using sites with similar Public Transport Accessibility Levels (PTALs).

5.3.2 The PTAL of the site ranges from 3 to 6 and therefore the sites with PTAL from 3 to 6 have been chosen from TRAVL. Table 5.8 presents the sites selected.

Table 5.8 TRAVL Site Selection for Sites with Similar PTALs

Site	PTAL	Number of Units	Car Parking	Post Code	Date surveyed
Coopers Court (Private)	5	77	77	W3 8PN	22/09/2005
Green Dragon House	6	29	0	WC2H 5LQ	11/09/2008
Sewardstone Road	3	67	28	E2 9JN	14/06/2012
Stanley Close	3	156	175	SE9 2DR	24/04/2008

5.3.3 The trip rates estimated using the sites presented in Table 5.8 are presented in Table 5.9.

Table 5.9 TRAVL Trip Rate per unit for Sites with Similar PTAL

Time period	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	0.1	0.7	0.8
PM Peak (17:00 to 18:00)	0.5	0.3	0.9
Total Daily (07:00 to 22:00)	4.2	4.2	8.4

Trip Generation for the Existing Site

5.3.4 The trip rates presented in Tables 5.9 are applied to existing 249 units and the estimated trip generation is presented in Table 5.10.

Table 5.10 Trips for Existing Site Calculated using TRAVL Database

Time period	Trips		
	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	26	184	210
PM Peak (17:00 to 18:00)	135	87	222
Total Daily (07:00 to 22:00)	1,038	1,050	2,087

Trip Generation for the Proposed Site

5.3.5 Trip generation for the proposed site is obtained by applying the trip rates presented in Table 5.8 to the 505 total proposed units and is presented in Table 5.11.

Table 5.11 Trips for Proposed Site Calculated using TRAVL database

Time period	Trips		
	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	52	364	417
PM Peak (17:00 to 18:00)	267	172	439
Total Daily (07:00 to 22:00)	2,054	2,078	4,133

Net Trip Generation

5.3.6 The total trip generation by the existing units is deducted from the proposed units to estimate the net trip generation. This is presented in Table 5.12.

Table 5.12 Net Increase in Number of Trips Generated by Agar Grove Development

Time period	Trips		
	Trips in	Trips out	Total
AM Peak (08:00 to 09:00)	26	180	206
PM Peak (17:00 to 18:00)	132	85	217
Total Daily (07:00 to 22:00)	1,017	1,029	2,045

5.3.7 As shown in Table 5.12, the net increase in trips due to the Agar Grove redevelopment are 206 trips during the morning peak hour and 217 trips during evening peak hour using the methodology requested by TfL.

5.3.8 As can be seen on comparison of Tables 5.7 and 5.12, the total estimated trip generation using TfL methodology is lower than the total estimated trip generation if different trip rates are applied to car-owning and non-car owning households. Therefore the trip estimation in Tables 5.7 is used for further impact assessment.

5.3.9 The detailed trip generation calculations are presented in Appendix H.

5.4 Mode splits

5.4.1 During the scope of works discussions with LBC and TfL, it was agreed that the Census 2011 mode split for Travel to Work would be used.

5.4.2 The site is located in the Cantelowes ward. The 2011 Census gives vehicle ownership for this ward as 0.44 vehicles per residential unit.

5.4.3 Table 5.13 gives the mode split for those who travel to work according to the 2011 Census and the modified mode splits based on the car driver trip redistribution for the car drivers across the public transport modes to provide a mode split for the car-free units.

Table 5.13 2011 Census Travel to Work Mode Split in the Cantelowe Ward

Mode	2011 Census mode split for Cantelowes ward	Census redistributed (for car-free units)
Underground, Metro, Light Rail, Tram	25.6%	30.3%
Train	6.9%	8.2%
Bus, Minibus or Coach	25.1%	29.7%
Taxi	0.6%	0.6%
Motorcycle, Scooter or Moped	1.2%	1.2%
Driving in a car or van	10.5%	0%
Passenger in a car or van	0.7%	0.7%
Bicycle	12.0%	12.0%
On foot	16.7%	16.7%
Other	0.7%	0.7%
Total	100%	100%

5.5 Trip Generation by Mode

5.5.1 The trip generation by mode for the net increase of 244 units has been estimated using the mode splits presented in Table 5.13 and applied to the net trip generation presented in Table 5.14. The net trip generation by mode using the TfL methodology is presented in Appendix H.

