Patel Taylor

Cambridge Road Estate
Hybrid Planning Application

November 2020

Transport Assessment

CRE
CAMBRIDGE ROAD ESTATE

COUNTRYSIDE
Places People Love

THE ROYAL BOROUGH OF
KINGSTON
UPON THAMES

The Applicant

Cambridge Road (Kingston) Ltd

c/o Countryside Properties
Aurora House
71-75 Uxbridge Road
Ealing
London W5 5SL

The project site

Cambridge Road Estate
Project hub

2 Tadlow
Washington Road
Kingston Upon Thames
Surrey
KT1 3JL

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Application Form and Notices

CIL Additional Information Form

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Arboricultural Impact Assessment & Method Statement
Preliminary Ecological and Bat Survey Report
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Archaeology and Heritage Assessment
Ground Conditions Assessment

Utilities Report

Flood Risk Assessment
Phase 1 Drainage Statement

Fire Strategy Report

Accessibility Audit
Health Impact Assessment
Equalities Impact Assessment

Transport Assessment

Cambridge Road Estate Regeneration

29 October 2020

Prepared for

Cambridge Road (RBK) LLP

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1. Introduction

1.1 Preamble

1.1.1 Markides Associates (MA) has been instructed to prepare this Transport Assessment by Cambridge Road (RBK) LLP (hereafter referred to as the 'the applicant") in support of a hybrid planning application for the regeneration of the Cambridge Road Estate. The proposals include the demolition of the existing estate and its replacement with a mixed-use development of approximately 2170 dwellings, retail, office, community uses, and new public open spaces food outlets. The site is approximately 9 hectares.

1.1.2 The site falls within the administrative authority area of the Royal Borough of Kingston upon Thames (RBK) who act as both the planning and highway authority.

1.1.3 The site is not located close to the Transport for London (TfL) Road Network (TLRN) but as the proposed development is a scheme of size and scale referable to the Mayor the Greater London Authority (GLA)/TfL will be a statutory consultee.

1.2 The Site

1.2.1 The Cambridge Road Estate (CRE) is located approximately 1km to the east of Kingston and is surrounded by largely residential development to the north, east and west, with Kingston Cemetery to the south.

1.2.2 The site area extends to approximately 9 hectares (ha). Cambridge Road Estate (CRE) was built in the 1970s and consists of the following buildings and facilities:

- 832 residential homes distributed across 4 multi-storey blocks of 17 storeys in height, low-rise blocks of 4/5 storeys in height and 2 storey terraced housing.
- The Bull and Bush Hotel within the west of the site.
- Piper Community Hall within the south of the site.
- Small formal and informal spaces/play spaces and ground level car parking areas.
- The site has significant level differences which make it difficult for those with accessibility concerns or parents with pushchairs to move easily through the site.

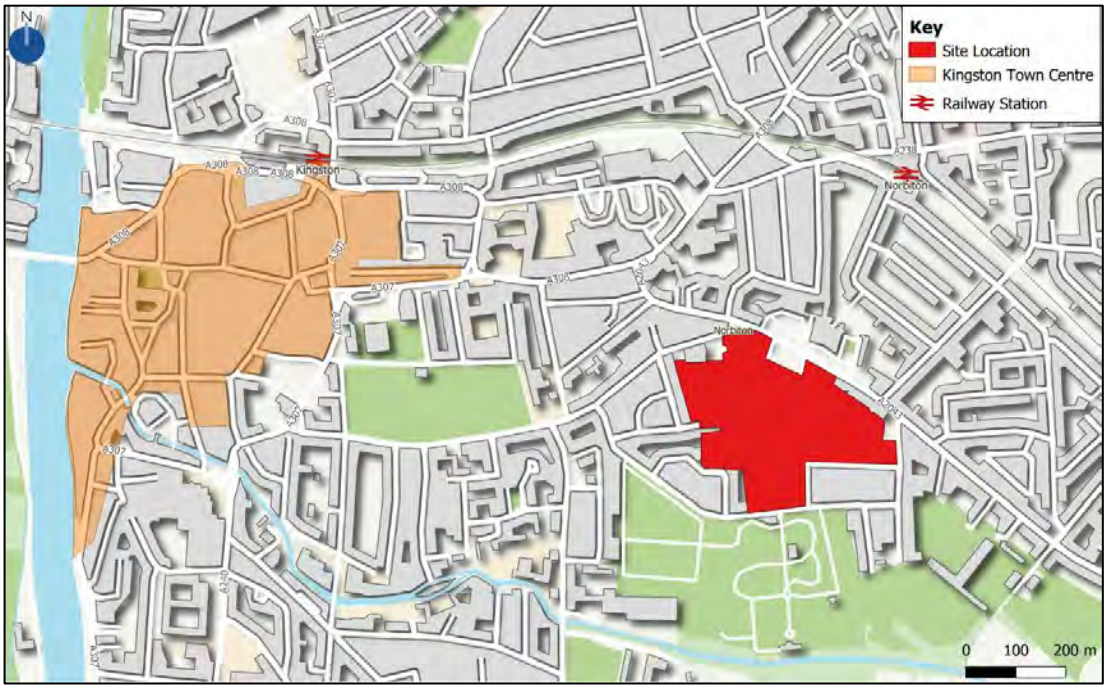
1.2.3 Cambridge Road runs northwest / southeast on the northern boundary of the site. Hawks Road from its junction with Cambridge Road effectively runs west towards Kingston from the north-eastern corner of the site. Vehicular/pedestrian access from the north is taken directly from Cambridge Road itself. From the east access is from Hampden Road, Vincent Road, and Cambridge Grove Gardens (all via Hampden Road). From the west access is from Bonner Hill Road, Somerset Road, Rowlls Road/Piper Road, via Bonner Hill Road.

1.2.4 There are many pedestrian access points across the estate. However, they do not form a coherent network, instead they are disjointed and indirect. There are also level differences across the estate which make getting about more difficult for those with mobility impairments.

1.2.5 Cycling within the estate is considered to be relatively unattractive due to the level differences and unwelcoming environment.

1.2.6 A site context plan is shown in **Figure 1.1** as an extract and is reproduced to scale at the end of this report.

Figure 1.1 Site Context Plan



1.3 The Proposed Development

Description of Development

1.3.1 Specifically, this planning application proposes:

"Hybrid Planning Application for a mixed use development, including demolition of existing buildings and erection of up to 2,170 residential units (Use Class C3), 290sqm of flexible office floorspace (Use Class E), 1,395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), 1,250sqm community floorspace (Use Class F2), new publicly accessible open space and associated access, servicing, landscaping and works.

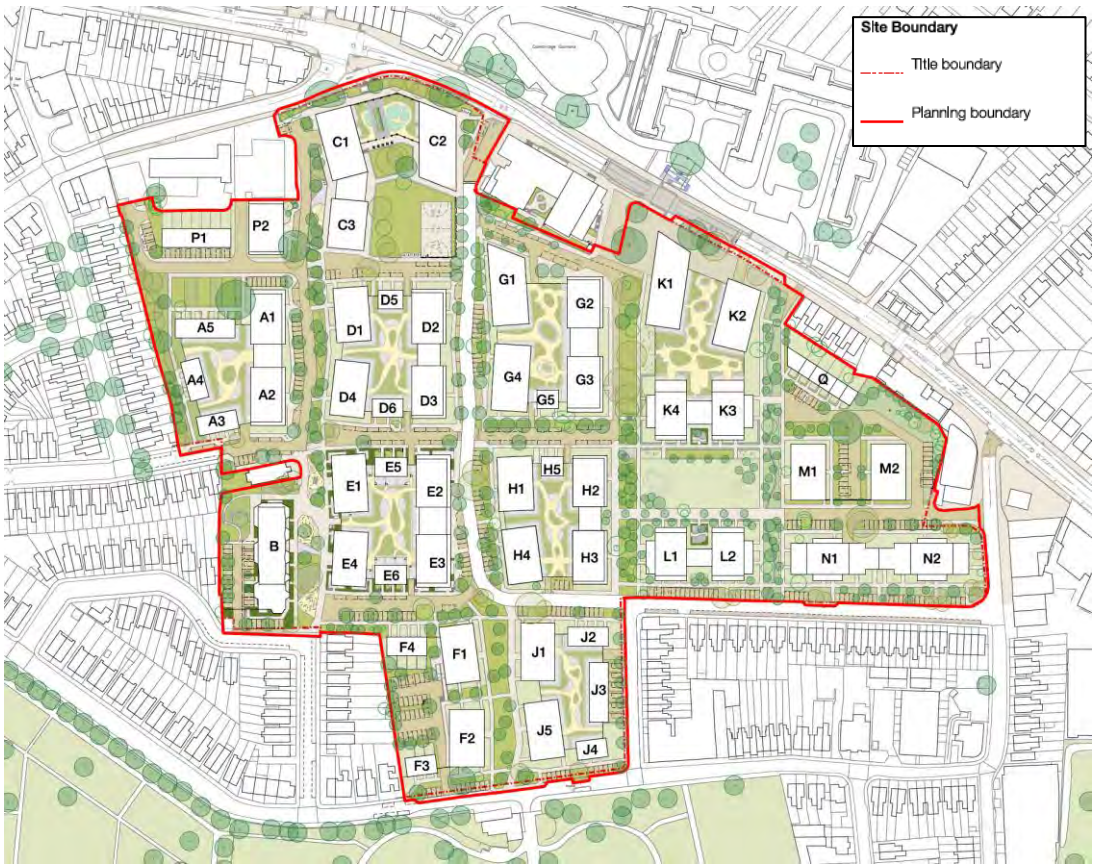
Detailed permission is sought for Phase 1 for erection of 452 residential units (Use Class C3), 1,250sqm community floorspace (Use Class F2), 290sqm of flexible office floorspace (Use Class E), 395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), new publicly accessible open space and associated access, servicing, parking, landscaping works including tree removal, refuse/recycling and bicycle storage, energy centre and works

Outline permission (with appearance and landscaping reserved) is sought for the remainder of the development ("the Proposed Development")."

1.4 Masterplan and Phase 1 Layouts

1.4.1 **Image 1.1** shows the proposed masterplan with **Image 1.2** showing the Phase 1 site plan. **Appendix A** contains both plans in full.

Image 1.1 Illustrative Masterplan



Source: Patel Taylor 503-PTA-MP-RF-DR-A-1201 P23

Image 1.2 Phase 1 Site Plan

Source: Patel Taylor 503-PTA-MP-RF-DR-A-5101 P02

1.5 Planning Policy

1.5.1 This planning application has been prepared in consideration of national, regional and local transport planning policies that are relevant to the development site including:

- National Planning Policy Framework – NPPF (2019).
- The London Plan (2016).
- The Draft London Plan (2019).
- The Mayor's Transport Strategy (2019).
- Healthy Streets for London (2017).
- Vision Zero Action Plan (2018).
- Kingston Local Plan 2015-2030
- Sustainable Transport SPD (May 2013)
- Cambridge Road Estate – Strategic Development Brief

1.5.2 A summary of the relevant planning policies and standards for the proposed development site is provided in **Appendix B** .

1.6 Healthy Streets, Vision Zero and the Mayor's Transport Strategy

1.6.1 The development has been designed to support the strategic priorities of the Mayor in terms of Healthy Streets, Vision Zero and the Mayor's Transport Strategy (MTS). **Table 1.1** provides a summary of the primary design components and considerations relevant to these strategic objectives.

Table 1.1 Supporting Strategic Transport Objectives

Design Principle	Description	Objectives		
		MTS	Healthy Streets	Vision Zero
Development within high Public Transport Accessibility Level (PTAL) area	The proposed development significantly improves the PTAL rating improving accessibility to established public transport, walking and cycling networks maximising their likely use.	✓	✓	✓
Lower Car Parking Provision	The proposals will reduce the amount of car parking and encourage the use of sustainable transport trips through design.	✓	✓	
Priority for walking and cycling	The masterplan creates a new public space for people to stop and dwell. Improved and more direct routes which are safer for pedestrians and cyclists, as well as improved links to the surrounding area	✓	✓	✓
Servicing Strategy	The development and Framework Delivery and Servicing Plan have been designed with safety and efficiency in mind. Minimising conflict across the site and aiming to reduce the level of service trips generated.		✓	✓
Creation of new public realm	The creation of new public space provides for people to stop and rest and find shelter.		✓	
Active Frontages	A significant proportion of the ground floor of proposed buildings will provide an active frontage increasing natural surveillance and therefore perception of safety and active uses providing spaces for people with things to see and do.		✓	
Reducing vehicle trips	The development results in a forecast reduction in vehicle-based trips, providing the ability for cleaner air and safer streets.	✓	✓	✓
Sustainable freight	The design has considered opportunities for encouraging sustainable freight, such as designing for Cargo Bikes.		✓	

1.7 Pre-Application Engagement

Royal Borough of Kingston Upon Thames Engagement

1.7.1 A number of formal pre-application discussions have taken place with RBK, including the highways officers. These discussions have informed both the scope of this TA and the design detail proposed. The primary points of feedback from officers following these discussions are summarised below:

- Car lite development with a ratio of 0.4 spaces per unit is supported, subject to new residents not being able to apply for a parking permit for any existing or future Controlled Parking Zone (CPZ).
- Disabled parking to be in accordance with the draft London Plan.
- Cycle parking to be provided in accordance with the Draft London Plan.

- RBK supported the overall strategy for the site access and routes through the site.
- RBK supported the strategy to restrict rat-running between Hawks Road and Cambridge Road.
- RBK supported the principle of using the junction of Hawks Road and Washington Road for construction vehicles only.
- RBK supported a manual PTAL calculation incorporating the pedestrian route through Cambridge Gardens.
- RBK supported the principle of the TA focussing on the masterplan application with detailed points to be covered under Reserved Matters Applications (RMA).

1.7.2 Two Scoping Notes were submitted to RBK which are provided in **Appendix C** .

TfL Engagement

1.7.3 An initial screening meeting was held with TfL on the 17th September 2019, with the primary points of feedback from officers following these discussions are summarised below:

- The TA should be in accordance with the Healthy Street Approach.
- TfL support a car lite development with a ratio of 0.4 spaces per unit.
- New residents should not be able to apply for a parking permit for any existing or future CPZ.
- Disabled parking to be in accordance with the Draft London Plan.
- Cycle parking to be provided in accordance with the Draft London Plan.
- TfL noted the high-quality public realm proposed and that the site will improve permeability and connectivity of the site and reduce walking distances to local bus stops.
- TfL supported a manual PTAL calculation incorporating the pedestrian route through Cambridge Gardens.
- TfL would not require a local junction modelling.
- TfL requested a potential route through the site be available for buses in the future.
- TfL requested Active Travel Zone (ATZ) to cover routes to Norbiton & Kingston Railway Stations, bus stops, Kingston Town Centre, Schools, Kingston Hospital and Parks.

1.8 Other Transport Related Supporting Documents

1.8.1 In accordance with the pre-application engagement, the following transport related documents are also submitted in support of the detailed phase 1 and outline application:

- Framework Travel Plan (FTP).
- Framework Delivery and Servicing Plan (FDSP).
- Framework Car Park Management Plan (FCPMP).
- Framework Construction and Logistics Plan (FCLP).

1.9 Report Structure

1.9.1 This report is structured as follows:

- **Chapter 2** – covers information on transport planning for people, including details of the development proposals.
- **Chapter 3** – provides an overview of the Site and its surroundings.
- **Chapter 4** – outlines the ATZ in relation to the site.
- **Chapter 5** – provides details of the London-wide network in relation to the site, including details of the trip generation characteristics of the development and design solutions.
- **Chapter 6** – provides consideration of the construction and logistics related impact of the development proposals.
- **Chapter 7** – provides a summary of the key transport impacts/issues and the solutions/mechanisms and concluding remarks.

2. Transport Planning for People

2.1 Overview

2.1.1 This section provides details of the proposed development, including details on who the development is for, when they will travel there and why.

2.2 Development Proposals

2.2.1 **Table 2.1** shows the different development quantum between the existing site and the proposed masterplan. The table also shows the proposed schedule for Phase 1 of the development – the detailed element of the application.

Table 2.1 Area Schedule (Existing / Proposed / Phase 1)

Land Use	Existing	Masterplan Proposals	Difference (+/-)	Phase 1
Residential (C3)	832 Units	2170 Units	1338 Units	452 Units
Flexible Office (E)	N/A	290 sqm	290 sqm	290 sqm
Flexible Retail / Commercial (E)	N/A	1395 sqm	1395 sqm	395 sqm
Community (F1/F2)	290 sqm	1250 sqm	960 sqm	1250 sqm
Total Non-Residential Uses	1948 sqm	2935 sqm	987 sqm	1935 sqm

2.2.2 The proposed development results in an increase of 1338 dwellings with an increase of 987 sqm commercial / retail / office floorspace.

Transport Elements of the Proposed Masterplan

2.2.3 The proposed development includes the demolition of the existing estate including the removal of all existing footways, paths, and roads provides including the stopping of existing highway, maintainable at the public expense (public highway). The site will then be comprehensively redeveloped providing, once fully complete, the land uses shown in **Table 2.1**.

2.2.4 The masterplan will create new east/west and north/south connections to the existing highway infrastructure improving permeability and connectivity through the site. The masterplan provides new public realm and green spaces.

2.2.5 The outline application will be guided by a set of parameter plans which will fix the development within certain parameters which cover a wide range of items include building height location as well as transport related elements such as location and routes for pedestrians, cycles and vehicles and locations of new accesses.

2.2.6 Key elements of the masterplan (transport related) include:

- Prevention of rat-running through the new estate:

- Improved walking and cycling links
- Improved public realm and public open space
- Car lite scheme with a parking ratio of 0.4 spaces per dwelling.
- Provision of Car club spaces onsite for those without access to their own car.
- Provision of electric vehicle charging points in accordance with TfL standards.
- Provision of cycle parking in accordance with TfL standards.
- Significant improvement in the sites PTAL rating.
- Reduction in vehicle trips compared to the existing site.
- New residents will be prevented from purchasing a permit to park in existing or future Controlled Parking Zones – therefore there will be no increase in pressure on the level of on-street parking capacity.

2.3 New Development Users

2.3.1 The proposed development has the potential to influence how people choose to travel because the site is located within close proximity to Kingston town centre and benefits from good accessibility to public transport as described later in this report.

2.3.2 The primary users of the site will be residents and it is expected that they will likely follow a typical residential trip profile with many people travelling to and from work during the morning and afternoon peaks with other trips throughout the remainder of the day for shift working, leisure or education purposes for example.

2.3.3 The work space uses are expected to follow similar travel patterns in terms of peak time travel, with the retail and community uses expected to be ancillary to the development in the local area and generating pass-by or linked trips from residents of the new development or those living and/or working in the local area.

2.3.4 The Transport Classification of Londoners (TCL) demographic segments have also been referenced in order to identify the TCL segment users of the site would most likely fall into. Kingston is predominately classified as 'Detached Retirement' which accounts for 58% of the borough. However, it does not reflect the existing estate which does experience social issues where the Family Challenge classification of the TCL may be more appropriate. However given the location of the development its proximity to public transport and the flatted nature of the dwellings it may be that other classifications in addition to Family Challenge as Affordable Transitions, Educational Advantage, or Urban Mobility for example may become part of the demographic, which is ultimately the driver of many large scale urban developments such as this. All of which generally have lower car ownership and also an above average propensity to change travel behaviour to more active modes.

Table 2.2 shows the percentage of all trips undertaken by residents of RBK between 2015/16 and 2017/18 (The Travel in London Report 12 (2018) Page 69 & the accompanying dataset).

Table 2.2 Sustainable Trips in LBR (2015/16 – 2017/18)

Mode	Percent (%)
Public Transport	23
Cycle	3
Walk	32
Total	**58**

2.3.5 The table shows that for all trips which start or end within RBK 58% of residents use sustainable modes of transport, which covers the entire borough. Whereas, the output area from the 2011 Travel to Work census data shows that 70% of residents use sustainable modes of transport with Section **3.8** providing more detail.

3. Existing Conditions

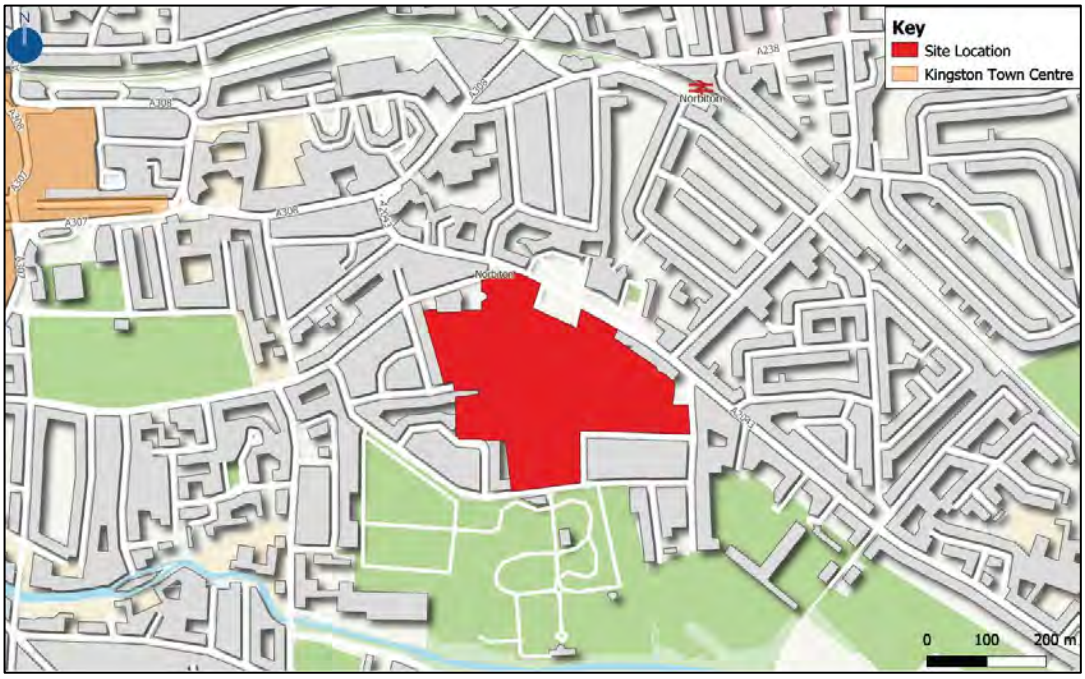
3.1 Overview

3.1.1 This section of the report provides details of the site as existing, its permitted uses, access arrangement and accessibility by all modes.