Table 5.14 Net Trip Generation by Mode (Net Increase of 244 Residential Units)

Mode	AM Peak Hour			PM Peak Hour			Total Daily		
	Trips in	Trips out	Total	Trips in	Trips out	Total	Trips in	Trips out	Total
Underground, Metro, Light Rail, Tram	13	64	76	43	31	74	349	351	700
Train	3	17	21	12	8	20	94	95	189
Bus, Minibus or Coach	12	62	75	42	30	72	342	345	687
Taxi	0	1	2	1	1	1	7	7	14
Motorcycle, Scooter or Moped	1	3	3	2	1	3	14	14	28
Driving in a car or van	0	0	0	0	0	0	0	0	0
Passenger in a car or van	0	1	2	1	1	2	8	8	16
Bicycle	5	25	30	17	12	29	138	139	278
On foot	7	35	42	24	17	41	192	194	386
Other	0	1	2	1	1	2	8	8	16
Total	42	210	252	143	101	244	1,153	1,161	2,314

6 Impacts on the Highway Network

6.1 Introduction

6.1.1 The vehicle trips generated due to the net increase in residential units at Agar Grove have been assessed on the highway network in this Chapter. The development site is accessed via one junction between Agar Grove / Access Road parallel to Camley Street. For the Transport Assessment purposes, the traffic generated by the development is assigned as entering the development through this junction and exiting through the junction between Lulworth Avenue / Agar Grove.

6.1.2 This section presents the assignment of the vehicular trips generated by the development on the local highway network and the traffic impact assessment.

6.2 Traffic Assignment

6.2.1 The development proposals will change access arrangements for vehicle trips. In the current situation vehicles may both enter and exit from the access points onto Wrotham Road and Agar Grove. Those who park in the seven spaces off Agar Grove to the north of the site do not enter the estate.

6.2.2 Following the redevelopment, majority of the car parking provision will be to the east of the site. Vehicles will enter the site from the proposed one way access road parallel to Camley Street. To exit the site, vehicles would use the new proposed shared route called Lulworth Avenue.

6.2.3 Current traffic data for the junction between the estate access road and Agar Grove is presented in Chapter Two.

6.2.4 To assess a worst case scenario it has been assumed all of the vehicular trips generated by the new development will be on top of the baseline level identified in traffic surveys; although it is unlikely to be the situation as there is no increase in net vehicle trips from the site. Impact assessment is assessed using junction modelling tools due to the changes in the current access arrangements.

6.2.5 In terms of distribution it has been assumed that all of the trips leaving the site will use Lulworth Avenue and all the trips entering the site will use what is currently the estate access road.

6.3 Impact Assessment

6.3.1 The site access junctions have been modelled using the priority intersection module of Junctions 8. These results for existing junction model are presented in Appendix C and reprovided in Table 6.1. The results for the junctions with development are presented on Appendix I.

Table 6.1 Results of PICADY Modelling of Site Access Junction

Movement	AM Peak			PM Peak		
	Queue (PCUs)	Delay (sec)	RFC*	Queue (PCUs)	Delay (sec)	RFC*
Existing						
Egress	<1	8.53	3%	<1	8.89	3%
Right Turn In	<1	5.35	1%	0	4.62	0%
Proposed						
Egress	<1	8.65	4%	<1	9.14	3%
Right Turn In	<1	5.51	1%	0	4.69	0%

*ratio to flow capacity

6.3.2 As shown in Table 6.1 the junction is currently operating with 97% and 99% spare capacity during the morning peak hour on the egress and right turn in movements respectively. During the evening peak hour it is operating with 97% and 100% spare capacity on the egress and right turn in movements respectively.

6.3.3 Once development flows are added in, the spare capacity remains the same except for on the AM peak egress movement where spare capacity becomes 96%. This shows that the junction will continue to operate particularly well following the proposed development.

6.3.4 Queues of less than one PCU remain on both movements during the morning and evening peak hours following the proposed development.

6.4 Mitigation Measures

6.4.1 The net increase of 244 residential units on the traffic network has been assessed in this section. As can be seen there is no net increase in vehicular traffic although some junction may be used more than others due to internal network and access arrangements. Nevertheless, a full Residential Travel Plan has been prepared which is a site-specific Travel Plan and will encourage residents to make sustainable travel choices.

6.4.2 The Travel Plan includes walking and cycling catchments to allow residents to identify facilities and services which are within walking or cycling distance, enabling them to make informed decisions when it comes to travelling by public transport or walking/cycling.

6.4.3 The car-free nature of the site will be central to the promotion of sustainable modes of travel. It will mean that residents who live there are highly unlikely to own a private car unless they are disabled. The Travel Plan has been assessed in AttrBute and is presented in the Appendix J.

7 Impacts on Public Transport

7.1 Introduction

7.1.1 The additional trips generated by the proposed development on the public transport modes are presented in Table 5.14 and is reproduced in Table 7.1.

Table 7.1 Net Increase in Public Transport Trips

Mode	AM Peak Hour			PM Peak Hour			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground	13	64	76	43	31	74	349	351	700
Bus, Minibus or Coach	12	62	75	42	30	72	342	345	687
Train	3	17	21	12	8	20	94	95	189

7.2 Impact on London Buses

7.2.1 The proposed development will lead to an additional 75 bus passengers in the morning peak hour and 72 passengers in the evening peak hour.

7.2.2 As identified within the baseline conditions section in Table 2.2, a total of 51 buses per hour stop within 640m of site during morning and evening peak hours respectively.