3.2 Site Description

3.2.1 The site is located off Cambridge Road, Kingston Upon Thames, KT1 3JB ('the site'), which is positioned to the west of the A2043 within walking distance of Kingston Town Centre and Norbiton. A site location plan is included as **Figure 3.1** as an extract below and included to scale at the end of this report.

Figure 3.1 Site Location Plan



3.2.2 The area is currently a housing estate, made up of 832 residential dwellings (use class C3) units in the form of both flats and terrace housing. The site covers some 9 ha. The site can be separated into 31 individual areas, those being different building types. The building types that are scattered around the development site include tower blocks consisting of between 60 and 61 residential units, slab blocks consisting of between 12 to 42 residential units, low-rise flats consisting of 12 units and terrace housing. The development site is enclosed by the A2034 Cambridge Road to the east, Hawks Road to the north, Portman Road/Piper Road to the west and finally Bonner Hill Road to the south of the site, as well as Kingston Cemetery and Crematorium.

3.3 Local Facilities

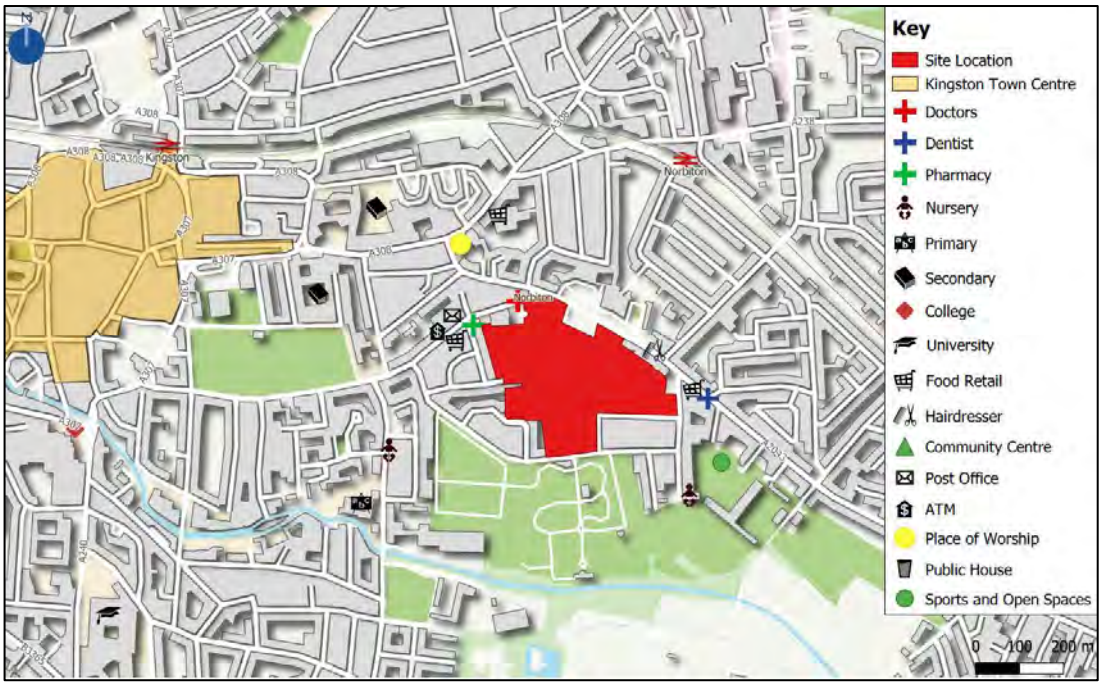
3.3.1 **Table 3.1** provides a summary of the local facilities surrounding the site and approximate walking/cycling distances. Due to the composition of the site, all of the measures have been taken from the local facility to the middle of the development site.

Table 3.1 Local Facilities

Facility		Location	Distance	Travel Time (mins)	
				Walk	Cycle
Medical Facilities					
Doctors	Hawks Road Clinic	KT1 3EW	200m	2	1
Dentist	Simply Crown and Bridge Dental Laboratory	KT1 3LF	700m	9	3
Pharmacy	Hawks Pharmacy	KT1 3JB	350m	4	1
Education Facilities					
Nursery	Kings Meadow Pre-School	KT1 3HG	550m	6	2
	The FeatherNest Nursery	KT1 3AP	800m	10	3
Primary	King Athelstan Primary School	KT1 3AR	750m	9	3
Secondary	Tiffin School	KT2 6RL	1.1km	14	5
	Kingston Grammar School	KT2 6PY	900m	11	4
College	Kingston College	KT1 2AQ	1.4km	18	6
University	Kingston University	KT2 6TN	700m	9	3
Retail Facilities					
Food Retail	SPAR	KT1 3LU	800m	10	4
	Costcutter	KT1 3NQ	650m	8	3
	Hawks Local	KT1 3EG	500m	6	2
	ASDA Kingston Upon Thames	KT2 6QL	650m	8	3
Hairdresser	Capelli	KT1 3NS	650m	8	3
Community Facilities					
Community Centre	Piper Hall	KT1 3EX	180m	2	1
Post Office	Hawks Road Post Office	KT1 3EG	500m	6	2
ATM	Costcutter ATM	KT1 3NQ	650m	8	3
Place of Worship	Churches together Surbiton and Tolworth	KT2 6QL	650m	8	3
Public House	The Cricketers	KT1 2UL	800m	10	3
Sports and Open Spaces	Kingstonian Football Club Ground & AFC Wimbledon	KT1 3PB	1km	15	5
	F45 Training Kingston	KT1 3LF	650m	8	3

3.3.2 The facilities outlined in the table above are shown diagrammatically in **Figure 3.2** which is included at scale at the end of this report.

Figure 3.2 Local Facilities Plan



3.3.3 The figure above shows that a range of land uses are located within close proximity to the site, ensuring that these trips attractors can be accessed by all modes other than the private car and realistically on foot or by bike. This reflects the fundamental requirements of national, regional, and local planning policy for creating sustainable communities. The Chartered Institute of Highways and Transportations (CIHT) March 2015 guidance document, 'Planning for walking', states that 'walkable neighbourhoods' are those with a typical catchment of around 800m, with many of the key identified land uses being within this walking distance threshold.

3.4 Pedestrian and Cycle Access

3.4.1 In terms of pedestrian infrastructure, there are adequate footways across the whole of the site, where footways and footpaths are between 1.5 and 2.5m wide. According to 'Manual for Streets' an acceptable width for a footway is 2m.

3.4.2 Footways are lit which provides for a safe and accessible environment for residents to be able to travel to foot at any time of the day and/or the year. However, this does not provide safe or accessible access for all users in terms of navigation or level changes which occur throughout the site.

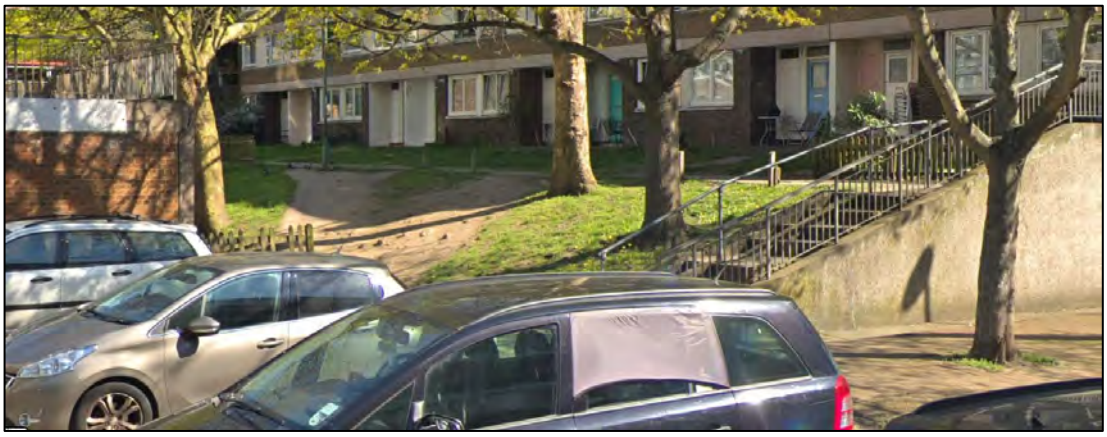
3.4.3 The current development site provides pathways for residents to be able to navigate around the estate roads. **Image 3.1** shows there are dropped kerbs and tactile paving on adopted roads within the site which aids the safe crossing of the roads.

Image 3.1 Site Footways (Willingham Way)

Source: Google Street view

3.4.4 Whilst the infrastructure may be acceptable in terms of footway widths and tactile paving the estate does suffer from some substantial level differences which are difficult for those with accessibility concerns, or parents with young children and/or pushchairs to negotiate. **Image 3.2** shows an example of an informal ramp and steps which are not suitable for wheelchair users, or pushchairs making active travel more difficult.

Image 3.2 Existing Level Differences



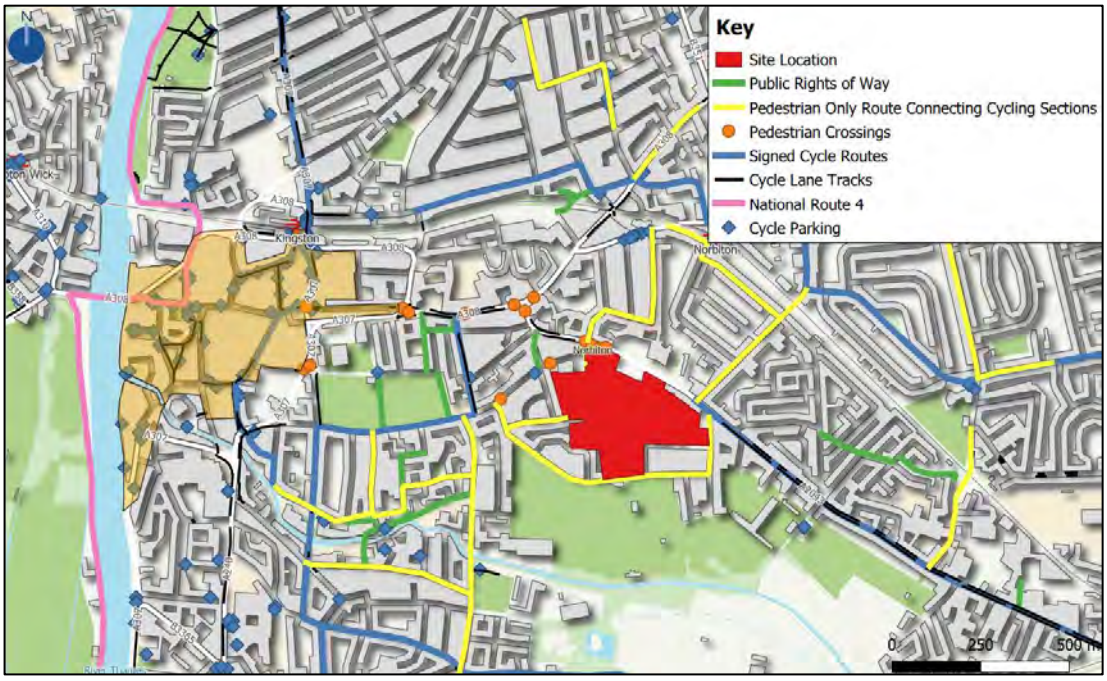
Source: Google Street view

3.4.5 The site is surrounded by a network of pedestrian and cycle infrastructure, with the main cycle infrastructure being in place along the A2043 Cambridge Road in the form of on carriageway cycle lanes. Although the cycle lanes are intermittent, they do provide a largely

segregated route into Kingston Town Centre which provides a large number of local amenities to the development site.

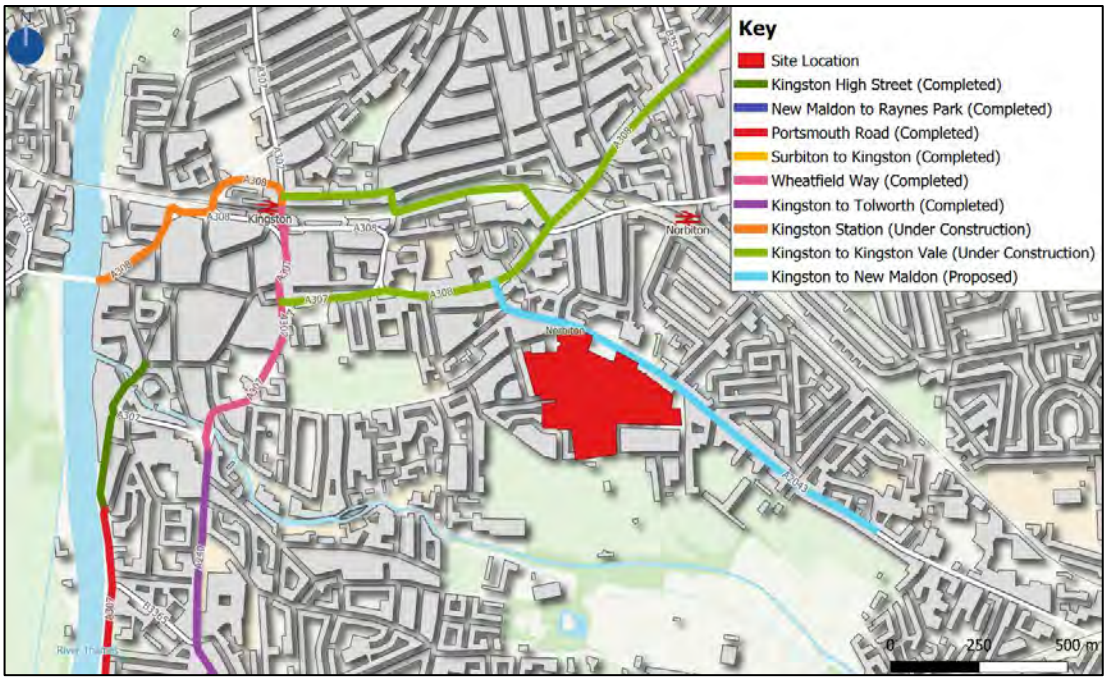
3.4.6 Pedestrian and cycle infrastructure within the vicinity of the development site, is shown in **Figure 3.3**.

Figure 3.3 Pedestrian and Cycle Infrastructure Plan



3.4.7 RBK are currently designing a new cycle route which will provide a fully segregated cycle route along the A2043 between Kingston Town Centre and New Malden. The proposed cycle infrastructure has been highlighted in **Figure 3.4**. The new cycle route is part of the 'Go Cycle' proposals, which is a £32 million infrastructure transformation project funded by the Mayor of London.

Figure 3.4 Go Cycle Scheme



3.4.8 The figure above shows that the site will benefit from a new high-quality segregated cycle infrastructure linking New Malden with Kingston town centre and beyond to Surbiton and Tolworth. RBK's website states construction is due to start in 2020/2021.

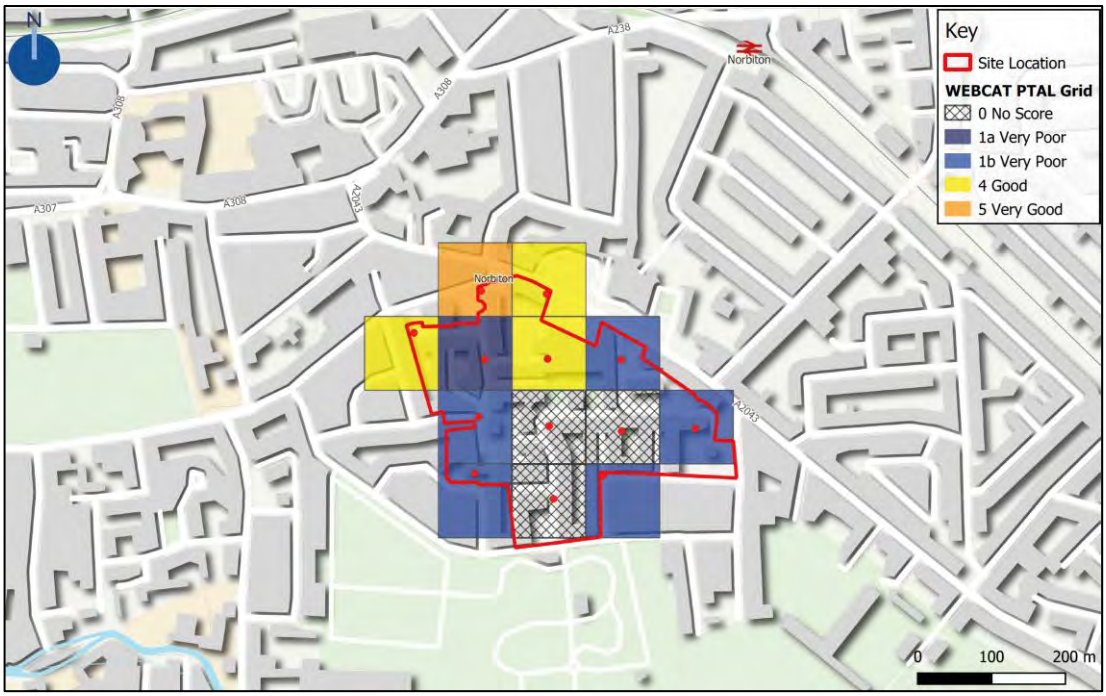
3.5 Public Transport

Public Transport Accessibility Level (PTAL)

3.5.1 Public Transport Accessibility Levels (PTAL) are a theoretical measure of accessibility of a given point to the public transport network, considering walk access time and service accessibility. All bus routes within 640m and underground/rail stations within 960m are considered within the calculation; any transport services beyond this distance are disregarded.

3.5.2 A PTAL score ranges between 1a and 6b, where 1a represents a poor level of accessibility and 6b an excellent level. The PTAL rating of the site has been assessed using the TfL land use planning PTAL assessment tool WebCAT. The WebCAT assessment of the site location identifies PTAL ratings between 0 and 5 at the site. **Figure 3.5** shows the existing PTAL of the site, with the full PTAL output included in **Appendix D** .

Figure 3.5 Existing PTAL Rating



Source: TfL WebCAT tool

3.5.3 The PTAL rating does show that some parts of the existing estate are relatively inaccessible to public transport. Section **3.4** outlined some of these issues. Chapter **5.9** outlines the impact of the masterplan on the PTAL rating.

Bus Accessibility

3.5.4 The bus stops which are within the closest proximity to the development site are situated on the A2043 Cambridge Road are named 'Cambridge Road' Stop A and Stop L. These are located 550m from the centre of the development site, which is around a 7-minute walk. These bus stops are served by bus routes 131 and N87. Further to this, there are also bus stops located to the north of the site along the A308 London Road and are called Norbiton Church, these are located 700m to the north of the centre of the site, which is around an 8-minute walk. Norbiton Church bus stop is served by 57, 85, 213, 371, K2, K3, K4, and K5 bus routes. The routes and frequency of these services are outlined in **Table 3.2**.

Table 3.2 Local Bus Services

Bus Number	Route	Peak Hour Frequency			Weekday Services	
		Weekday	Saturday	Sunday	First	Last
Cambridge Grove						
131	Fairfield Bus Station – Tooting Broadway Station	Every 5-10 minutes	Every 6-9 minutes	Every 10-13 minutes	05:16	00:01
N87	Aldwych/ Somerset House – Fairfield Bus Station	4 per hour	4-5 per hour	4 per hour	01:12	05:54
Norbiton Church						
57	Fairfield Bus Station – Atkins Road/New Park Road	Every 7-12 minutes	Every 8-13 minutes	Every 9-13 minutes	24 hours	24 hours
85	Kingston Hall Road – Putney Bridge Station	Every 7-11 minutes	Every 7-12 minutes	Every 8-11 minutes	24 hours	24 hours
213	Sutton Bus Garage – Fairfield Bus Station	Every 7-12 minutes	Every 7-13 minutes	Every 10-14 minutes	24 hours	24 hours
371	Manor Road/Sainsburys – Kingston Hall Road	Every 10-11 minutes	Every 2-8 minutes	Every 11-13 minutes	05:51	01:27
K2	Hook Parade – Kingston Hospital	Every 8-12 minutes	Every 10-11 minutes	Every 20 minutes	05:55	00:01
K3	Trinity School – Roehampton Vale / Asda	4 per hour	4 per hour	3 per hour	06:14	00:02
K4	Kingston Hospital – Ripon Gardens	2 per hour	2 per hour	None	06:08	23:53
K5	Dysart Avenue – Morden Station	2 per hour	2 per hour	None	06:21	19:32

3.5.5 The table above shows that there are a large number of bus services that serve the development site, with destinations including Roehampton, Kingston, Kingston Hospital, Tooting, Sutton and Putney Bridge Station.