7.2.3 Whilst 75 and 72 additional passengers during the morning and evening peak hours respectively may seem high, in reality this is the equivalent of one to two additional passengers per bus during the morning and evening peak hours respectively.

7.2.4 This impact assessment also assumes the worst case scenario since some bus passenger trips are likely to be taken on the bus services which stop at Camden Gardens in one direction and Hawley Road/ Camden Town in the other direction.

7.3 Impact on Underground/ Overground

7.3.1 As can be seen in Table 7.1, the proposed development will lead to an additional 21 train passengers in the morning peak hour and 20 passengers in the evening peak hour.

7.3.2 As identified in the baseline conditions there are a total of approximately 16 trains serve the Camden Road Overground station during the morning and evening peak hours. This level of increase is equivalent to one to two additional passengers per train.

7.3.3 The proposed development would also lead to an increase of 76 tube passengers in the morning peak hour and 74 during the evening peak hour.

7.3.4 The nearest Underground station is Camden Town which provides approximately 40 trains per hour during the morning and evening peak hours. The proposed development will lead to an increase of approximately two passengers per train during the morning and evening peak hours.

7.4 Conclusions

7.4.1 The proposed development would provide an additional 244 residential units, all of which would be car free. The trip generation calculations estimate:

- An additional 75 and 72 passengers on the buses during the morning and evening peak hours respectively;
- An additional 21 and 20 passengers on the Overground during morning and evening peak hours respectively;
- An additional 76 and 74 passengers on the Underground network during morning and evening peak hours respectively.

7.4.2 This level of increase is considered negligible based on the current provision of public transport services serving the site.

8 Deliveries and Servicing Plan

8.1 Introduction

8.1.1 Delivery and Servicing Plans (DSPs) provide a framework to better manage all types of freight vehicle movement to and from individual developments. A DSP is essentially the equivalent of a workplace travel plan for freight. The London Freight Plan highlights DSPs as one of the four measures to improve freight and servicing in London. The other three measures include the Freight Operator Recognition Scheme (FORS); Construction Logistics Plans (CLPs); and the Freight Information Portals (FIP).

8.1.2 The *'Managing Freight Effectively: Delivering and Servicing Plans'* document identifies the benefits of DSPs to local authorities and residents, building developers and businesses and freight operators. In summary, DSPs will:

- Help developers and local authority planning officials comply with:
  - National Planning Policy Framework, which requires the promotion of more sustainable transport choices for moving freight; and
  - The Traffic Management Act, the London Plan and any borough-specific policies, cover issues such as road safety and air quality.
- Demonstrate that goods and services can be delivered, and waste removed, in a safe, efficient and sustainable way;
- Identify deliveries that could be reduced, re-timed or consolidated, particularly during busy periods;
- Help cut congestion on London's roads and ease pressure on the environment;
- Improve the reliability and efficiency of deliveries to the site concerned;
- Reduce the operating costs for building occupants and freight companies; and
- Reduce the impact of freight activity on local residents.

8.2 Existing On-Site Servicing Activity

8.2.1 The existing 249 residential units are serviced from Agar Grove and within the site from the access points on Wrotham Road and Agar Grove.

8.2.2 Delivery and servicing vehicles may enter the site to the west from Wrotham Road, where there is a car parking courtyard. To the east vehicles may access the site from Agar Grove, driving southward along the estate road to the area of car parking alongside Lulworth Tower and the Children's Centre.

8.2.3 There is space for delivery and servicing vehicles in the two main parking courtyards; one to the north of the Sure Start Children's Centre and one to the west of the estate accessed from Wrotham Road. There is also a small car park outside of the shops to the north of the estate.

8.2.4 Currently each block has their own bin store area and large wheeled bins which are emptied by refuse collection teams. The refuse vehicles access the east of the site using the estate access road from Agar Grove; the west of the site by entering the car park area from Wrotham Road; and the north of the site is serviced directly from Agar Grove.

8.2.5 Domestic rubbish collection from the Agar Grove Estate is on a Monday and Thursday. Recycling is collected on a Tuesday.

8.2.6 The Cranbourne and Ferndown DHO blocks are not included within the redevelopment boundary are will remain as they are. These units currently have the same refuse collection arrangements as the remainder of the estate with the bins being emptied from the estate access road.

8.2.7 The Sure Start Children's Centre is currently being serviced from car park to the east of Lulworth Tower. The daily food deliveries to the Childress Centre are also made through this area.

8.2.8 The shops to the north of the site use the small car park for their delivery and servicing requirements.

8.3 Proposed On-Site Servicing

8.3.1 Figure 3.2 presents the proposed vehicular routing arrangements. As shown many of the roads will be one-way however vehicles will be able to pass through the entire site from west to east and a new vehicular access to Agar Grove.

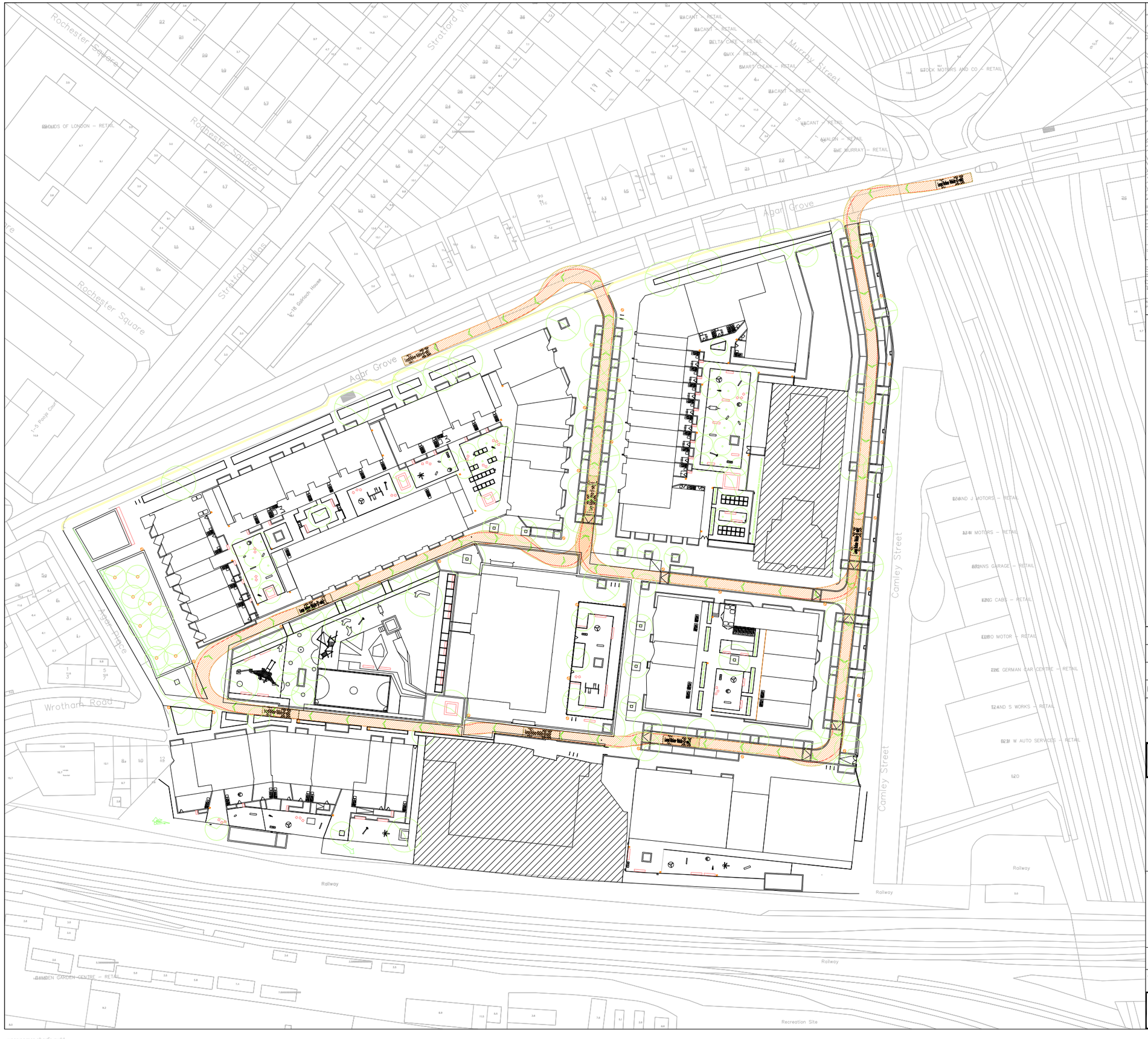
8.3.2 Each residential block will have its own waste storage area and all delivery and servicing activity will take place using the routes shown in Figure 3.2. The proposed waste storage areas are identified in Figure 8.1.

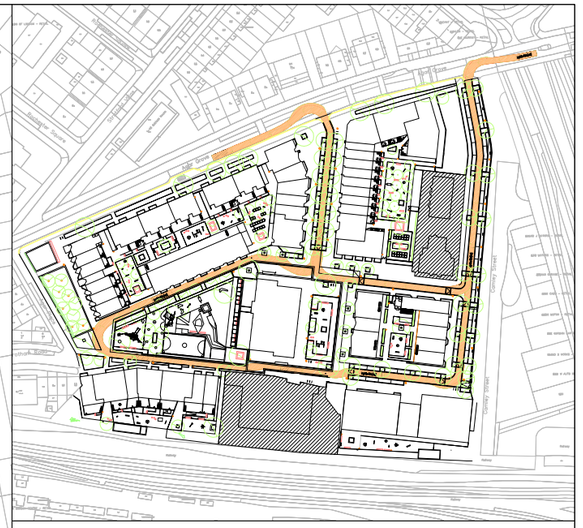
8.3.3 Swept path analysis has been conducted to assess the proposed network to be used by the Council's refuse collection vehicle. Figure 8.2 presents the swept path analysis for a refuse collection vehicle for the whole site. Figure 8.3 presents the swept path analysis using a 7.5 ton box van assuming this will be the vehicle most likely used for removals and deliveries to residential units. The detailed swept path analysis is presented in Appendix K.