Rail Facilities

3.5.6 The nearest railway station is Norbiton Railway Station which is approximately 900m north east of the railway station, which is around a 13-minute walk from the site. Norbiton Railway Station is served by South Western Railway with destinations including London Waterloo Station, Richmond and Kingston l. The site is also within walking distance of Kingston Railway Station which is located 1.4km to the north west of the development site which is around an 18-minute walk. Kingston Railway Station is also served by South Western Railway and therefore has the same destinations as Norbiton Railway Station.

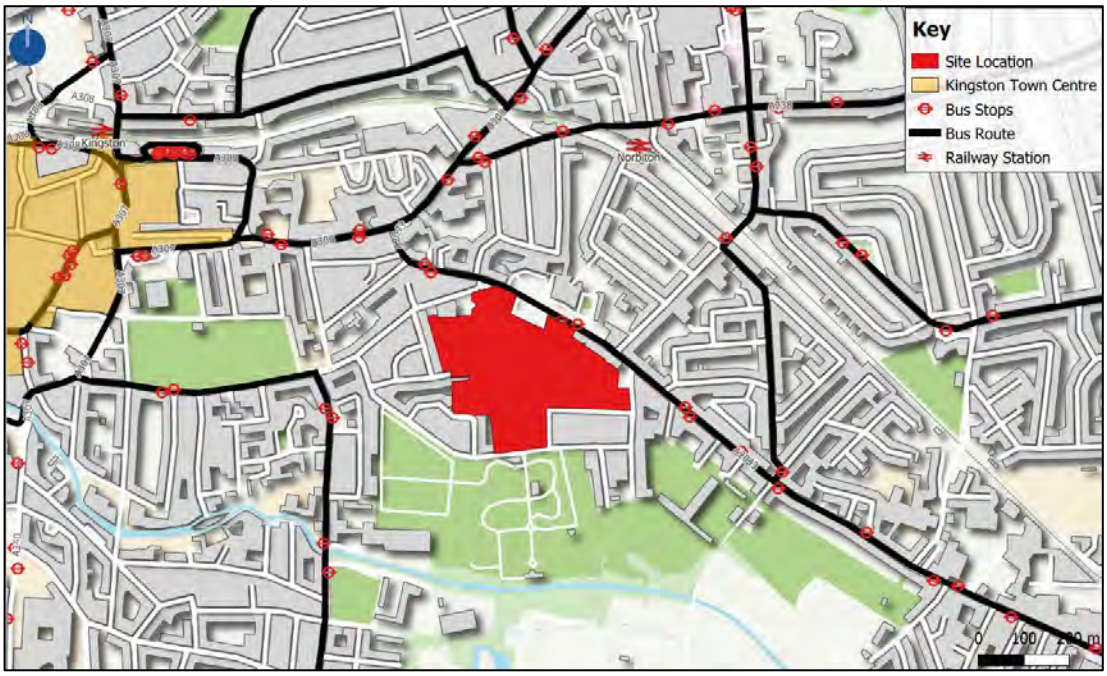
3.5.7 The local railway services by destination, their frequency and journey times are summarised in **Table 3.3**.

Table 3.3 Local Rail Services

Direct Service Destination	Peak Hour Frequency			Approx. Journey Times
	Weekday	Saturday	Sunday	
Norbiton/Kingston Railway Station				
London Waterloo Station	5 per hour	4 per hour	3 per hour	29 minutes
Wimbledon	4 per hour	4 per hour	2 per hour	10 minutes
Clapham Junction	6 per hour	4 per hour	2 per hour	20 minutes
Shepperton	2 per hour	2 per hour	2 per hour	29 Minutes
Richmond	2 per hour	2 per hour	2 per hour	26 minutes
Putney	2 per hour	2 per hour	2 per hour	37 minutes

3.5.8 The table above demonstrates that the site benefits from frequent rail services to/from Norbiton and Kingston Railway Stations via South Western Railway services to destinations including London Waterloo Station, Wimbledon and Clapham Junction, with onward connections to the rest of London and the UK. **Figure 3.6** shows the bus and rail infrastructure.

Figure 3.6 Public Transport Plan



3.6 Local Highway and Parking

3.6.1 The site is bound by Bonner Hill Road to the south, the A2043 Cambridge Road to the east, Hawks Road to the north and Piper Road, Somerset and Portman Roads to the west.

3.6.2 The A2043 Cambridge Road is a single carriageway, two-way road which forms a main arterial road through Norbiton towards New Malden which is located to the south east of the development site. This route has a speed limit of 30mph. The A2043 Cambridge Road provides one access point directly into the estate at the junction of St Peters Road. The junction of Cambridge Road and Hampden Road provides access on the eastern side of the estate via Vincent Road and Burritt Road. Access to the site from the west is from Somerset Road, Bonner Hill Road, Rowlls Road and Piper Road, all via Bonner Hill Road or Portman Road which lead to Hawks Road.

3.6.3 Hawks Road runs from its junction with Cambridge Road in the north west of the site to Kingston town centre in the west via Fairfield South.

3.6.4 All the roads within the vicinity of the site have a speed limit of 20mph, with the exception of Cambridge Road which has a speed limit of 30mph.

3.6.5 Double yellow lines prevent on-street parking along the A2043, Cambridge Road because it benefits from bus lanes along both the northern and southern carriageway. Double yellow lines also prevent on-street parking on Hawks Road.

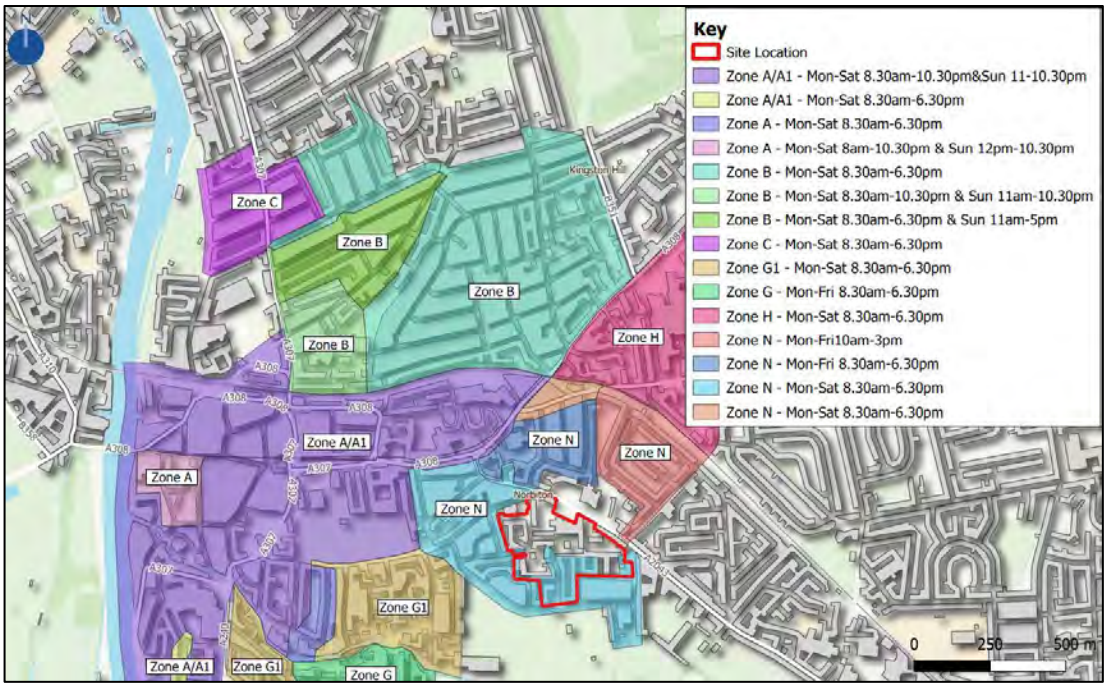
3.6.6 In terms of the highway within the estate itself there are a series of two-way residential roads which provide direct access to the residential units within the estate. The series of residential roads are all subject to a 20mph speed limit and they are all well-lit.

Controlled Parking Zones

3.6.7 The majority of the estate itself does not benefit from a Controlled Parking Zone (CPZ). There are areas within the estate where parking is controlled by either single or double yellow lines to support highway safety. Much of the estate is made up of unrestricted parking or private parking, which is not managed in any way, and is therefore effectively open to the general public.

3.6.8 **Figure 3.7** shows the extent and hours of operation for the CPZ within the local area.

Figure 3.7 CPZ Zones in the vicinity of CRE

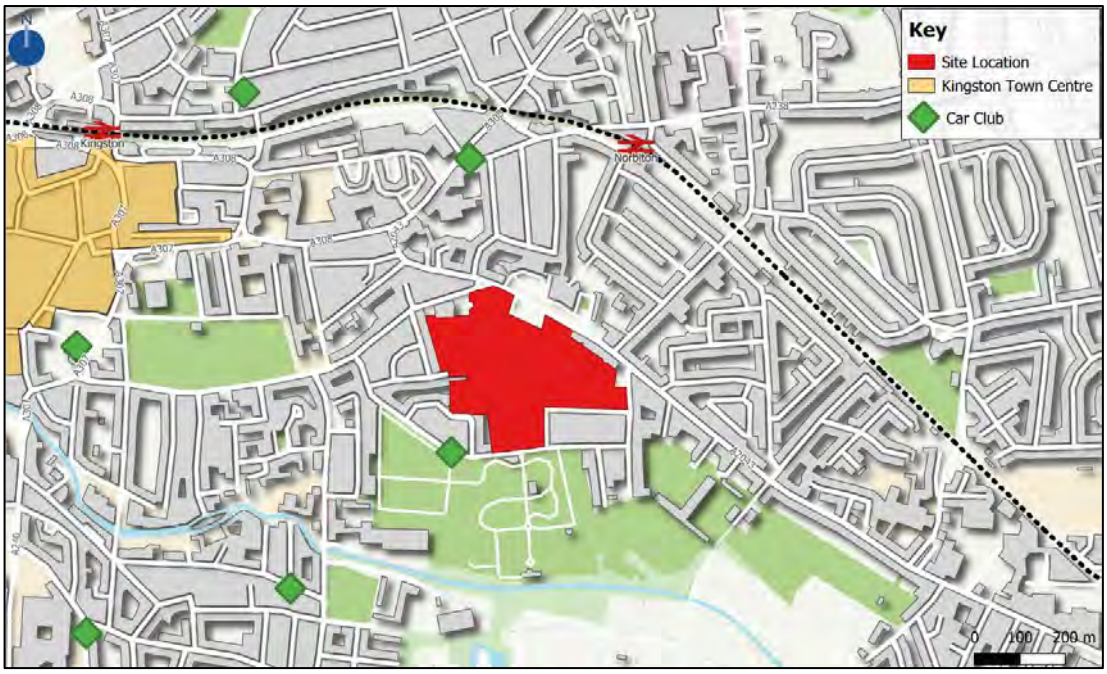


3.6.9 The figure above shows that the extent to which site is bounded by CPZ's.

3.7 Car Clubs

3.7.1 There are several car clubs located within close proximity to the development site. One of the car club spaces is located on Bonner Hill Road, which is approximately 350m from the centre of the development site, which is around a 4-minute walk. **Figure 3.8** shows the location of the existing car clubs.

Figure 3.8 Location of Existing Car Clubs



3.7.2 The car club spaces are operated by ZipCar which allows for cars and vans to be reserved at short notice via the internet/smart phone in order to hire the vehicle for the time and distance that is required. This car club scheme is available at all times, making it convenient and a sustainable travel choice at any time of the day.

3.8 Local Characteristics

Existing Modal Split

3.8.1 In order to establish local travel characteristics, the 2011 Census has been queried for method of travel to work data for the Middle Super Output Area (MSOA) Kingston Upon Thames 005, which includes this site. The results of this search are included in **Table 3.4** below.

Table 3.4 Method of Travel to work Census Information - Residents

Method of Travel to Work	Percent (%)
Underground, metro, light rail or tram	4%
Train	23%
Bus, minibus or coach	14%
Taxi	0%
Motorcycle, scooter or moped	1%
Driving a car or van	27%
Passenger in a car or van	1%
Bicycle	6%
On foot	23%
Other method of travel to work	0%
Total	**100%**

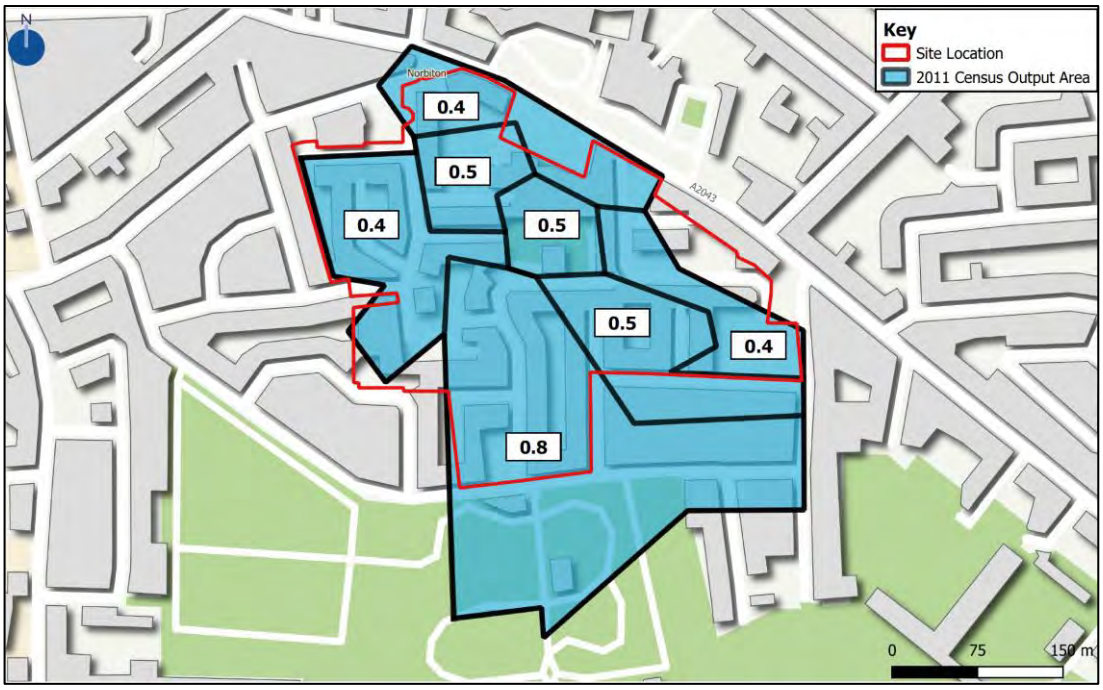
* *errors due to rounding*

3.8.2 The table above demonstrates that in the locality of the site, some 27% of people travelling to work via the use of the private car, with 41% of people travelling to work via public transport. 70% of people (within the 2011 Census Output Area in which the site sits), travel to work via sustainable transport, including by foot and by bicycle.

Existing Level of Car Ownership

3.8.3 The 2011 Census data (KS404EW - Car or van availability) has been reviewed to understand the level of car ownership within the site. **Image 3.3** shows the existing ownership levels (ratio of cars per dwelling) for each output area within the site.

Image 3.3 Existing Car Ownership Level (Ratio per dwelling)



Source: Replicated from the Nomis Website

3.8.4 The table above shows that for each output area within the site the car ownership level is between 0.4 and 0.5 vehicles per dwelling. The area to the south of the site has a ratio of 0.8 however, this includes houses which lie outside the site boundary which are likely to have a different car ownership profile.

Parking Beat Survey Results

3.8.5 A parking beat survey was undertaken on Wednesday 8th and Thursday 9th of July 2020, in accordance with the Lambeth Methodology for residential developments. The survey was split into two parts, the first surveyed an area 200m from the edge of the site, and the second surveyed the site itself.

3.8.6 A summary of the main points from the parking beat survey is provided below, with **Appendix E** providing a Technical Note outlining the results in more detail and which includes the raw data.

Offsite Parking Beat Survey Results

- Unrestricted parking (28 spaces) – 79% occupancy
- Permit holder parking (412 spaces) – 60% & 80% occupancy
- Permit holder which allow for daytime parking (155 spaces) – 50% occupancy
- Average occupancy of 47% / 48% across both days.

3.8.7 The above shows that beyond the site there exists additional on-street parking capacity.

Cambridge Road Estate Parking Beat Survey Results
• Unrestricted parking (134 spaces) – 77% and 78% occupancy • Private parking areas (304 spaces) – 88% and 87 % occupancy • Average occupancy of 56% and 57% across both days.

3.8.9 Within the site additional capacity exists for further parking. Chapters **4** and **8** outline how the proposed development will not impact upon the existing on-street parking stock outside of the application site boundary.

3.8.10 The parking beat survey identifies approximately 741 parking spaces. However, there are other parking spaces on-site which were not identified by the survey. There are a further 194 garages and driveways within the estate available for car parking. This brings the total to 935 spaces on site. This give a ratio of 1.1 spaces per dwelling for the existing site.

3.8.11 If the on-street spaces on Vincent Road and both elements of Cambridge Grove Road are included the number would increase to 1016 spaces (a ratio of 1.2 spaces per dwelling).

3.8.12 Whilst the level of parking available for the existing residents is high, there remains significant spare capacity, with the parking beat survey reflecting the 2011 census data on car ownership levels as outlined above in **Image 3.3**.

Existing Healthy Streets Indicators

3.8.13 **Table 3.5** provides a summary of the existing on-site/nearby public realm against the TfL Healthy Streets indicators to provide an overview of how the site performs within this context.

Table 3.5 Existing Healthy Streets Indicators

Indicator	Description
Choose to walk, cycle and use public transport.	CRE does not currently provide an attractive environment for walking and cycling, and the materials on the footway are failing. However public transport services in the area are of excellent quality providing an alternative to car use.
Pedestrians from all walks of life	Due to the uneven footways within the site, and vehicle crossovers disrupting the footways certain streets are not accessible and welcoming to all. The footway is quite narrow in parts. There are level differences across the estate which also make walking and cycling less attractive for residents and more difficult for pedestrians, particularly those with mobility issues or those with pushchairs for example.
Easy to cross	There are currently no formal crossings provided within the CRE estate. However, due to the low volumes of traffic, it is not difficult for people to cross the road when needed. Signalised crossings provide for trips on Cambridge Road and beyond the boundary of the site.
People feel safe	Due to the quiet nature the site, people may feel isolated while walking through it, and may choose to avoid it at night. There are existing social issues within the estate which may affect some people's perception of safety.

Things to see and do	There is very limited active frontage throughout the site, the site is not an interesting or engaging place to walk through or spend time in.
Places to stop and rest	There are limited places to stop and rest throughout the site. While there are some informal opportunities, these are not in places that are an attractive option.
People feel relaxed	Due to the low traffic on the roads, it is relatively quiet and so provides a relaxing environment to walk through in that respect. Parts of the footway within the site however do not feel well maintained and do not provide smooth and level surfaces for people walking.
Noise	The site benefits from being relatively quiet due to low traffic levels.
Clean Air	The site is well located for making walking, cycling and public transport trips quicker or more convenient than driving (for short trips), with parts of the site fronting Cambridge Rd falling just above the legal limit value of 40ug/m3 for NO2 concentration.
Shade and Shelter	While there are some limited options for people to find shade and shelter, overall, the site does not provide many options in case of need.

3.8.14 While the CRE site performs adequately in some of the Healthy Streets indicators, there is scope for improvement, particularly in the 'People Feel Safe', 'Things to See and Do', 'Pedestrians From All Walks of Life', and 'Places to Stop and Rest' indicators which the proposed development has sought to address.

3.9 Traffic Surveys

3.9.1 Automatic Traffic Counts (ATCs) were undertaken between the 16/07/19 and the 22/07/19. Some sites had to be re-surveyed (due to unreliable data and equipment being tampered with) and these occurred between the 09/09/19 and the 15/09/19. **Table 3.6** summarises the existing level of vehicular movement (all vehicles) into and out of the site at various locations.

Table 3.6 Weekday Average Trip Generation - ATC Data at Site Entrances

ATC Location	AM Peak			PM Peak			24Hr		
	In	Out	Total	In	Out	Total	In	Out	Total
Somerset Road	42	45	87	36	41	77	567	581	1148
St Peters Road	11	13	24	12	9	21	163	188	351
Burritt Road	24	36	60	33	30	62	460	449	910
Vincent Road	10	27	37	18	15	33	215	256	471
Cambridge Grove Road	4	1	4	5	2	7	78	41	119
Willingham Way	9	25	34	22	15	37	249	249	498
Total	**99**	**147**	**245**	**125**	**112**	**237**	**1732**	**1764**	**3497**

3.9.2 The above table shows that the level of vehicular activity in the AM and PM peak is approximately 245 trips in the AM peak and 237 in the PM peak with 3497 across the day.

Site Trip Distribution

3.9.3 **Table 3.7** summarises the sites vehicular trip distribution from the ATC's across the existing site.