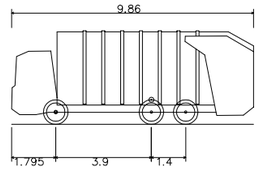
8.3.4 The collection points are designed such that the bins are stored within acceptable towing distance (10m) from the refuse collection vehicle for communal waste storage areas and within 30m from individual houses.

8.3.5 The deliveries and servicing for the proposed retail and community facilities will take place from Agar Grove as per the current situation.

Figure 8.1: Waste Storage Areas







Large Refuse Vehicle (3 axle)	
Overall Length	9.860m
Overall Width	2.450m
Overall Body Height	3.814m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	9.500m

Mark	Revision	Drawn	Date	Chkd

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect his operations.

Drawing Issue Status

FOR INFORMATION

AGAR GROVE ESTATE, CAMDEN
REFUSE VEHICLE SWEPT PATH ANALYSIS

Client

LONDON BOROUGH OF CAMDEN

Date of 1st Issue	Drawn by
24/09/13	CR
A3 Scale	Checked by
1:200	MD

Drawing Number: 28732/001/001

Revision: -

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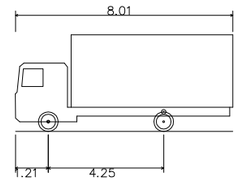

7.5t Box Van	
Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.400m

Mark	Revision	Drawn	Date	Chkd

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Drawing Issue Status
FOR INFORMATION

AGAR GROVE ESTATE, CAMDEN
7.5T BOX VAN SWEPT PATH ANALYSIS

Client
LONDON BOROUGH OF CAMDEN

Date of 1st Issue	Drawn by
24/09/13	CR
A3 Scale	Checked by
1:1000	MD
Drawing Number	Revision
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9 Construction and Logistics Plan

9.1 Introduction and Background

9.1.1 This chapter presents the outline of a Construction Logistics Plan (CLP) which will be implemented during construction stages of the proposed development at Agar Grove. CLPs provide a framework to better manage all types of freight vehicle movement to and from construction sites. A CLP is essentially the equivalent of a workplace travel plan for construction vehicles. The London Freight Plan highlights CLPs as one of the four measures to improve freight and servicing in London. The other three measures include the Freight Operators Recognition Scheme (FORS); Deliver and Servicing Plans (DSPs); and the Freight Information Portal (FIP).

9.1.2 A detailed Construction Management Plan is prepared by EC Harris and submitted as part of the planning application documentation. This section only presents an Outline CLP.

9.1.3 The *'Building a Better Future for Freight: Construction Logistics Plans'* document identifies the benefits of CLPs to local authorities and residents, building developers and business and freight operators. In summary, CLPs will:

- Demonstrate that goods and services can be delivered, and waste removed, in a safe, efficient and environmentally-friendly way;
- Identify deliveries that could be reduced, re-timed or even consolidated, particularly during busy periods;
- Help cut congestion on London's roads and ease pressure on the environment;
- Improve the reliability of deliveries to the site concerned;
- Reduce the operating costs of building occupants and freight companies; and
- Reduce the impact of freight activity on local residents.

9.1.4 The London Freight Plan (2007) recognises that:

- The improvement of the efficiency of the freight sector will help reduce the environmental and social impacts of freight transport in London, particularly the contribution to climate change;
- Achieving sustainable freight distribution in London will make a real and positive contribution to improving the lives of those who live, work and visit London.
- Road network efficiency will be increased by each traffic authority's response to its Network Management Duty, which will include the reduction of freight vehicle Penalty Charge Notice (PCN) hotspots to improve congestion and help reduce CO2 emissions.

9.2 Objective of this CLP

9.2.1 The objective of this outline CLP is-

"To minimise the impacts of construction-related vehicle movements and facilitate sustainable construction travel to and from the proposed development"

9.2.2 To support the realisation of this overarching objective, several sub-objectives have been set out:

- Encouraging construction workers to travel by non-car modes to the proposed development site;
- Promoting smarter operations that reduce the need for construction travel overall or that reduce or eliminate trips particularly those in peak periods;
- Encouraging greater use of sustainable freight modes;
- Encouraging use of greener vehicles;
- Managing the ongoing development and delivery of the CLP with construction contractors;
- Communication of site servicing/delivery facilities (through dissemination of information) to workers and suppliers; and
- Encouraging the most efficient use of construction freight vehicles.

9.3 Construction Traffic Flows

9.3.1 In order to reduce the effect of construction traffic, bulk transit trips (such as muck away and steelwork delivery) would be undertaken during off-peak periods only. It is not anticipated at this stage any lane closures would be required, but if they were to take place, they would be minimised and would not occur during peak periods.