Table 3.7 Existing Site Trip Distribution

ATC Location	Trip Distribution		
	AM Peak	PM Peak	Daily
Somerset Road	35%	32%	34%
St Peters Road	10%	9%	10%
Burritt Road	24%	26%	26%
Vincent Road	15%	14%	14%
Cambridge Grove Road	2%	3%	3%
Willingham Way	14%	16%	15%
Total	**100%**	**100%**	**100%**

3.9.4 The table above shows that Somerset Road has 34% of the daily estate traffic with Burritt Road accommodating 26%. The distribution from the site is more broadly split at 49% onto Hawks Road and 51% onto Cambridge Road.

3.10 Existing Junction Performance

3.10.1 Neither TfL nor RBK requested the modelling of any off-site junctions at the pre-application discussion stage.

3.11 Summary

3.11.1 The site is in a suitable location for residential use, with an existing PTAL of between 0 to 5. From the northern part of the site access is good to local amenities including food retail, sports facilities and also medical facilities including doctors, dentists and pharmacies. From the southern part of the site access to public transport is more difficult due to the walk distances involved (as a result of the impermeable design of the estate) and because of the level changes in part of the site.

3.11.2 The site benefits from being located near to an established bus network, which provides access to central Kingston as well as Kingston Hospital and Tooting. Kingston Town Centre is also within walking distance from the site, as is Kingston and Norbiton Railway Stations. Access to the stations provides residents with connections to the rest of the UK.

3.11.3 In summary, the site benefits from being located within an accessible location, both in terms of proximity to alternative modes of travel and essential social infrastructure, including employment, retail and education land uses. Residents of the site will not therefore be reliant on the car to travel to/from the site.

4. Development Proposals

4.1 Phasing of the Development

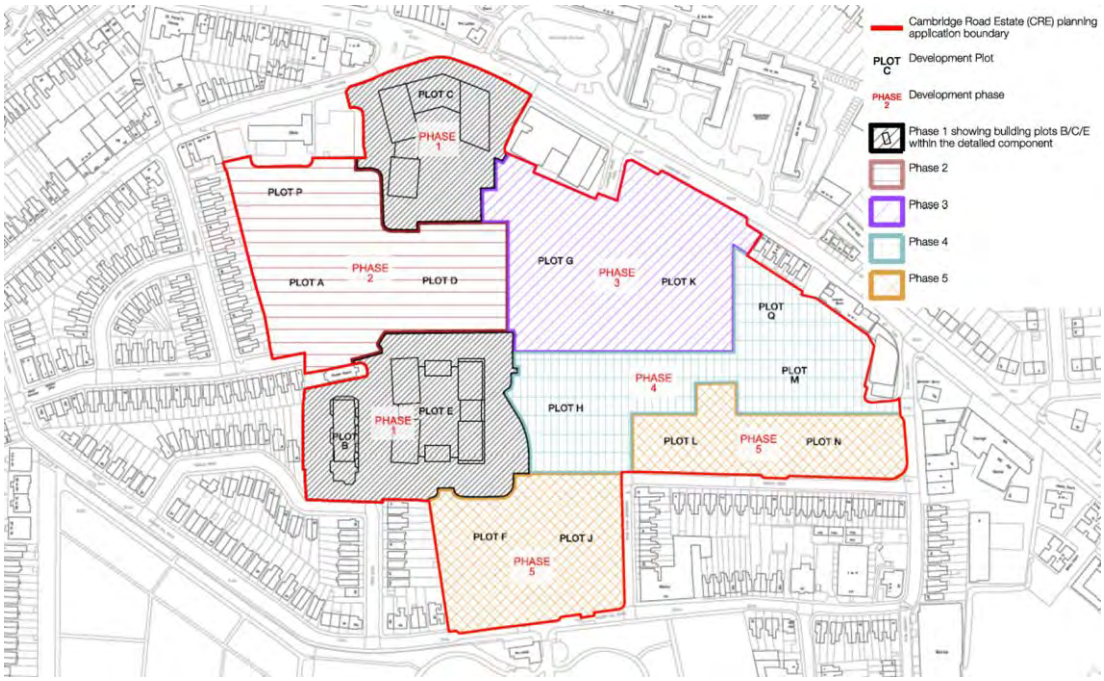
4.1.1 **Table 4.1** shows the development timescales for each of the 5 phases. Phases 2-5 are subject to detailed consents at Reserved Matters stage.

Table 4.1 Masterplan Phasing Timetable

Phase	Anticipated Construction Start	Anticipated Construction Complete
1	Jun-21	May-25
2	Sep-23	Aug-27
3	May-25	Sep-29
4	Oct-27	Dec-30
5	Apr-29	Apr-33

4.1.2 The extent and location of each phase is shown in **Image 4.1**.

Image 4.1 Phasing Plan



Source: Extract from Patel Taylor Drawing 503-PTA-MP-XX-DR-A-5407 P03

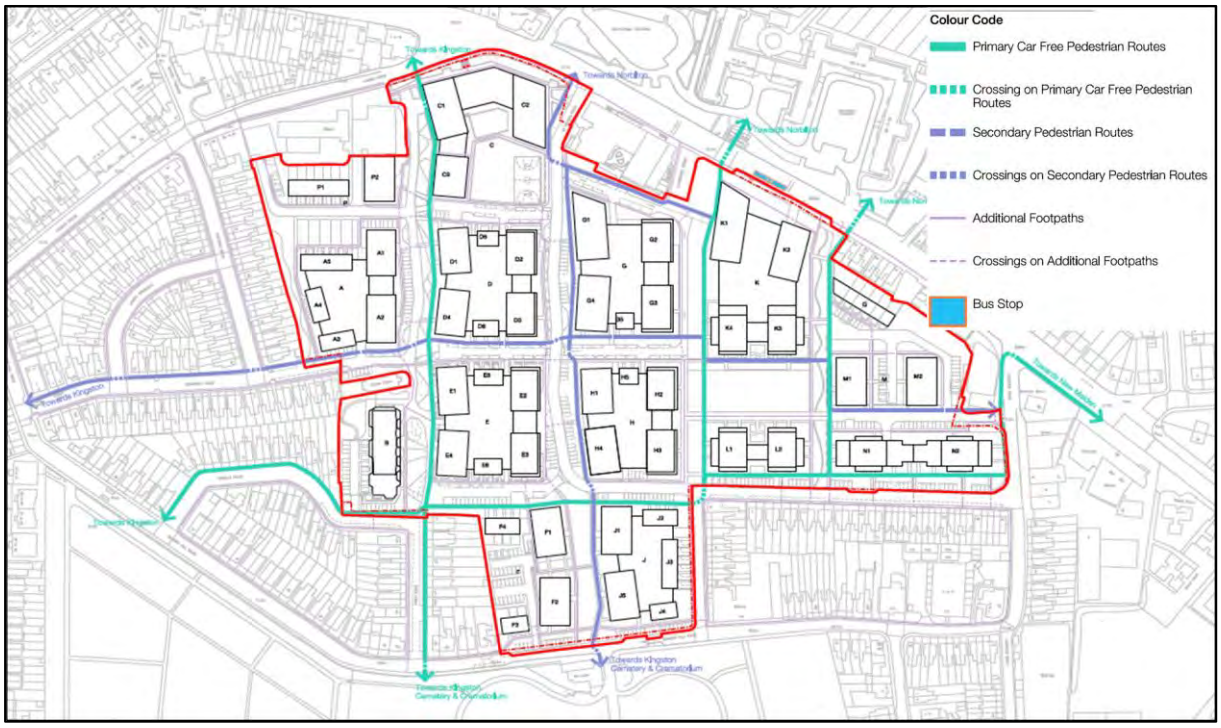
4.2 Proposed Site Access

4.2.1 The primary pedestrian routes throughout the masterplan are summarised below.

Pedestrian Access

4.2.2 The primary pedestrian routes within the site and how they connect to the surrounding network is shown in **Image 4.2**.

Image 4.2 Primary Pedestrian Routes



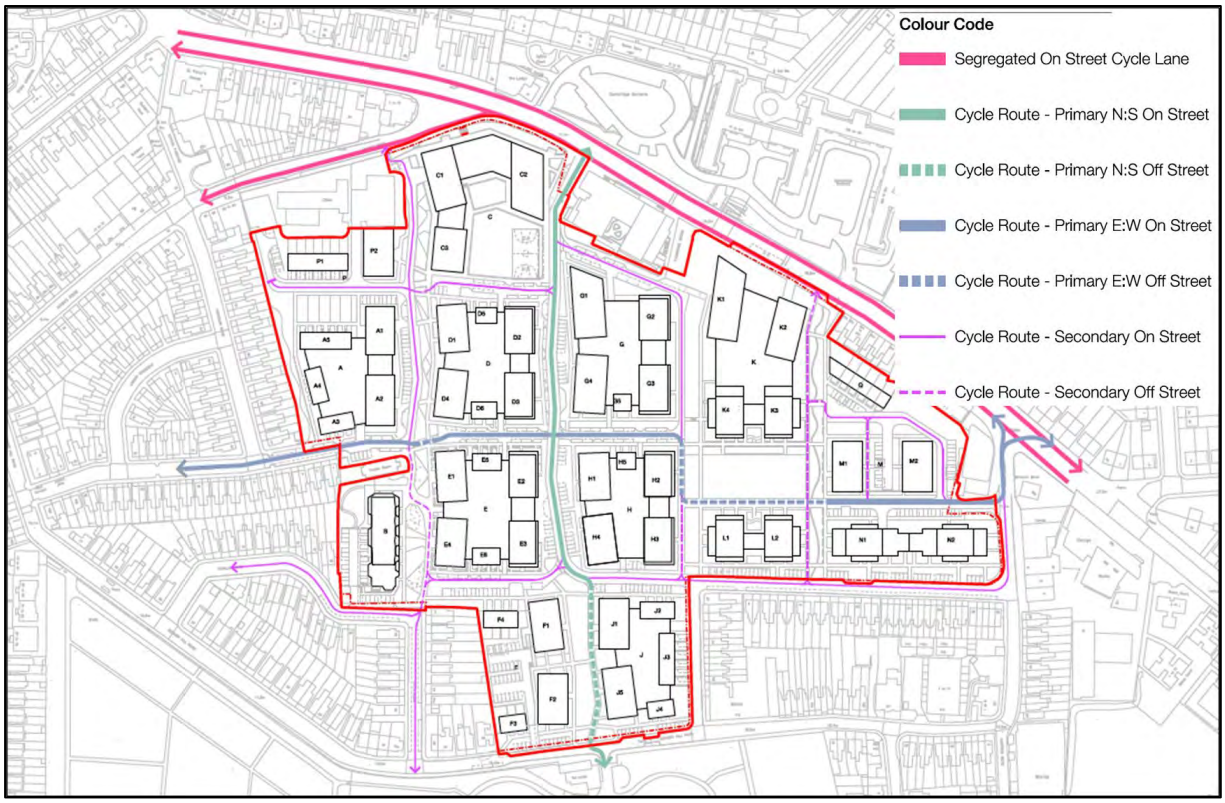
Source: Extract from Patel Taylor Drawing (503-PTA-MP-00-DR-A-1235 P01

4.2.3 As the image above shows the pedestrian routes throughout the site are based on north/south and east/west grid system which provides direct linkages throughout the estate and excellent connections to the surrounding network.

Cycle Access

4.2.4 **Image 4.2** shows the primary cycle routes within the site and how they connect to the surrounding network.

Image 4.3 Primary Cycle Routes



Source: Extract from Patel Taylor Drawing (503-PTA-MP-00-DR-A-1231 P01

4.2.5 As the image above shows the cycle routes throughout the site, are based on north/south and east/west grid system which provides direct linkages throughout the estate and excellent connections to the surrounding network. These routes allow for cycling whether for leisure, commuting, or servicing & deliveries.

Vehicular Access

4.2.6 The majority of the existing vehicle access will be retained across the site, with some being amended, others closed and the creation of new vehicular accesses as well. **Table 4.2** summarises what is changing under the proposed masterplan.

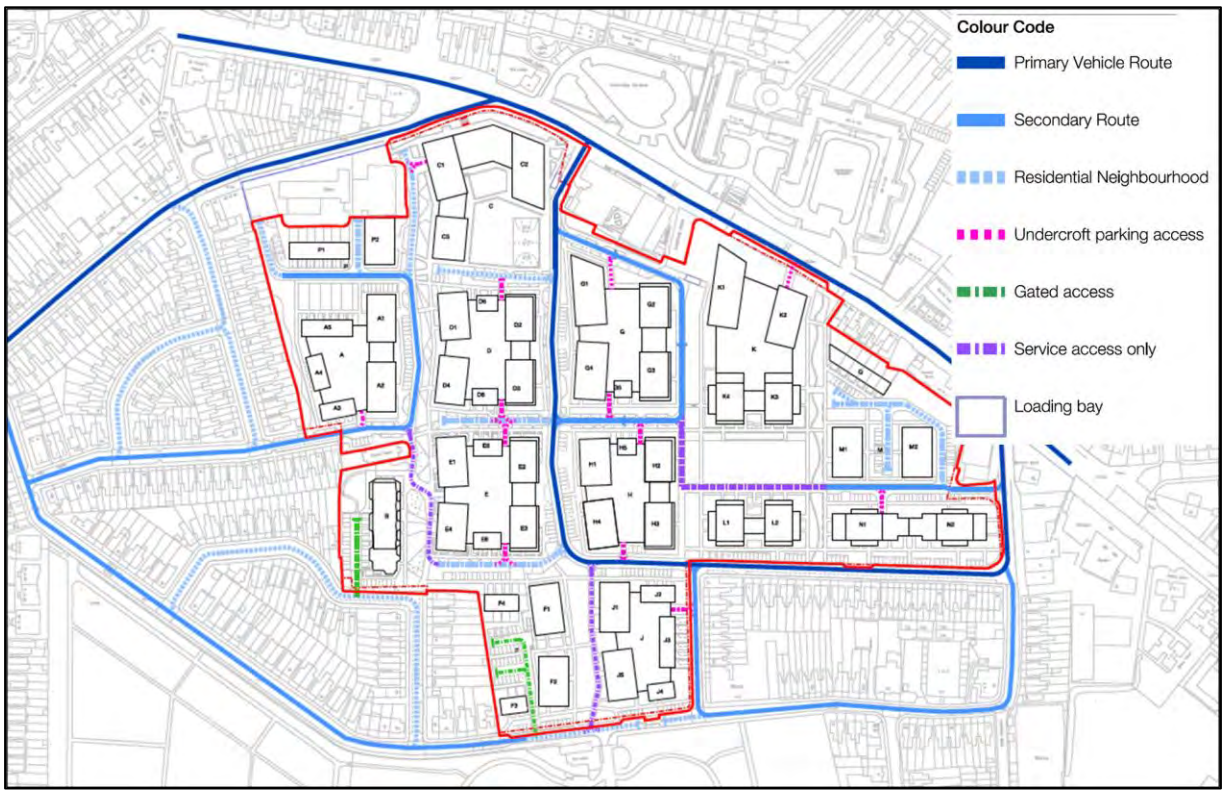
Table 4.2 Changes to Vehicular Accesses

Vehicular Access Locations	Retained / Amended	New	Closed
St Peters Road	✓		
Cambridge Grove Road (jct with Cambridge Road)	✓		
Hampden Road	✓		
Burritt Road	✓		
Stapleford Close			✓
Cambridge Grove Road (to the north of its junction with Vincent Road)			✓

Willingham Way			
Rowlls Road / Piper Road		✓	✓
Somerset Road	✓	✓	
Bonner Hill Road		✓	
Creation of new T-Junction with Vincent Rd / Cambridge Grove Road		✓	

4.2.7 **Image 4.4** shows the vehicular access routes throughout the masterplan and connections within the wider road network.

Image 4.4 Primary and Secondary Vehicular Access Routes



Source: Extract from Patel Taylor Drawing (503-PTA-MP-00-DR-A-1225 P03

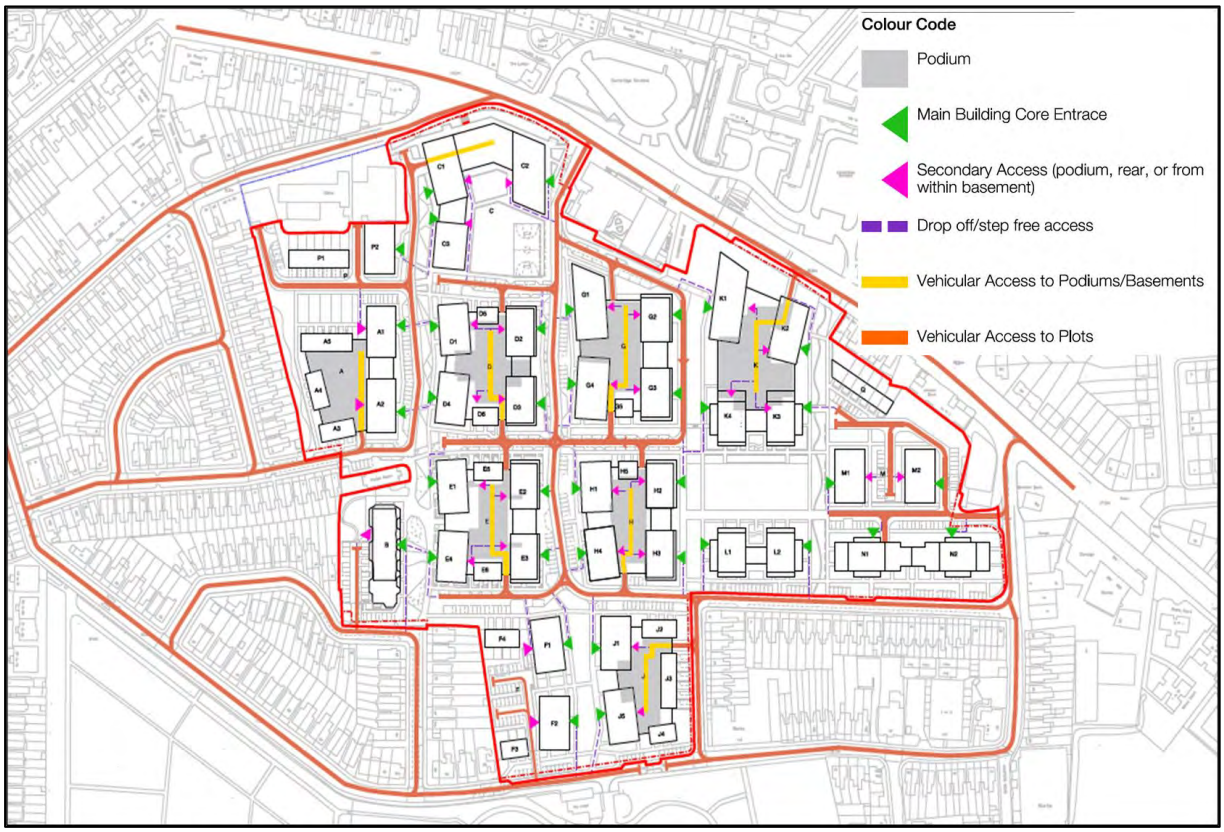
4.2.8 The image above shows the vehicular access points and routes throughout the site. Crucially the plan demonstrates that the masterplan does not allow for rat-running through the estate between Cambridge Road and Hawks Road which keep traffic levels low through the existing neighbourhood roads.

4.2.9 The final junction design of St Peters Road and Hampden Road with Cambridge Road will be determined at the RMA stage but the intention is that they will be as per RBK's Go Cycle design, St Peters Road would been widened to 6.5m in width to accommodate a potential bus route at the request of TfL. The masterplan has been designed to allow for emergency vehicles to access all areas and routes within the site.

4.2.10 It should be noted that, with the exception of Phase 1 the exact design/nature/layout of the vehicular routes throughout the estate is not known, and these will be determined through the respective RMAs.

4.2.11 Car parking will be provided throughout the site, on-street, in parking courts and within basement and podium parking within the curtilage of individual building plots. **Image 4.5** shows the location of each vehicular access for every plot across the masterplan.

Image 4.5 Vehicular Access to each Plot



Source: Extract from Patel Taylor Drawing (503-PTA-MP-00-DR-A-1230 P03

4.2.12 Vehicular access to each plot is demonstrated in the image above, with secondary access achievable from the podium / basement car parks. Pedestrian access points for each Plot are also shown.

4.2.13 It should be noted that, with the exception of Phase 1 any new/amended vehicular access or closure of existing accesses will be a matter for the RMA.

4.3 Pedestrian Level of Comfort Assessment

4.3.1 A Pedestrian Comfort Assessment has been undertaken in accordance with TfL's Pedestrian Comfort Guidance for London (2019) document. Using the Pedestrian Comfort Level Guidance Spreadsheet, eight proposed footways within the masterplan were selected for assessment. At this stage no street furniture has been assumed.

4.3.2 Eight of the key footway locations within the masterplan were assessed using the AM peak hour pedestrian flows (including: pedestrians, train / underground users, and bus users). The site-wide total number of expected pedestrians generated by the site in the AM peak hour has been used to assess each of the eight locations, rather than the number of pedestrians for each block. This ensures that the assessment is overly robust.

Image 4.6 Pedestrian Level of Comfort Analysis

4.3.3 As the image above shows, in each case the assessment returned a score of A, A- or A+. This is a result of the ample footway widths provided within the masterplan, that will be embedded into the outline consent. Further details and the spreadsheet outputs can be found in a Technical Note included in **Appendix F** .

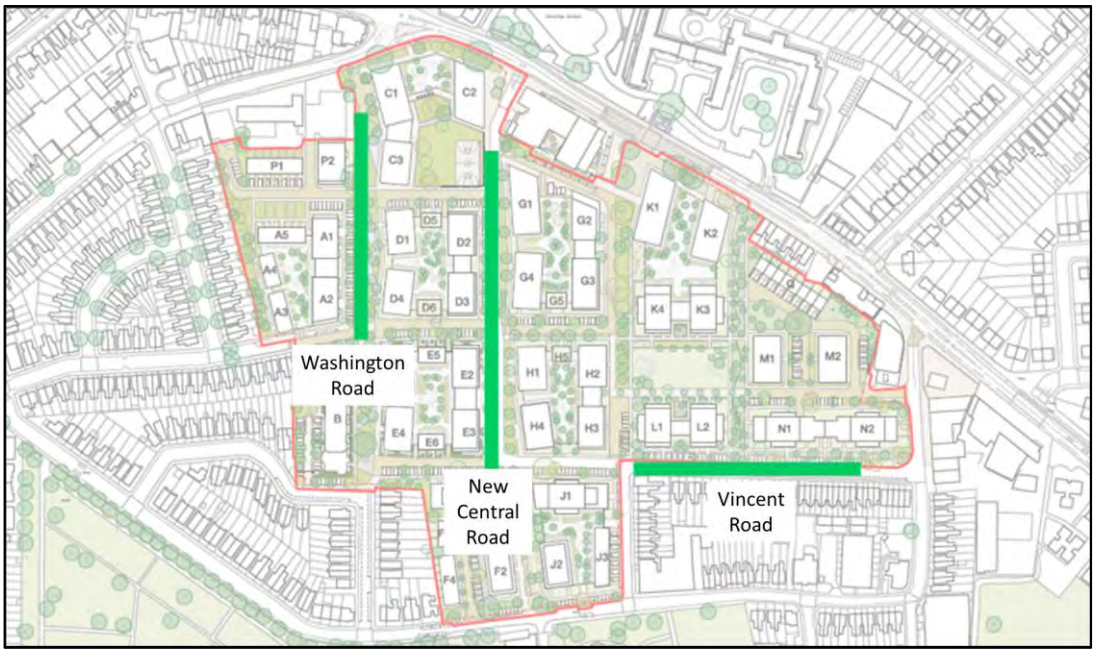
4.4 Healthy Street Assessment

4.4.1 Policy T2 Healthy Streets of The Draft London Plan states that development proposals should demonstrate how they will deliver improvements that support the ten Healthy Streets Indicators, reduce the dominance of vehicles on London's Streets and provide permeable walking and cycling connections.

4.4.2 Whilst the healthy streets assessment holds no formal status in guidance and decision making it is a useful tool in decision making which helps inform people on how a project fits with in with TfL's Healthy Streets Policy.

4.4.3 **Image 4.7** shows three locations within the masterplan where a Healthy Streets Assessment has been undertaken to quantify the change in design of the streets between the existing and proposed

Image 4.7 Location of Healthy Street Assessment



4.4.4 Two of the streets assessed above are existing streets, Washington Road and Vincent Road. In addition, the new Central Road has been assessed. **Table 4.3** summarises the results of the Healthy Street assessment for those three locations.

Table 4.3 Results of Healthy Street Assessment

Criteria	Vincent Road		Washington Road		New Central Road
	Existing Layout	Proposed Layout	Existing Layout	Proposed Layout	Proposed Layout
Pedestrians from all walks of life	64	85	65	87	87
Easy to cross	83	90	90	97	97
Shade and shelter	50	83	50	100	100
Places to stop and rest	47	73	40	80	80
Not too noisy	67	80	80	100	100
People choose to walk, cycle and use public	64	85	65	87	87
People feel safe	62	83	63	86	86
Things to see and do	42	83	42	92	92
People feel relaxed	61	83	63	86	86
Clean Air	58	75	75	100	100
Overall Healthy Streets Check score	**63**	**83**	**65**	**88**	**88**
Number of 'zero' scores	0	0	0	0	0

4.4.5 The table above shows that the proposed layout results in a high score for all three of the assessed streets. Whilst the estate currently scores quite well in certain aspects, the new design increases the scores across the 'People Feel Safe', 'Things to See and Do', 'Pedestrians

from All Walks of Life', and 'Places to Stop and Rest' indicators. This reflects the design principles developed by the design team which looks to significantly improve the overall balance of the streetscape. As demonstrated in the table above, in terms of Healthy Streets the proposals would result in significant improvements. Further details can be found in a Technical Note included in **Appendix F**

4.5 Proposed Cycle Parking

4.5.1 Cycle parking for the development will be provided in accordance with the Draft London Plan standards, with the proposed parking provision for Phase 1 and the Masterplan shown in **Table 4.4**.

Table 4.4 Proposed Cycle Parking Provision

Land Use	Phase 1		Masterplan	
	Long Stay	Short Stay	Long Stay	Short Stay
Residential (C3)	821	14	3902	56
Office (B1)	4	1	4	1
Flexible Retail / Commercial	4	20	8	42
Community Use		13		13
Additional cycle parking spaces		10		
Total	**829**	**58**	**3914**	**112**

4.5.2 The table above shows that additional visitor cycle spaces are proposed above the Draft London Plan standard.

4.5.3 Details of the type, and location of the cycle parking will be provided under each RMA. The types of cycle storage will include semi-vertical racks, hydraulic stacking racks and standard hoops. In line with TfL guidance 5% of spaces will provide for larger cycles, such as cargo bikes, family bikes for child transport and accessible bikes e.g. hand cycles for wheelchair users.

4.5.4 External cycle racks will be 'Sheffield' type stands to maximise the ease for users as identified in the London Cycle Design Standards (LCDS).

4.6 Proposed Car Parking

4.6.1 The development proposes the removal of all the existing car parking spaces on site and reprovision on a plot by plot basis. The applicant proposes a total of 868 car parking spaces within the site, which is a ratio of 0.4 spaces per dwelling. This complies with both TfL and RBK's comments during the pre-application discussions, and also complies with Parking Standards provided in Table 10.3 of the Draft London Plan. Car parking will be provided both on-street, on-plot surface parking and in podium/basement car parks.

4.6.2 **Table 4.5** shows the illustrative number of parking spaces per plot and the corresponding ratio.

Table 4.5 Parking Provision for Each Plot

Plot	Dwellings	No. Parking Spaces	Ratio
A	118	49	0.4
B	44	18	0.4
C	202	40	0.2
D	222	58	0.3
E	206	68	0.3
F	94	46	0.5
G	285	98	0.3
H	228	95	0.4
J	92	44	0.5
K	279	180	0.6
L	87	27	0.3
M	127	40	0.3
N	125	79	0.6
P	55	20	0.4
Q	6	6	1.0
Total	**2170**	**868**	**0.4**

4.6.3 As shown above, the parking provision across individual plots will vary, this is a result of site specific design constraints within that plot. However, overall, the provision on a site wide basis will be 0.4 spaces per unit. It should be noted that with the exception of Phase 1 the number of spaces provided, and the design and layout of car parking will be confirmed at the subsequent RMA stage.

Disabled Car Parking

4.6.4 To accommodate the needs of Blue Badge holders the applicant proposes providing 3% of all spaces as accessible parking bays. It is intended that each accessible space is located as close as possible to building entrances i.e. the most convenient location for Blue Badge holders either living, working or visiting the proposed buildings.

4.6.5 As the application is in outline the location and design the parking spaces will be determined at the appropriate RMA stage.

4.6.6 In line with the Draft London Plan, it is intended that each RMA will demonstrate that an additional 7% of spaces has the potential to be provided throughout the masterplan should they be required. This will likely be achieved by converting landscaped areas into accessible parking spaces.

Electric Vehicle Charging Points

4.6.7 In accordance with the Draft London Plan, 20% of all spaces will be active Electric Vehicle Charing Points (EVCP), and 80% of all spaces will have passive EVCP, thus future proofing the expected switch to electric cars.

Management of Car Parking Spaces

4.6.8 Whilst the extent of adoption will be determined at a later stage it is intended that all roads will be constructed to adoptable standards. It is proposed that RBK implement a new CPZ within the site boundary. This will result in the following benefits for management of car parking provision:

- The removal of traffic which currently uses the estate for daytime parking. Further detail is provided on this in Chapter **5.9**.
- Overspill parking will not occur into any other existing CPZ, because returning and new residents will not be allowed to purchase a permit for any other zone except the new zone created for the site.

4.6.9 RBK will manage the allocation of permits as per their policies and procedures.

4.6.10 For spaces located within basement/undercroft or private parking areas, these will be managed by the landowner. A right to park will operate whereby an applicant can purchase the right to use a parking space.

4.6.11 Further details on the management of parking spaces is provided in the Car Park Management Plan which accompanies this TA.

Car Club Spaces

4.6.12 The development will also be supported by additional car club spaces to allow residents access to a car without the need of owning one. They play an active part in reducing car ownership and encouraging active travel.

4.6.13 The applicant has been in contact with Zipcar who have been operating within RBK since 2006, and operate the existing car club spaces nearby as outlined in section **3.7**. They have confirmed that they are willing to provide 2 zip cars in Phase 1 (2021-2025). Further vehicles will be provided throughout the regeneration of the estate and this will be monitored and discussed with Zipcar as each phase is developed.

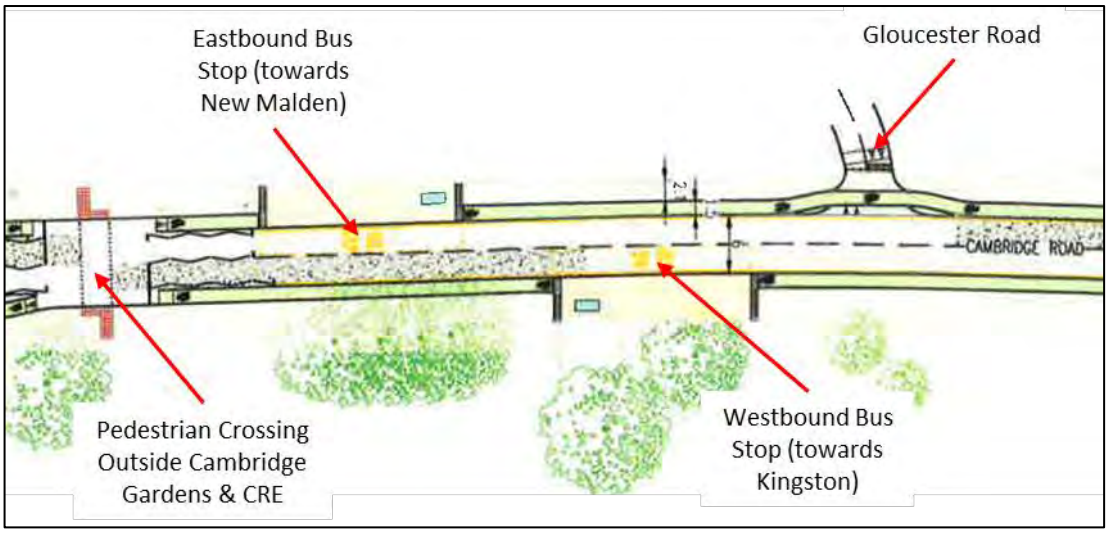
4.6.14 In addition, the applicant is willing to fund a 3-year membership for each new home. Zipcar will also give each home £50+VAT of driving credit.

4.7 Impact of Masterplan on Go Cycle Scheme

Cambridge Road Bus Stops

4.7.1 The proposed bus stop location under the Go Cycle Eastern Route proposals are located on Cambridge Road, immediately to the east of the signalised crossing outside Cambridge Gardens. The bus stops are orientated as such that the buses face each other when both stops are utilised. **Image 4.8** shows the RBK proposal.

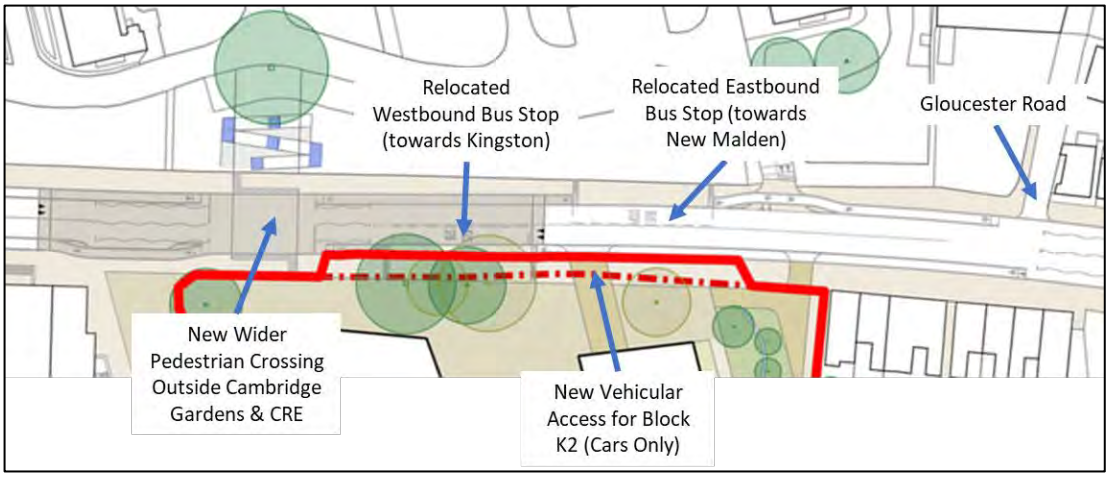
Image 4.8 RBK – Bus Stop Location on Cambridge Road



Source: Extract from RBK Go Cycle Eastern Route Drawing K-NM-70014694-GA-05_Consult Rev D

4.7.2 Under the proposed development the location of the access for Block K2 has been revised to provide a better public realm. As a result, the vehicular access to K2 (proposed as a simple vehicular crossover (not a bellmouth) to provide greater priority to pedestrians and cyclists) has been relocated further west, resulting in the relocation of the bus stops on Cambridge Road. **Image 4.9** shows the relocated vehicular access for Block K and the repositioned Bus Stops on Cambridge Road.

Image 4.9 Proposed Amended Bus Stop Location



Source: Extract form 503-PTA-MP-RF-DR-A-1201_S2-P24 P24

4.7.3 In order to accommodate the new vehicular access, the proposed bus stops have been switched, resulting in the tails of the buses being closest when both stops are occupied which is in accordance with TfL's bus stop guidelines. Otherwise the design of Cambridge Road will remain the same as that proposed under the Go Cycle Scheme.

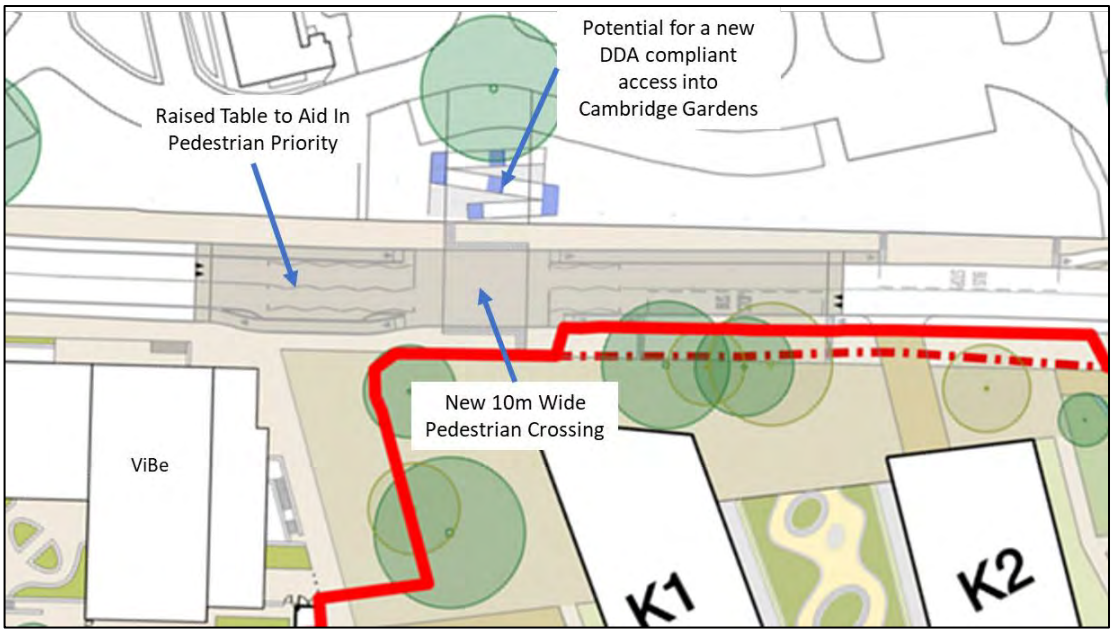
4.7.4 The above changes to the Go Cycle scheme along Cambridge Road were outlined in the second Pre-Application technical note. RBK raised no in-principle concerns but requested

detailed plans. However as this would come under the outline element of the application it is suggested that these items are considered in more detail at the appropriate RMA stage with the offsite highway works to be agreed as part of the S106 legal agreement.

Pedestrian Crossing

4.7.5 The proposed development seeks to create better connections to the north including Norbiton station. The proposals include a 10m wide crossing, with a raised table outside Plots K1 and K2 and Cambridge Gardens (just to the west of the bus stops) as indicated in **Image 4.10**.

Image 4.10 Proposed Cambridge Road Crossing



Source: Extract form 503-PTA-MP-RF-DR-A-1201_S2-P24 P24

4.7.6 The raised table is proposed to be constructed with different materials (not standard 'blacktop') in order to enhance the public realm and assist in reducing vehicle speeds. As above it is suggested that the crossing is considered in more detail at the appropriate RMA stage with the offsite highway works to be agreed as part of the S106 legal agreement.

4.8 Proposed Public Realm & Local Highway Amendments

4.8.1 To facilitate access to the proposed development, a number of significant improvements to the public realm in and around the immediate vicinity of the site are proposed. These will include:

- The creation of new public spaces that will allow people to spend time, sit and relax.
- New pedestrian routes linking throughout the masterplan increasing pedestrian and cycle permeability.
- A significant increase in the number of active frontages, on all new internal streets increasing the natural surveillance of public space within the vicinity of the site.

- New streets and footways with carefully selected and designed materials to align with the new public space.
- The provision of short stay cycle parking evenly distributed throughout the site to encourage cycling.

4.8.2 **Table 4.6** provides a summary of the proposed on-site/nearby public realm against the TfL Healthy Streets indicators to provide an overview of how the site will perform within this context.

Table 4.6 Proposed Development Healthy Street Indicators

Indicator	Description
Choose to walk, cycle and use public transport	The new footway layout thought the site, as well as the newly introduced public realm will provide an attractive environment for walking and cycling. The new short and long stay cycle parking will also ensure people cycling can easily stop and secure cycles at convenient locations for accessing shops and services.
Pedestrians from all walks of life	The newly introduced public realm will be an accessible and welcoming place for all, as it will provide smooth and level pavement. The new wide footways within the site will ensure that it will support a range of activities.
Easy to cross	Dropped kerbs and tactile paving along with good levels of visibility so that people crossing can see oncoming traffic and be seen provide safer routes for pedestrians.
People feel safe	The new public realm areas will ensure that the site will have a lot of active frontage overlooking the pavement, and people will regularly be going in and out of buildings and passing by. This will ensure people feel safe in the vicinity of the site.
Things to see and do	The introduction of office and retail units at the ground floor level will make the site an interesting and engaging place to walk and spend time. There are also lots of opportunities to use plantings and lighting to make the site more interesting and engaging.
Places to stop and rest	The new public realm areas will provide numerous opportunities for people to sit down and rest.
People feel relaxed	The proposed development will make the site feel well maintained, with high quality paving throughout and widened footways ensuring people feel relaxed. High quality plantings will also support in creating a peaceful environment.
Not too noisy	The noise levels are expected to continue to be low due to the low volume of vehicles.
Clean Air	A Delivery & Servicing Plan (DSP) has been produced for the site, which will require the estate management team to encourage vehicles to switch off their engines immediately when stationary, as well as encouraging deliveries to be consolidated and vehicles to be backloaded, reducing the overall number of vehicles attending the site. Additional planting will also benefit air quality.
Shade and Shelter	The proposed tree planting will provide a canopy providing shelter in the case of rain or sun.

4.8.3 The proposed development will significantly improve on all of the Healthy Streets indicators, in particular for ‘People feel safe’, ‘things to see and do’, ‘pedestrians from all walks of life’, and ‘places to stop and rest’.