9.3.2 Construction delivery vehicles would approach the site via Agar Grove, through the existing estate access road.

9.3.3 The hours of work are likely to be specified within planning conditions attached to the planning permission sought. However, it is considered likely that the standard hours of work would be as set out below:

- 08:00 to 18:00 hours Monday to Friday;
- 08:00 to 13:00 hours Saturday; and
- No working on Sundays or Bank Holidays.

9.3.4 Although night-time (23:00 - 08:00), out-of-hours or weekend working would not normally be permitted, it is conceivable that certain works (for example, heavy deliveries) may have to be undertaken during these periods. If necessary, the hours of operation for such works would be subject to prior agreement and reasonable notice with LBC, highways.

9.3.5 Final details regarding traffic flow alteration and management would be agreed with LBC and TfL, if needed, prior to the onset of any works. Any necessary lane closures on the local highway network will avoid peak periods if at all possible, and the relevant authorities (including emergency services) will be notified. The Principal Contractor will co-ordinate all deliveries and collections to/from the Site, and ensure that:

- All delivery and collection vehicles are aware of the proposed routing;
- Prior to a delivery or collection, hauliers will notify the relevant authorities (TfL Police, Highways Authority etc) in accordance with the Road Vehicles (Authorisation of Special Types) (General) Order 2003 if required;

- Liaison will be undertaken with occupants of adjacent buildings to avoid delays to service deliveries due to construction vehicles; and
- Deliveries will be made on a 'just in time' basis.

9.3.6 Larger vehicle movements will be scheduled to avoid peak hours on the local road network if at all possible. If an alternative construction traffic route is required this will first be agreed with LBC. All deliveries will be made to the designated areas within the site. If for any reason it is necessary to load and unload outside the site boundary, the details and procedure for this will be agreed in advance with LBC and occupants of local buildings.

9.4 Construction Phasing

9.4.1 An indicative construction phasing plan is presented in Figure 9.1 along with the likely timescales. This CLP will ensure that there is minimal disruption to the on-site residents during this period.

9.4.2 During the Construction Phase 1, Broadstone block will be demolished and Plot A will be constructed. During this time, the Children Centre and retained units to the north in Manston blocks will be access as per the current situation. The construction vehicles are likely to access the site through St Pancras Way and through Wrotham Road.

9.4.3 During Construction Phase 2, Manston, Sherbourne and Sturminster blocks will be demolished and Plots F, G, H and I will be constructed. The newly constructed Plot A will be accessed by Wrotham Road. The retained Children's Centre and Lulworth House units will be accessed as per the current situation. The construction vehicles are likely to access the site using Wrotham Road and Agar Grove.

9.4.4 During Construction Phase 3, Ashmore and Nettlecombe will be demolished retaining the newly constructed L&Q plot. Plots J, K and L will then be constructed during this phase. The newly constructed Plots A, F, G, H and I will be accessed from Wrotham Road and Agar Grove. Lulworth House, Abbotsbury, Frampton, the retained Children's Centre and the L&Q housing will be accessed as per their current situation.

9.4.5 Construction vehicles are likely to access the site using the current site access road to the eastern border of the site.

9.4.6 During Construction Phase 4, Frampton will be demolished and replaced with Plot B. The new Lulworth Avenue will be constructed between Plots I and JKL. Plots A, F, G, H, and I will be accessed from Wrotham Road and Agar Grove during this time and Plots JKL will be accessed from the existing estate access road to the eastern border of the site. Abbotsbury, L&Q housing and Lulworth will be accessed as per their current situation and the Children's Centre will be accessed from Wrotham Road.

9.4.7 During Construction Phase 5, Abbotsbury will be demolished and replaced with Plot CD. Construction vehicles for Phase 5 will access the site using the current estate access road.

9.4.8 During Construction Phase 6, Lulworth will be refurbished and replaced with Plot E. The estate access road will also be refurbished. During this time all Plots will have access through Wrotham Way and Lulworth Road. Construction vehicles will access the site using the access road.

9.4.9 Figure 9.2 presents the swept path analysis for a construction vehicle accessing the site through the estate access road and through Wrotham Road. The detailed swept path analysis is presented in Appendix K.

9.5 Staff Travel

9.5.1 Individual contracts (for example waste removal) would incorporate appropriate requirements in respect of environmental management and control (EMP). These would be based on statutory requirements and the principles of 'good working practice' outlined in the EMP. Potential contractors and sub-contractors would be required to demonstrate how they would achieve the provisions of the EMP, how targets would be met and how potential adverse effects would be prevented, reduced and offset.

9.6 CLP Targets

9.6.1 The CLP targets should align with the objectives and measures set out earlier. Examples of targets that could be developed include:

- No, or a specific percentage, of construction trips to be undertaken during the morning and evening peak hours;
- A specific number of daily construction trips to encourage the consolidation of trips to the site;
- All, or a specific proportion, of servicing and delivery companies used to be a member of FORS;
- Specific percentage of the proposed development construction vehicles to be 'green' vehicles.