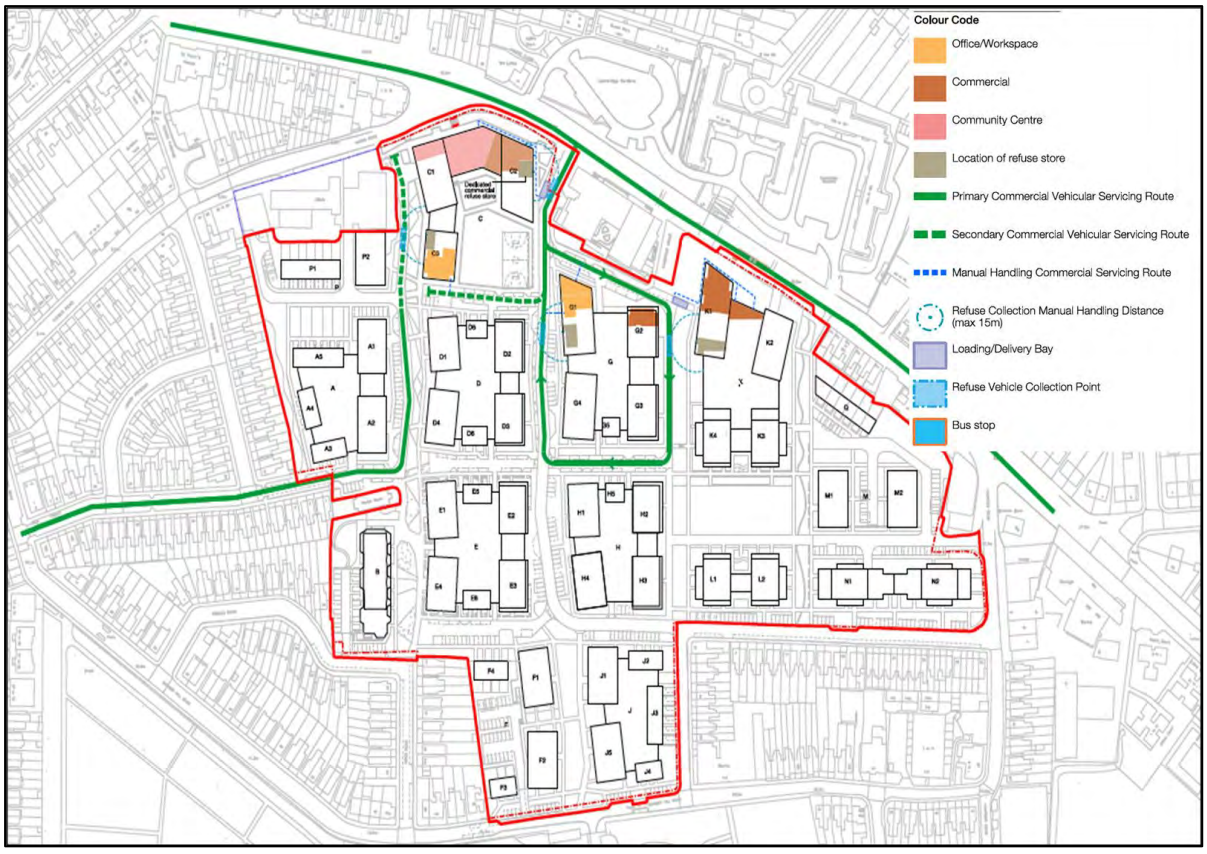
4.9 Proposed Servicing Strategy

4.9.1 The development is supported by a comprehensive Delivery and Servicing Plan (DSP) which accompanies this TA. The DSP contains the detail of how the site will be serviced for all land uses, with a summary provided below.

Commercial Servicing

4.9.2 **Image 4.11** shows the main routes for commercial servicing.

Image 4.11 Commercial Servicing and Delivery Routes



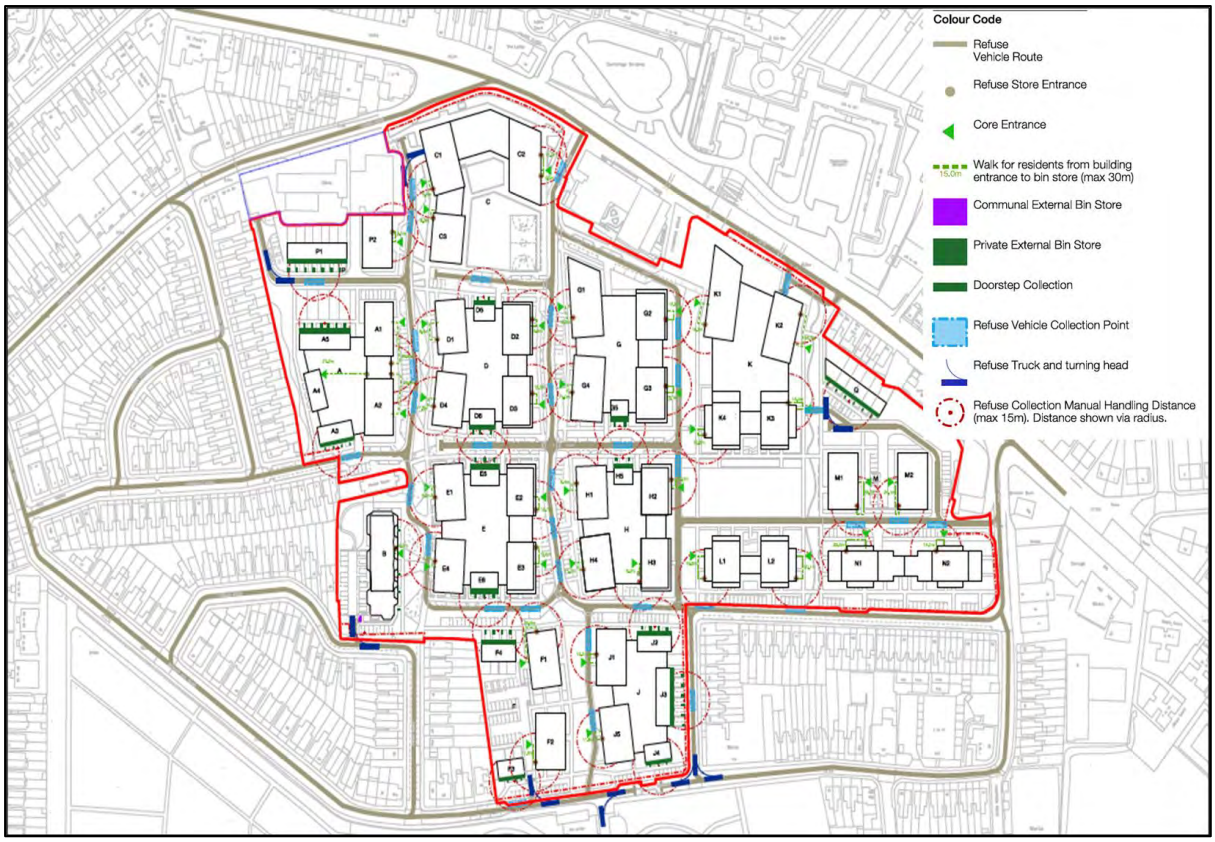
Source: Extract from Patel Taylor Drawing 503-PTA-MP-00-DR-A-1227 P04

4.9.3 Three loading bays are proposed within the site. All bays can accommodate a 12m rigid vehicle. Vehicle tracking will be provided for each RMA demonstrating that each phase can accommodate refuse vehicles.

Residential Refuse Collection

4.9.4 Residential refuse collection will occur on-street with **Image 4.12** showing the routes, stopping locations and the proximity to the bin store.

Image 4.12 Residential Refuse Collection Routes



Source: Extract from Patel Taylor Drawing 503-PTA-MP-00-DR-A-1228 P03

4.9.5 The above plan shows the location of communal and private bin stores, the refuse vehicle collection point and the proposed turning head.

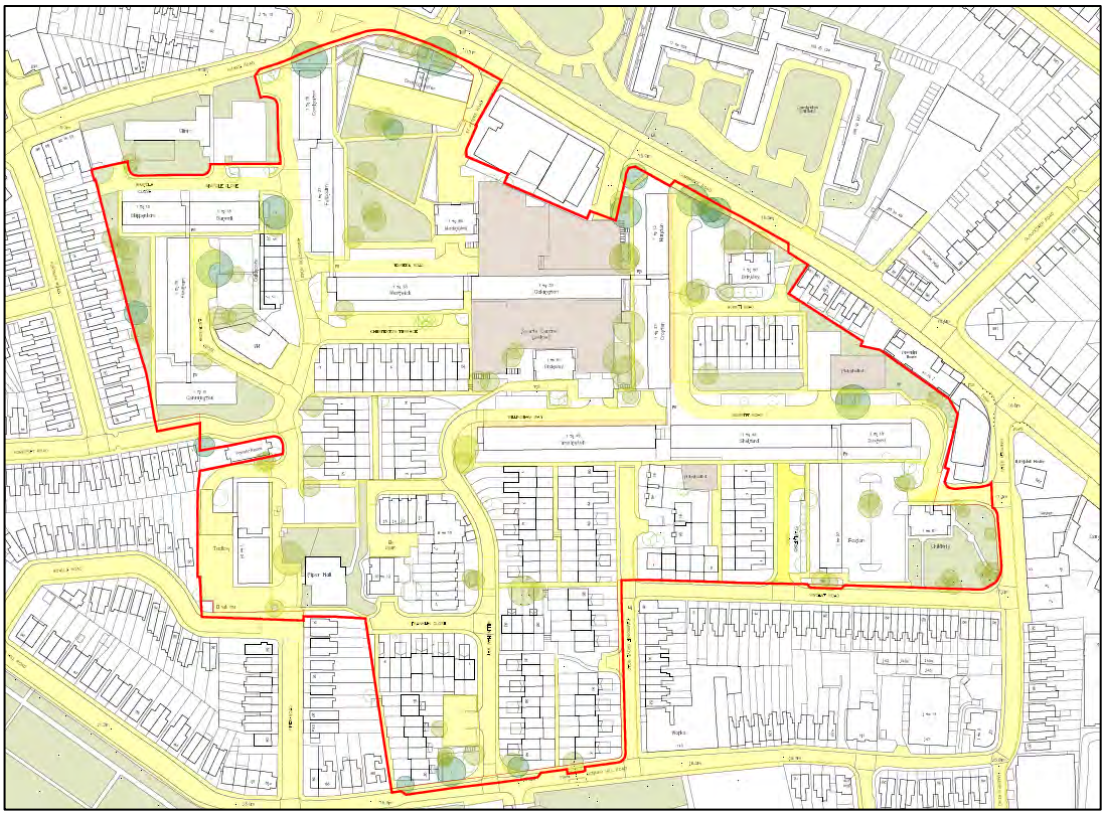
4.9.6 Vehicle tracking will be provided for each RMA demonstrating that each phase can accommodate refuse vehicles.

4.10 Stopping Up of Public Highway

4.10.1 The regeneration of the CRE will require the stopping up of existing public highway in order to deliver the proposed development.

4.10.2 **Image 4.13** is an extract of **Drawing 19157-MA-XX-XX-DR-C-0050** (found in full at the end of this report) which shows the extent of the existing public highway within the site.

Image 4.13 Extent of Existing Public Highway



Source: Extent of Public Highway taken from RBK's website

4.10.3 In order to understand what areas, need to be stopped up the existing public highway has been overlaid onto the illustrative masterplan. The areas proposed to be stopped up are shown in **Image 4.14** which is an extract of **Drawing 19157-MA-XX-XX-DR-C-0051** (found in full at the end of this report).

Image 4.14 Extent of Public Highway to be Stopped Up

4.10.4 The image above shows that all the public highway within the estate is required to be stopped up. It is intended that the stopping up will be undertaken using S247 of the Town and Country Planning Act 1990.

Re-provision of Public Highway

4.10.5 It is anticipated that new roads and footways within the site will be offered for adoption to RBK as the site is developed. It is expected that any adoptions will take place under S38 of the Highways Act 1980 and will be agreed with RBK at the appropriate time during / following approval of each RMA. The applicant would welcome further discussion regarding the coordination of Stopping Up and Adoption works at an appropriate time.

4.10.6 The stopping up and re-provision of public highway has been discussed with RBK within the initial meetings who were supportive of the principles in order to facilitate the estates regeneration.

4.11 Phase 1 Detailed Elements

Development Proposals

4.11.1 Phase 1 contains many of the existing non-residential uses within the site which include: The Bull and Bush Hotel, Piper Community Hall, Tadlow House (Housing Management) CRERA Office, CRERST Office, and the Surbiton Rifle Club.

4.11.2 **Table 4.7** shows the existing and proposed development schedules.

Table 4.7 Phase 1 Development Schedule (Existing and Proposed)

Land Use	Existing	Phase 1	Difference (+/-)
Residential (C3)	129 Units	452 Units	+ 323 Units
Flexible Office (E)	N/A	290 sqm	290 sqm
Flexible Retail / Commercial (E)	N/A	395 sqm	395 sqm
Community (F1/F2)	290 sqm	1250 sqm	960 sqm
Total Non-Residential Uses	1948 sqm	1935 sqm	- 13 sqm

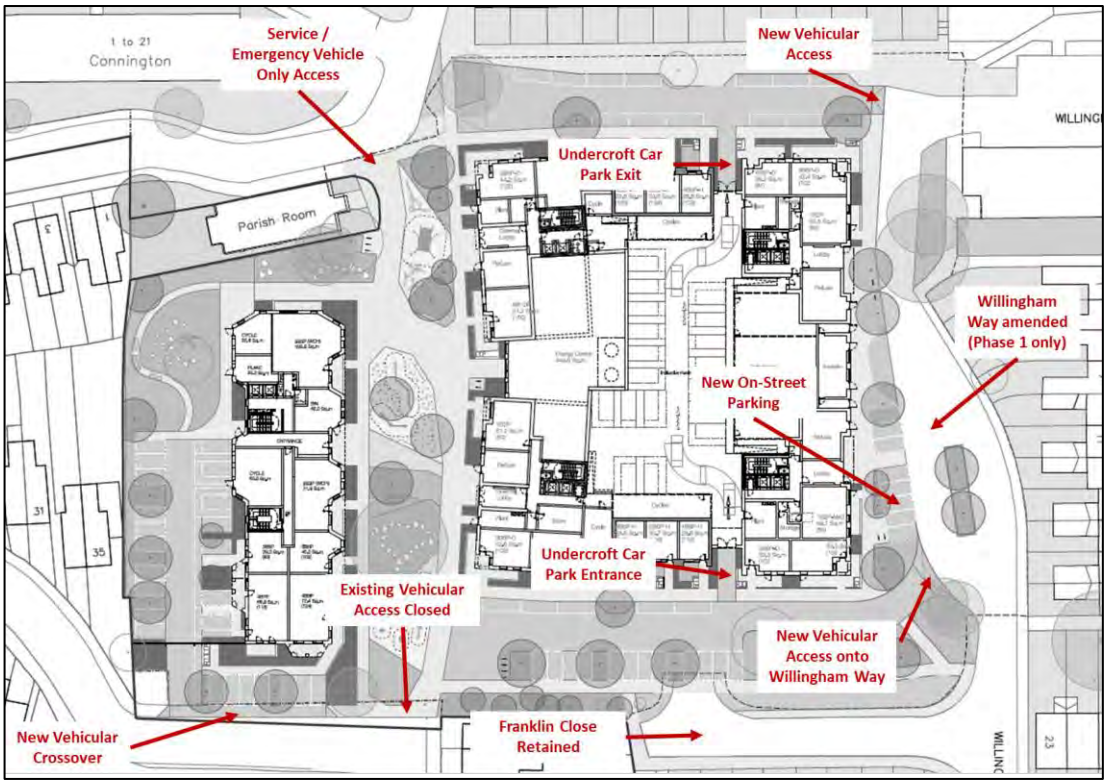
Blocks B and E Access and Parking

4.11.3 Blocks B and E will benefit from new pedestrian infrastructure in and around the blocks providing access to existing footways on Washington Road, Rowlls Road and Willingham Way. A new pedestrian route running north / south linking Washington Road and Rowlls Road is also proposed. This will also provide emergency vehicle access as well as access for service / refuse vehicles only.

4.11.4 Vehicular access to Block B will be served from Rowlls Road, via a new access and parking directly from the road. Block E will be served from Willingham Way. A new vehicular access is proposed from Willingham Way which will serve on-street parking to the south of Block E and the entrance to the undercroft car park. The undercroft parking exits to the north of Block E which becomes a new street with on-street parking served from a new access onto Willingham Way.

4.11.5 **Image 4.15** shows the site layout for Blocks B and E.

Image 4.15 Block B and E Site Layout



Source: Extract from Patel Taylor Drawing 503-PTA-PH1-00-DR-LA-4301 P01

4.11.6 New on-street parking is provided on the western side of Willingham Way, with the alignment of Willingham Way temporarily altered (under Phase 1 before the masterplan is completed in Phases 4 and 5) in order to retain access to the residential properties to the east of Block E and to retain access to the parking area between Graveley and Impington Court.

4.11.7 As the above image shows, the existing vehicular access at the corner of Rowlls Road and Piper Road is closed off to allow the creation of a green walking /cycling route. All of the existing dwellings will retain vehicular access to their properties.

4.11.8 It is expected that the proposed vehicular accesses within the detailed element will be agreed through conditions with the detail design and construction agreed as part of a highway licence application or S278 agreement.

Block C Access and Parking

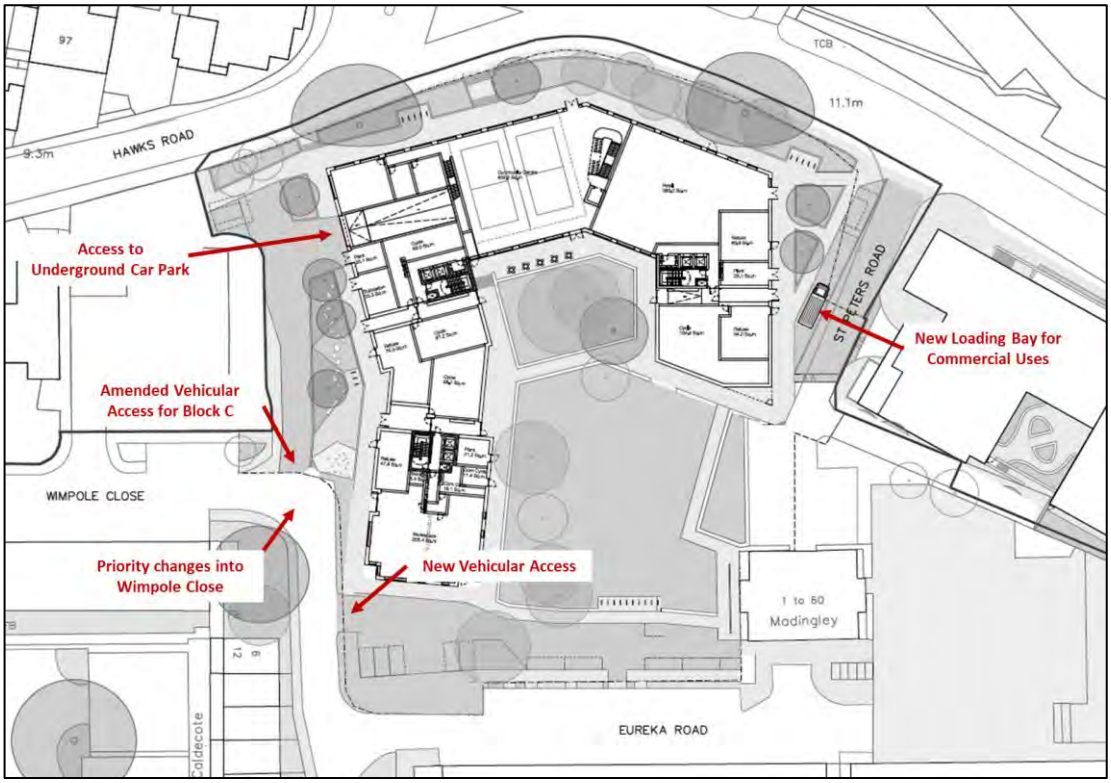
4.11.9 Block C will benefit from new pedestrian infrastructure from the residential, retail/workplace and community uses on all sides of the block and provides improved access to existing infrastructure on Washington Road, Hawks Road, Cambridge Road and St Peters Road. New footways give access to the new green space and link to Madingley, and Eureka Road.

4.11.10 The northern end of Washington Road is amended to provide vehicular access to an underground car park which will serve Block C. The turning head will be amended in line with

the masterplan vision. Loading for the commercial uses will occur from St Peters Road with a loading bay provided on the western side of the road.

4.11.11 **Image 4.16** shows the site layout for Block C.

Image 4.16 Block C Site Layout



Source: Patel Taylor 503-PTA-PH1-00-DR-LA-4300 P01

4.11.12 As the above image shows access to Wimpole Close and the Heath Centre is retained under the Phase 1 proposals, with the priority changing as Washington Road bends westwards into Wimple Close. With a priority junction for the section of Washington Road which will serve the Block C.

4.11.13 A new vehicular access is created to serve a parking area to the south of Block C.

Phase 1 Cycle Parking

4.11.14 Cycle parking for Phase 1 will be provided in accordance with the Draft London Plan standards, with **Table 4.8** outlining the required stands for each use.

Table 4.8 Proposed Cycle Parking Provision

Land Use	Phase 1	
	Long Stay	Short Stay
Residential (C3)	821	14
Office (B1)	4	1
Flexible Retail / Commercial	4	20
Community Use		13
Additional cycle parking spaces		10
Total	**829**	**48**

4.11.15 Cycle parking is accessed at grade from the street level are and distributed throughout each plot. **Image 4.17** show the location of the residential and visitor (Sheffield stands) cycle parking for Plot C.

Image 4.17 Location of Cycle Parking Plot C

4.11.16 Long term storage cycle parking will be provided by the tenant within the demise of each commercial unit alongside the provision of lockers, showers and changing rooms.

4.11.17 **Image 4.18** shows the residential cycle parking for Plots B and E and the location of the residential and visitor (Sheffield stands) cycle parking around Plots B and E.

Image 4.18 Location of Cycle Parking Plots B and E

Phase 1 Car Parking

4.11.18 Phase 1 will provide 126 parking spaces across the three blocks, with 18 provided for Block B, 40 spaces for Block C, and 68 spaces at Block E. These will be managed in accordance with Section **4.6** of this report and the accompanying Car Park Management Plan.

4.11.19 In line with the Draft London Plan 3% of all spaces will be accessible spaces. 20% of all spaces will have active electric vehicle charging points and 80% will have passive infrastructure provided.

4.11.20 Two parking spaces will be provided for car club spaces.

Vehicle Tracking

4.11.21 Vehicular tracking has been undertaken for the Phase 1 which are shown in the following drawings provide at the end of this report.

- Drawing 19157-MA-XX-XX-DR-C-0101 – P01: Refuse Vehicle (Blocks B & E)
- Drawing 19157-MA-XX-XX-DR-C-0102 – P01: 7.5t Box Van (Blocks B & E)
- Drawing 19157-MA-XX-XX-DR-C-0103 – P01: Panel Van (Blocks B & E)
- Drawing 19157-MA-XX-XX-DR-C-0104 – P01: Fire Appliance (Blocks B & E)
- Drawing 19157-MA-XX-XX-DR-C-0106 – P01: Refuse Vehicle (Blocks C)
- Drawing 19157-MA-XX-XX-DR-C-0107 – P01: 10 & 12m Rigid (Blocks C)
- Drawing 19157-MA-XX-XX-DR-C-0108 – P02: 7.5t Box & Panel Van (Blocks C)
- Drawing 19157-MA-XX-XX-DR-C-0109 – P01: Carriageway Amendments (Blocks C)

4.11.22 The drawings show that the proposed layout can accommodate the expected type of vehicles associated with Phase 1.

5. Active Travel Zone Assessment

5.1 Preamble

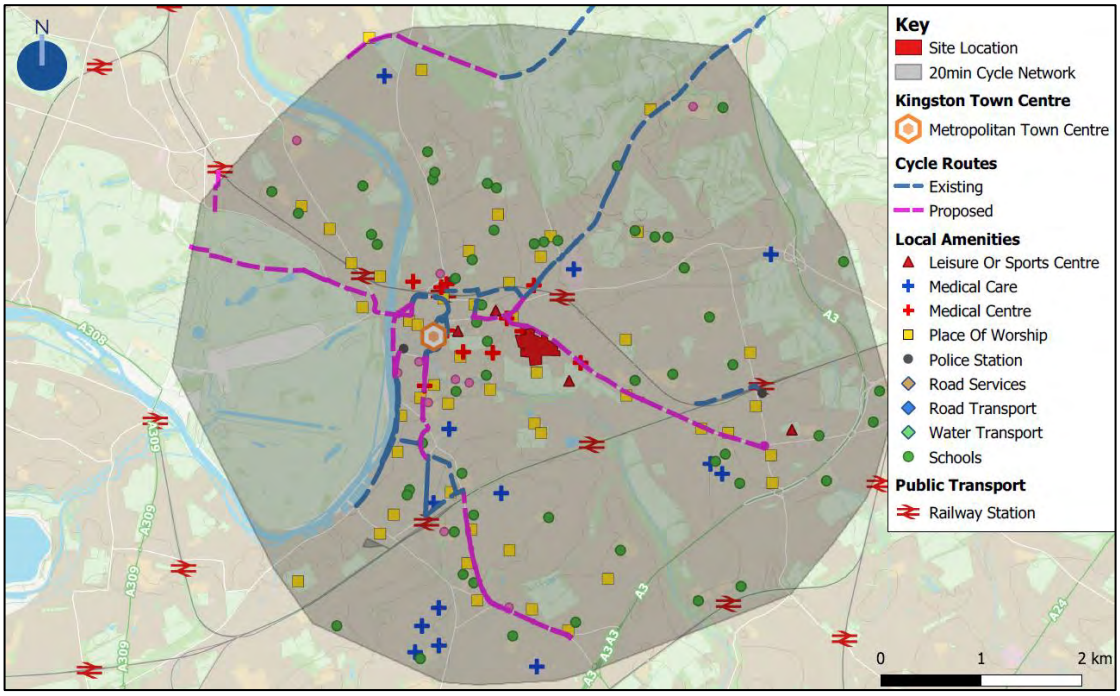
5.1.1 This section of the report outlines the accessibility of the site in terms of walking and cycling, as well as assessing the key routes between the site and the most likely trip generators by active modes. It also examines the site in the context of the local area and its access to services, including local greenspace, and the permeability of local road. This assessment has been undertaken in accordance with the latest TfL Transport Assessment guidance dated June 2019.

5.2 The Active Travel Zone

5.2.1 The Active Travel Zone (ATZ) represents an area that is inclusive of all destination which can be reached within a 20-minute cycle from the site, including public transport access points, cycle infrastructure and key land uses such as schools, health centres and places of worship.

5.2.2 **Figure 5.1** illustrates the ATZ which is based upon a 20-minute cycle from the site.

Figure 5.1 Active Travel Zone



5.3 Local Services and Facilities

5.3.1 The site benefits from being located within close proximity to a range of social infrastructure that act as typical trip attractors for residential use, including education, food retail, leisure and health land uses, ensuring residents would not be wholly reliant on travel by private car to access essential goods and services.

5.3.2 Examples of this social infrastructure, and their associated walk/cycle distance from the centre of the site, are detailed below in **Table 5.1**.

Table 5.1 Walking distance to trip Attractors from Edge of the Site

Attractor Land Use	Site	Assumed Travel Route	Distance	Walk Time (mins)	Cycle time (mins)
Railway Stations	Norbiton Railway Station	Gloucester Road	850m	9	3
	Kingston Railway Station	Cambridge Road	1.6km	21	7
Bus Stops	Cambridge Grove	Cambridge Road	500m	7	3
Health Facility	Hawks Road Clinic	Hawks Road	200m	2	1
	Simply Crown and Bridge Dental Laboratory	Cambridge Road	700m	9	3
	Hawks Pharmacy	Hawks Road	350m	4	1
Supermarket	SPAR	Cambridge Road	800m	10	4
	Costcutter	Cambridge Road	650m	8	3
	Hawks Local	Hawks Road	500m	6	2
Education	The FeatherNest Nursery	Hawks Road	800m	10	3
	King Athelstan Primary School	Hawks Road	750m	9	3
	Tiffin School	Cambridge Road	1.1km	14	5

5.3.3 The reasonable proximity demonstrated in **Table 5.1** ensures that these trip attractors can be accessed by modes other than the private car and realistically on foot by most able-bodied residents. This reflects fundamental requirements of national and local policy for creating sustainable communities.

5.4 Classification of Key Services

5.4.1 **Table 5.2** classifies the key destinations from low to high priority in terms of active travel and the likelihood of users of the proposed development travelling to other key destinations from the development.

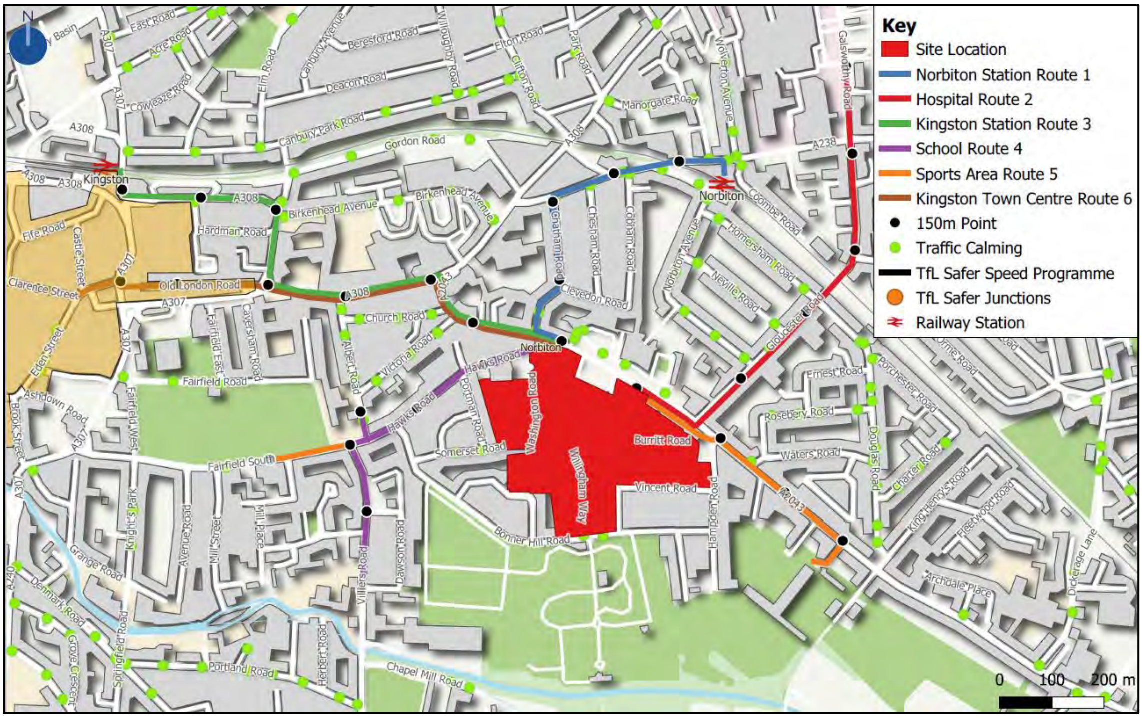
Table 5.2 Classification of Key Destinations in the ATZ

Key Destination	Priority	Justification
Rail Station	High	The travel mode share for people travelling to and from the proposed development is high (27%) and therefore rail stations would be key destinations and are therefore classified as high priority.
Bus Stops	High	High bus mode share for people travelling to and from the proposed development (14%). Therefore, bus stops would be key destinations and are classified with high priority.
Town Centre	High	Given the proximity of the town centre to the site, and the range of services and amenities offered there, the town centre has been considered a high priority destination as it is likely to attract a significant number of trips from the development.
Supermarkets	High	Local supermarkets and other food stores will be a necessity for residents of the proposed development, thereby justifying their high priority classification.
Schools	Medium	The development is comprised of up to 2170 residential dwellings of mixed sizes, including larger family units. It is likely therefore that some of these units will be occupied by residents with school-age children. The medium priority has been awarded to schools as not all flats may have children that need to travel to school.
Parks or Open Spaces	Medium	As the development does not offer a significant amenity space for residents, they may wish to go to a nearby park or open space on a nice day, particularly if they have children. Parks or open spaces have therefore been classified as a medium priority.
Medical Centres	Medium	Over time, it is likely that residents at the development will need to visit a medical centre, be it a GP surgery or pharmacy. Given the anticipated demographics thought to inhabit the development (young - middle-aged couples, possibly with children), it is not envisioned that medical centres will be a daily requirement for most residents, so they have been classified as a medium priority.
Leisure Centres	Low	Some residents at the development may wish to join a leisure centre, but this facility is unlikely to be a necessity for most residents. Therefore, leisure centres have been classified as a low priority.
Places of Worship	Low	Some residents at the development may wish to visit a place of worship, but this facility is unlikely to be a necessity for most residents. Therefore, places of worship have been classified as a low priority.
Higher Education Facilities	Low	Some residents at the development may attend higher education facilities but given the demographic of people thought to be living in the development, it is not thought that higher education facilities would comprise a significant share of residential trips. Therefore, higher education facilities have been classified as a low priority.

5.5 Neighbourhood Active Travel Zone

5.5.1 Based on the range of local facilities offered nearby and the priority of key destinations outlined in **Table 5.1** and **Table 5.2**, with **Figure 5.2** illustrating the walking and cycling routes to the nearest facilities.

Figure 5.2 Neighbourhood Active Travel Zone



5.6 Vision Zero Analysis

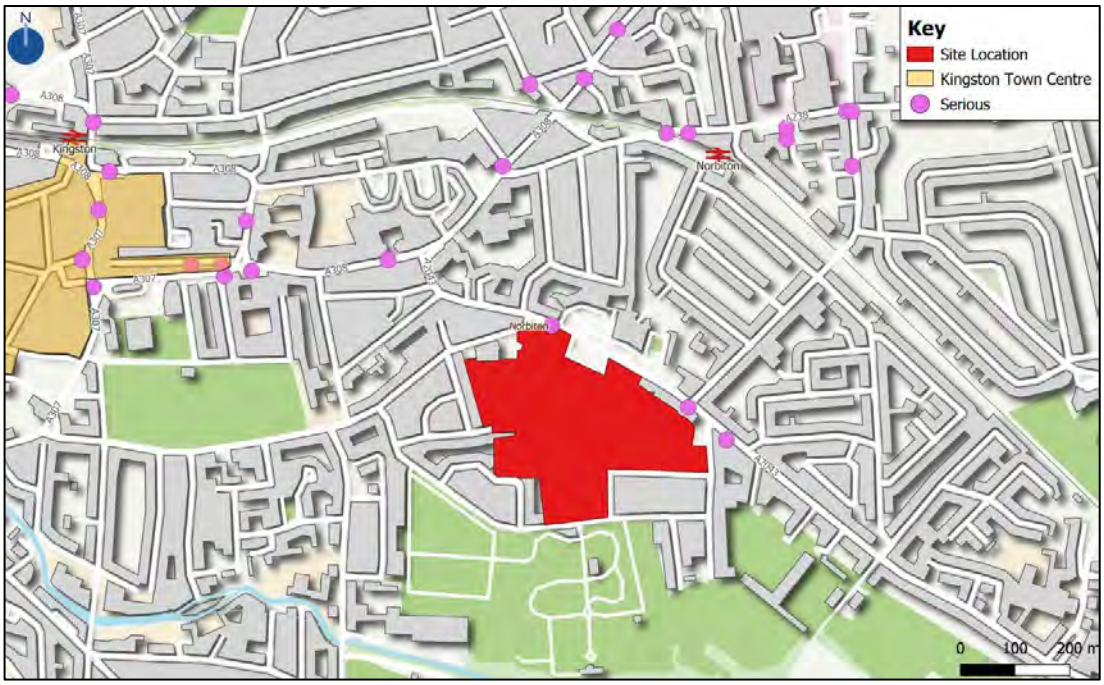
5.6.1 The Mayor's Transport Strategy is committed to Vision Zero to end deaths and serious injury on London roads and transport networks. The strategy sets out the goal that, by 2041, all deaths and serious injuries would be eliminated from London's roads and transport network.

5.6.2 Within the vicinity of the site, casualty data obtained from TfL's London Collision Map for the 5-year period 2014-2018 has been obtained. A review of those casualties has been undertaken to determine the number of incidents which has resulted in people being killed or seriously injured (KSI) on the important walking and cycling routes illustrated in **Figure 5.3.**

5.6.3 This review also aims to identify whether there are any routes where there appears to be a clustering of KSI casualties. A cluster is defined as two or more serious casualties, or one or more fatal casualties.

5.6.4 Of the KSI casualties within proximity to the site, the figure demonstrates that there have been no fatal crashes within the vicinity of the site in the past 5 years. Therefore, there have only been serious crashes. **Figure 5.3** highlights that there are several clusters of KSI's, those being located along Cambridge Road itself at the junction for Gloucester Road/Harpenden Road/Cambridge Road, along the A328 at the junction for Norbiton Railway Station and along the A307.

Figure 5.3 KSI by Severity



5.6.5 **Table 5.3** lists the location of clusters where there have been two or more serious incidents along the routes in this assessment, along with suggestions for making the area safer using the Healthy Streets Approach.

Table 5.3 Vision Zero Analysis

Location	Suggested Improvements
Jemmett Close/A238	**KSI: 2**
	Set pedestrian crossing further back from junction on main road (A238). Provide additional signage highlighting crossroads and the pedestrian crossing. Introduce anti-skid on the approaches to the crossroads on the A238
Coombe Road (A238)/Gloucester Road	**KSI: 2**
	Improve sight lines, as the foliage on the right-hand side of this carriageway blocks any vehicle movement turning right onto Coombe Road. This is shown in the image to the left of this text. Provide a dedicated pedestrian phase within the junction and ensure each crossing has dropped kerbs and tactile paving.

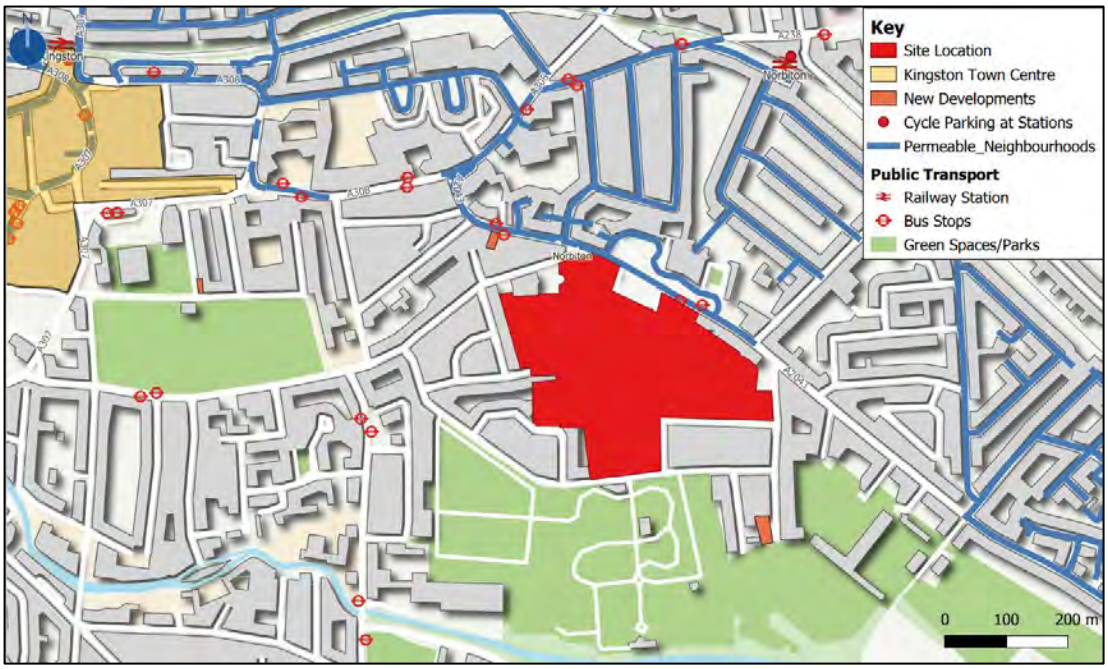
Location	Suggested Improvements
A308/Fairfield North	**KSI: 2**
	Improve clarity of signage and road marking. It is noted that this junction has already been improved as part of the Go Cycle infrastructure. Where new pedestrian and cycle facilities have been provided.

5.7 Healthy Neighbourhood Characteristics

5.7.1 The Healthy Neighbourhood Characteristics map is shown as **Figure 5.4**, illustrating:

- Street Density
- Public Transport Facilities
- Green Spaces
- Nearby Developments/planning approvals

Figure 5.4 ATZ Neighbourhood Health Characteristics Check



5.7.2 A number of new developments have been proposed within the vicinity of the site, two of which are located less than 200m from the site. These vary in type, with a number of residential, commercial and mixed-use applications. These schemes do not significantly alter the permeability of the area; however, they are likely to provide an upgrade to existing frontages, thus improving active frontages, natural surveillance and therefore the wider active travel environment.

5.7.3 In general, there is no critical deficiency in facilities in the area, with public transport access considered to be excellent. In addition, a range of services and amenities can be accessed easily on foot or by cycle. Generally, the speeds and volumes of traffic on the local highway network within the neighbourhood area allow for crossing the roads without difficulty, with crossing facilities aiding such movements on busier roads such as the high road.

5.8 Active Travel Zone Assessment

5.8.1 An active travel zone assessment was conducted on Wednesday 18th March 2020 along with 6 pre-determined routes within the neighbourhood area. These routes linked the site with the key destination identified earlier in this report and include the following:

- Route 1: Site – Chatham Road – A283 - Norbiton Railway Station
- Route 2: Site – Gloucester Road - Kingston Hospital
- Route 3: Site – A308 - Kingston Railway Station
- Route 4: Site – Hawks Road - King Athelstan Primary School
- Route 5: Site – A2043 - Kingsmeadow Athletics and Fitness Grounds
- Route 6: Site – Cambridge Road – Old London Road - Kingston Town Centre

5.8.2 The assessment involved the assessor walking along each of the routes, from the site to the key destination, and taking a photograph every 150m along the route. Each of the 6 routes are illustrated with up to 6 photographs, taken during the assessment, from the route and these have been provided through the route and are labelled accordingly.

5.8.3 The worst part of each journey has been identified in **Table 5.4** to **Table 5.9**, which also provide a brief description as to why the area shown in the relevant photograph does not meet each of the Healthy Streets indicators 3-10. The table also makes recommendations about measures that could be adopted to improve this situation.

5.8.4 Please note that the Key Route Assessments have been undertaken in compliance with the ATZ assessment guidance published by TfL (2019), whilst the assessment provides an overview of improvements to each element identified they do not present proposed mitigation measures to be provided on behalf of the applicant unless specifically identified.