9.7 Summary

9.7.1 This section of the Transport Assessment has presented the proposed CLP for the Agar Grove Estate redevelopment. A series of measures are proposed to be taken forward as part of the CLP, prior to commencement of construction. These will encourage sustainable construction movements to the proposed development and reduce unnecessary construction related trips, particularly during peak times and also ensure that there is minimal disruption to the retained residents on site during construction and also to the neighbouring community.

TEMPORARY ACCESS MAY BE REQUIRED FOR PHASE 3 FOLLOWING DEMOLITION OF ASHMORE HOWEVER THE ROAD SHOULD BE FINISHED AS PART OF THE PHASE 4 WORKS BECAUSE IT WILL BE REQUIRED FOR PHASE 4 CONSTRUCTION ACCESS. SOME UTILITIES AND DRAINAGE WORKS ASSOCIATED WITH PHASE 3 MAY NEED TO BE UNDERTAKEN IN THIS AREA PRIOR TO THE GENERALLY COMMENCEMENT OF PHASE 4 WORKS HOWEVER THIS AREA WILL ONLY BE FINISHED TO IT'S FINAL STATE IN PHASE 4.

NOTES:

1. THE PROPOSED SITE LAYOUT IS TAKEN FROM GRANT ASSOCIATES DRAWING 377-AL-P-XL-B.
2. THE PROPOSED PHASING BOUNDARIES AND AREAS ARE SHOWN INDICATIVELY AND ARE SUBJECT TO DETAILED COORDINATION.
3. THE PHASING AREAS INDICATE THE COMPLETION OF THE PHASE TO ITS FINAL STATE. SOME AREAS MAY REQUIRE WORKS TO BE UNDERTAKEN AS PART OF THE WORKS OF NEIGHBOURING PHASES BEING DEVELOPED EARLIER IN THE CONSTRUCTION SEQUENCE. WHERE THESE HAVE BEEN RECOGNISED, THEY HAVE BEEN NOTED ON THE DRAWING.

PHASE 6
680m²

PHASE 2
6950m²

PHASE 1
2700m²

PHASE 4
2100m²

PHASE 3
3670m²

L&Q
BUILDINGS

PHASE 6
4470m²

PHASE 5
2130m²

PHASE 4
3450m²

AGAR CHILDREN'S CENTRE

ACCESS ROAD TO BE FINISHED IN FINAL STAGE TO PROVIDE CONSTRUCTION VEHICLE ACCESS FOR LULWORTH PHASE 6 WORKS. ACCESS TO BE MAINTAINED TO L&Q BUILDINGS AT ALL TIMES AND SUBSEQUENTLY FOR PHASES 4 AND 5.
SOME UTILITIES AND DRAINAGE WORKS ASSOCIATED WITH PHASES 3 AND 4 MAY NEED TO BE UNDERTAKEN IN THIS AREA PRIOR TO THE GENERALLY COMMENCEMENT OF PHASE 6 WORKS HOWEVER THIS AREA WILL ONLY BE FINISHED TO IT'S FINAL STATE IN PHASE 6.

ACCESS TO BE MAINTAINED TO AGAR CHILDREN'S CENTRE AT ALL TIMES

Mark	Revision	Drawn	Date	Chkd
P1	FIRST ISSUE	LH	14,11,13	MD

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.
UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect his operations.

Drawing Issue Status
PRELIMINARY

AGAR GROVE ESTATE, CAMDEN

INDICATIVE PHASES OF CONSTRUCTION COMPLETION

Client
LONDON BOROUGH OF CAMDEN

Date of 1st Issue	Drawn by
14,11,13	LH
A0 Scale	Checked by
1:250	MD

Drawing Number: 28732-C-SK05
Revision: P1

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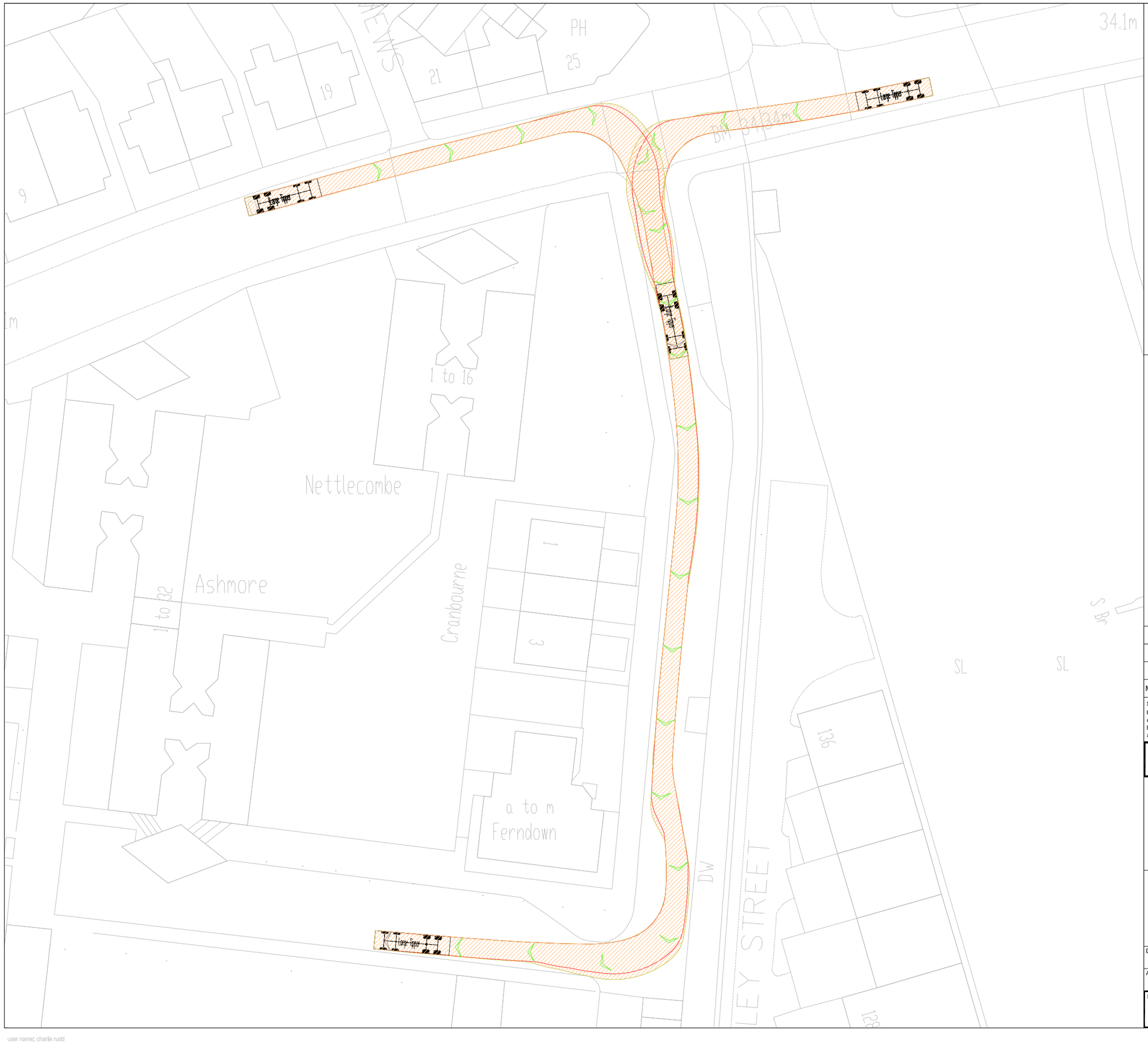

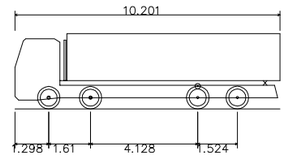

Large Tipper	
Overall Length	10.201m
Overall Width	2.500m
Overall Body Height	2.893m
Min Body Ground Clearance	0.343m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	11.550m

Mark	Revision	Drawn	Date	Chkd

SCALING NOTE: Do not scale from this drawing. If In doubt, ask.

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Drawing Issue Status

FOR INFORMATION

AGAR GROVE ESTATE, CAMDEN
ESTATE ACCESS ROAD
LARGE TIPPER SWEPT PATH ANALYSIS

Client

LONDON BOROUGH OF CAMDEN

Date of 1st Issue	Drawn by
19/11/13	CR
A3 Scale	Checked by
1:500	MD

Drawing Number: 28732/001/017

Revision: -

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10 Summary and Conclusions

10.1.1 The proposed development will provide a total of 493 residential units once complete which is a net increase of 244 residential units above the existing 249 residential units. The proposals will also provide 57 vehicle parking spaces overall including 11 electric vehicle charging points, two Car Club bays, and 587 cycle parking spaces.

10.1.2 The access proposals include introducing a one-way pedestrian and cycle priority route within the site providing access for servicing and emergency vehicles.

10.1.3 The proposed development will lead to enhanced permeability through the site for pedestrians and cyclists, not only for the residents of Agar Grove but also for the wider community. The improved pedestrian connections will perceptibly reduce the walking distance to the bus stops and encourage the use of sustainable modes of transport.

10.1.4 The development impact has been assessed and it was found that the impact of a net increase of 256 (505 proposed and 249 existing units) residential units will generate a total of 265 two-way trips during the morning peak hour and 256 two-way trips during the evening peak hour. The development impacts on the surrounding road network and the public transport is estimated to be negligible.

10.1.5 The proposed development will provide enhanced pedestrian and cycle connectivity, policy compliant vehicle parking and cycle parking provision and as such is compliant with the national, regional and local policies