Route 1: Site – Chatham Road – A283 – Norbiton Railway Station

1. Cambridge Road Traffic Lights

2. Chatham Road/Clevedon Road

3. Chatham Road

4. Coombe Road

5. Coombe Road/Norbiton station approach

Table 5.4 Route 1: Site to Norbiton Railway Station

Healthy Street Indicator	Reason for not meeting	How to Improve
Route 1: Photograph 3 (Chatham Road)		
Easy to cross	The crossing points along this route are poor, there is no tactile paving, and the dropped kerbs are uneven making them unsafe.	Introduce tactile paving and improve the existing footways.
People feel safe	This is currently a back street; some people may feel unsafe due to the isolated nature of the road.	Regenerating the area to have more active frontages would help people to feel safe.
Things to see and do	There are currently no shops or places to carry out social activities on Chatham Road, although there are front gardens whereby people may be gardening.	The introduction of new retail units may encourage more interest and engagement in the area.
Places to stop and rest	As demonstrated in the photograph there are no formal stopping places for resting.	Benches could be installed that provide a range that provide aa range of seating options.
People feel relaxed	The footway materials are poor and provide an uneven surface, with wheelie bins also taking up part of the footway which cause a trip hazard, putting some people on edge.	Improve the footways and also encourage residents not to leave their wheelie bins on the footway.
Not too noisy	Due to the nature of the road, there is little through traffic and therefore noise is limited.	None.
Clean air	Again, due to the residential nature of the road, the air is relatively clean.	None.
Shade and shelter	There is limited shade and shelter along Chatham Road.	Planting trees would provide shelter and are also aesthetically pleasing.
Route 1: Photograph 2 (Chatham Road/Clevedon Road)		
People feel relaxed	There is a lot of litter along this part of the route makes it feel like it is an undesirable location.	Reducing the amount of litter by providing more litter bins.

Route 2: Site – Gloucester Road – Kingston Hospital

1. Gloucester Road South

2. Gloucester Road North

3. Galsworthy Road/Kenley Road

4. Galsworthy Road

5. Kingston Hospital Approach

Table 5.5 Route 2: Site to Kingston Hospital

Healthy Street Indicator	Reason for not meeting	How to Improve
Route 2: Photograph 1 (Gloucester Road South)		
Easy to cross	There are few formal crossings along this section of the route for users who want to cross from one side of Gloucester Road to the other.	Introduce tactile paving would aid safe crossing.
People feel safe	This is a residential road with little pedestrian activity, meaning that people may feel unsafe walking down this section of the route.	Introduce more street furniture, in terms of bollards to prevent vehicles parking on the footway.
Things to see and do	Although there are front gardens that belong to the residential units, most of them have dropped kerbs for car parking making it difficult for people to stop and meet, due to vehicle crossovers.	Reduce the amount of vehicle crossovers in order to encourage people to stop and meet on the footways.
Places to stop and rest	As demonstrated in the photograph there are no formal stopping places for resting.	Benches would provide a place to stop and rest.
People feel relaxed	Street furniture takes up sections of the footway reducing the fluidity of the route.	Encouraging residents to remove bins would free up the footways for pedestrians.
Not too noisy	Due to the nature of the road, there is little through traffic and therefore noise is limited. During the site visit refuse collection was taking place which created more noise than usual; however, this cannot be prevented and only takes places once a week.	None.
Clean air	Again, due to the residential nature of the road, the air is relatively clean.	None.
Shade and shelter	There is limited shade and shelter along Gloucester Road.	Planting trees would provide shelter and are also aesthetically pleasing.
Route 2: Photograph 5 (Kingston Hospital Approach)		
Easy to cross	There are no formal crossings along this section of the route, for people to be able to cross from the eastbound footway to the westbound footway, i.e. towards Kingston Hospital.	Introducing formal/signalised pedestrian crossing to aid with safe crossing.

Route 3: Site – A308 – Kingston Railway Station

1. A307

2. A307 Bus Station

3. Kingston Railway Station

Table 5.6 Route 3: Site to Kingston Railway Station

Healthy Street Indicator	Reason for not meeting	How to Improve
Route 3: Photograph 1 (A307)		
Easy to cross	Whilst there are signalised crossings, it is not easy for pedestrians to cross the road at any other point other than the dedicated crossings.	Adding more crossing points would benefit pedestrians.
People feel safe	There are no dedicated cycleways along this section of road and due to the high capacity of the road could make people feel unsafe.	Providing cycle infrastructure, including a dedicated cycleway would help to encourage more sustainable travel.
Things to see and do	There is little to do in this area although there are plants to look at which provides an aesthetically pleasing view.	Active frontages would be beneficial.
Places to stop and rest	There are places to stop and rest, there are low walls to protect the footway from the busy road, and these can be used as resting places.	None.
People feel relaxed	Even though the A307 is a busy road, the footway has been protected with a low wall, this separates the footway from the road. There is no litter nor is there any graffiti.	None.
Not too noisy	Due to heavy traffic flow, including bus and HGV movements, there is a reasonable amount of noise throughout the day.	The planting of extra foliage would help to reduce noise.
Clean air	Again, with the high levels of traffic the air is not at its cleanest.	Foliage and greenery would help to compensate for the poorer air quality in this area.
Shade and shelter	Although there are plants around the junction, there is little shade and shelter from the inclement weather.	Taller bushes/trees would help to provide increase hade and shelter for pedestrians.
Route 3: Photograph 2 (A307)		
People feel safe	Although this is a one-way section of road, there is no dedicated cycle infrastructure.	Cyclists may be intimidated by the bus station located along this road and therefore a dedicated cycle route would be appropriately placed here. This would help to provide any conflict of traffic movements.

Route 4: Site – Hawks Road – King Athelstan Primary School

1. Hawks Road

2. Hawks Road

3. Hawks Road/Villiers Road

4. Villiers Road

6. King Athelstan School

Table 5.7 Route 4: Site to King Athelstan School

Healthy Street Indicator	Reason for not meeting	How to Improve
Route 4: Photograph 4 (Villiers Road)		
Easy to cross	Whilst there are crossing points, including dropped kerbs and tactile paving, parked cars block the view of the road, this would make it difficult for wheelchair users to cross the road as they would be unable to see cars travelling down the road from behind the parked cars.	Reduce how close vehicles can park to the dedicated crossing points.
People feel safe	The large tree on the footway has caused an uneven surface due to the roots impacting on the concrete. This is considered to be a trip hazard making pedestrians feel uneasy. Further to this, due to the width restriction where the tree is positioned this could force pedestrians into the road, which also makes people feel unsafe.	Maintain the trees and also the footway surfaces.
Things to see and do	There is little to see along this part of the route, mainly due to vehicles parked on-street parallel with the footway.	Widening the footway would be beneficial and limiting the number of vehicles that are able to park on-street.
Places to stop and rest	Formal seating is not present, pedestrians are able to sit on residential front garden walls, although this is not ideal.	Providing benches would be beneficial, particularly at areas where crossings have been put into place.
People feel relaxed	The footway and on-street parking suffer from littering and is also very muddy and unkempt.	The installation of more bins would help to reduce any litter being dropped on the floor.
Not too noisy	Due to the close proximity to the school, there is a large amount of traffic going into and out of the school during peak school hours.	This could be prevented by stopping parents from driving into the school to pick up their children.
Clean air	The larger number of trips in the area has a negative effect on air quality.	Initiatives to coordinate and consolidate deliveries and school drop offs/pickups
Shade and shelter	There are trees all along this route to give shade and shelter.	n/a

Route 5: Site – A2043 – Kingsmeadow Athletics and Fitness Ground

1. Cambridge Road

2. Cambridge Road

3. Kingsmeadow Athletics and Fitness Ground

Table 5.8 Route 5: Site to Kingsmeadow Athletics Ground

Healthy Street Indicator	Reason for not meeting	How to Improve
Route A: Photograph 2 (Cambridge Road)		
Easy to cross	There are few crossing places and there are parked cars on the kerbside which makes it difficult for pedestrians to cross over the main road.	Due to the busy nature of the road it would be advisable to add signalised crossings along the route.
People feel safe	Cambridge road is a busy main road, although there are dedicated cycleways, it is apparent that cyclists may not feel safe due to parked cars overlapping onto the cycleways which means that cyclists are forced out into the main carriageway.	Preventing parking on the kerbside would free up the dedicated cycleways.
Things to see and do	There are active frontages along this section of road, although improvements could be made.	Shopkeepers could be encouraged to make further use of their shop frontages to provide something to look at.
Places to stop and rest	On the northbound carriageway of Cambridge Road there are seating opportunities however these are aimed at customers only.	Providing benches and seating at bus stops would be ideal.
People feel relaxed	The pavement is uneven.	The surface of the footways could be improved to reduce the risk of pedestrians falling.
Not too noisy	This is a noisy section of road with deliveries for the shops and also with Cambridge Road being a bus route.	Controlling delivery hours would reduce noise.
Clean air	HGV movements contribute towards pollution in the air	Controlling delivery movements would also control and improve air quality.
Shade and shelter	There are trees planted at intervals along Cambridge Road, that when are full of leaves provide shade and shelter. When the leaves fall, there is no shelter along this part of the route.	Shop frontages on the northbound carriageway could provide shade and shelter for pedestrians through the use of canopies.

Route 6: Site – Cambridge Road – Old London Road – Kingston Town Centre

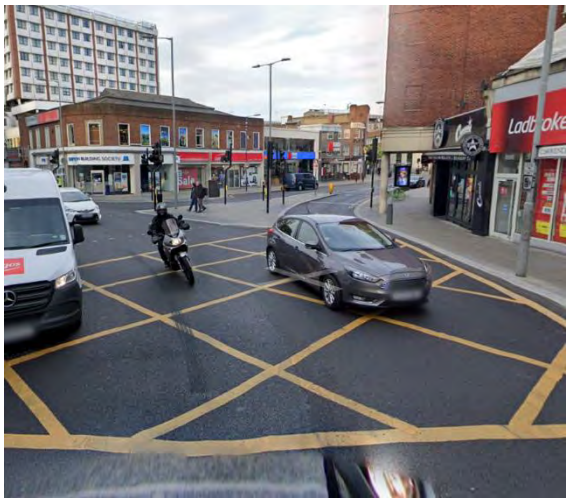
1. Cambridge Road

2. Cambridge Road/A308

3. London Road

4. London Road

5. Old London Road



6. Clarence Street

Table 5.9 Route 6: Site to Kingston Town Centre

Healthy Street Indicator	Reason for not meeting	How to Improve
Route 6: Photograph 5 (Old London Road)		
Easy to cross	There are parked cars on either side of the carriageway which prevents safe crossing, it reduces pedestrian's ability to be able to see what is coming down the road.	Pedestrianizing the area would benefit pedestrians in terms of being able to freely cross the road and walk along the road browsing shops. Adding dropped kerbs and tactile paving would also be beneficial in this area.
People feel safe	There are a lot of active frontages along this part of the route including residential dwellings and retail units.	None.
Things to see and do	Again, due to the active frontages, there are a number of shop signs and café seating areas.	None.
Places to stop and rest	There are no places to stop and rest apart from the kerbside.	Benches would be appropriately placed in this area; it would be beneficial for shoppers and also those people travelling from Kingston town centre towards Cambridge Road Estate.
People feel relaxed	It is a busy area; pedestrians are in conflict with other pedestrian movements and cyclists are in conflict with vehicular movements. This reduces the relaxing environment	Pedestrianisation will help to reduce the conflicts by making the footways wider and providing cyclists with a dedicated cycleway.
Not too noisy	It is a noisy area due to shoppers and vehicles.	Resurfacing of the road would help to reduce noise vibrations.
Clean air	Considerable amount of traffic going along the road due to car parking, this results in poor air quality.	The Pedestrianisation of the road would help to improve the air quality by encouraging people to travel by sustainable modes of transport
Shade and shelter	There are some shop fronts with canopies which provide shelter although few of them do.	Encouraging more shop fronts to provide shelter through the use of canopies

5.9 Summary

5.9.1 This chapter has provided an ATZ assessment in accordance with the latest TfL guidance (2019).

5.9.2 The assessment has identified key active travel destinations that will be of high priority to the site's users, as well as identifying the most important routes to key active travel destinations. Healthy Streets Indicators have also been assessed against specific parts of these routes to identify where improvements could be made.

5.9.3 Whilst the assessment undertaken above provides an overview of improvements to each element identified (in accordance with TfL guidelines) none of the above improvements identified above are required in order to mitigate the development and are not proposed to be provided by the applicant.

6. London Wide Network

6.1 Overview

6.1.1 This section of the TA assesses how people of all abilities will travel from the development onto London's public transport and highway networks. A multimodal trip generation assessment has been undertaken to quantify the number of trips generated by both the existing and proposed land uses and summarising the overall net impact of the proposed development on the highway and transport networks.

6.1.2 The principles of the trip generation methodology were agreed with RBK and TfL during pre-application discussions held during 2019 and 2020.

6.2 Existing Site Trip Generation

Existing Vehicular Trip Rates – TRICS Assessment

6.2.1 Reviewing the TRIS database for Mixed Private/Affordable Housing category the trip rates and generation for vehicles has extracted and provided in **Table 6.1**.

Table 6.1 Existing Vehicular Rates and Trip Generation (TRICS Data) for 832 Dwellings

Vehicles	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Rate	0.104	0.509	0.613	0.292	0.165	0.457	2.498	2.627	5.125
Trip Generation	42	106	149	72	53	126	740	765	1505

6.2.2 The above table indicates that for 832 dwellings the CRE estate would generate 149 vehicular movements in the AM peak, 126 in the PM peak and 1505 across the data (07:00-21:00), which is significantly different to that shown in **Table 6.2** above and confirms that the site attracts trips due to the unrestricted parking available within the site.

Existing Vehicular Trip Rates – ATC Assessment

6.2.3 In order to determine the existing trip generation for the site, survey data and existing levels of parking have been used. The ATC data outlined in **Table 3.6** includes Vincent Road and Cambridge Grove Road which includes properties outside the site boundary. Therefore, to provide an accurate trip estimate for the site itself the ATC's from Vincent Road and Cambridge Grove Road have been excluded. **Table 6.2** shows the corresponding trip rates for the remaining ATC's for Somerset Road, St Peters Road, Burritt Road and Willingham Way which serve approx. 774 dwellings. The table provides corresponding trip generation for 832 dwellings provided.

Table 6.2 Existing Vehicular Trip Rates and Trip Generation (ATC Data) for 832 Dwellings

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (24hr)		
	In	Out	Total	In	Out	Total	In	Out	Total
Vehicular Trip Rate	0.110	0.153	0.264	0.132	0.123	0.255	1.860	1.896	3.755
Vehicular Trip Generation	92	128	220	109	103	212	1547	1577	3124

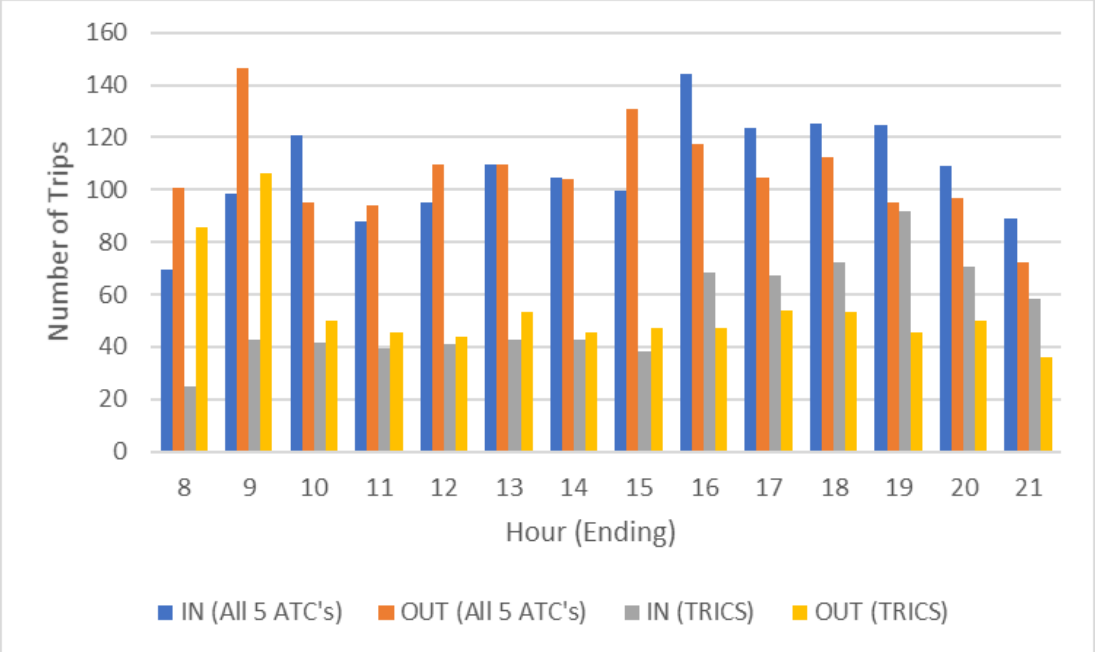
6.2.4 The above shows that for the existing 832 dwellings, the trip generation would be 220 vehicles in the AM peak and 212 vehicles in the PM peak, and 3124 trips across the day.

6.2.5 However, the ATC's do not show a typical profile of trips into or out of the site, which you would not normally expect for a residential development.

Comparison of ATC and TRICS Data

6.2.6 Therefore the weekday average ATC data (for all 5 ATC's) has been compared against the TRICS data between 07:00 and 21:00 hours to understand the likely level of movement into / out of the estate which is probably related to retail / commuter traffic, with **Image 6.1** showing the profiles of the ATC and TRICS data.

Image 6.1 Comparison of TRICS and ATC Trip Profiles (07:00-21:00)



6.2.7 The graph above shows that across the day the number of in/out movements is significantly higher with the ATC data (blue and orange) when compared with the TRICS data (grey and yellow).

6.2.8 The difference between **Table 6.1** and **Table 6.2** is provided in **Table 6.3**.

Table 6.3 Difference Between TRICS Data and ATC Data

Total People	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Difference in Trips	-5	76	71	63	23	86	782	837	1619

6.2.9 The table above shows that due to the unrestricted parking within the existing site, an additional 71 trips in the AM peak, 86 trips in the PM peak and 1619 trips occur across the day. The additional level of movement is likely to be attributable to commuters and / or the public using the estate to park their cars to access other destinations such as the Health Centre, Kingston town centre, Kingston Hospital or Norbiton Railway Station.

6.2.10 Under the development proposals it is expected that the number of trips outlined in **Table 6.2** will be lost due to the proposed introduction of parking controls as part of the sites redevelopment.

6.2.11 As the proposed masterplan will remove the existing uncontrolled parking the vehicular trip generation outlined in **Table 6.2** will be used as the basis for the sites existing trip generation.

Existing Multi-Modal Trip Generation

6.2.12 The existing total person trip generation has been determined from the TRICS database using both the Mixed Private/Affordable Housing category. The trip rates and trip generation are provided in **Table 6.4** below. The TRICS outputs are provided in **Appendix G** .

Table 6.4 Existing Total Person Rates and Trip Generation

Total People	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Rate	0.104	0.509	0.613	0.292	0.165	0.457	2.498	2.627	5.125
Trip Generation	87	423	510	243	137	380	2078	2186	4264

6.2.13 The table above shows that the total person trips generated for the existing site would be approximately 510 trips in the AM peak, and 380 in the PM peak.

6.2.14 Taking the above vehicular trip generation from **Table 6.1** and the total person trip generation from **Table 6.4**; the modal split proportions for the local MSOA shown in **Table**

3.4 have been manually adjusted, amending the car driver proportion and adjusting the other modes on a pro-rata basis. The updated modal share and trip generation are shown in **Table 6.5**.

Table 6.5 Existing Mode Share and Trip Generation

Mode	AM Mode Share (%)	AM	PM Mode Share (%)	PM	Daily Mode Share	Daily
Underground, metro, light rail,	4%	19	4%	14	3%	148
Train	23%	115	21%	81	21%	882
Bus, minibus, or coach	14%	71	13%	50	13%	544
Taxi	0%	1	0%	1	0%	7
Motorcycle, scooter or moped	1%	7	1%	5	1%	55
Driving a car or van	29%	149	33%	126	35%	1505
Passenger in a car or van	1%	5	1%	4	1%	42
Bicycle	6%	29	5%	21	5%	223
On foot	22%	112	21%	79	20%	854
Total	**100%**	**510**	**100%**	**380**	**100%**	**4264**

6.2.15 Other than for the car, the table above shows that the existing site is likely to generate approximately 115 trips by train in the AM peak, 81 in the PM peak and 882 across the day, with Pedestrians undertaking 112 in the AM peak, 79 in the PM peak and 854 across the day.

Whilst the table above shows that the existing 832 residential dwellings will generate 1505 vehicle trips across the day, it is important to remember that the site as a whole generates 3124 vehicular trips across the day due to the unrestricted parking available.

6.3 Proposed Masterplan Site Trip Generation

Proposed Vehicular and Total Person Trip Generation

6.3.1 The vehicular trip generation has been determined from the TRICS database using both the private flats and affordable flats categories. The trip rates and trip generation are provided in **Table 6.6** below and are based on 60% private flats and 40% affordable flats. The private housing TRICS outputs in **Appendix H** , with the Affordable housing TRICS outputs in **Appendix I** .

Table 6.6 Proposed Vehicular and Total Person Rates and Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Vehicular Trip Rates									
Private Trip Rate	0.01	0.02	0.03	0.034	0.016	0.05	0.166	0.175	0.341
Affordable Trip Rate	0.026	0.091	0.117	0.041	0.032	0.073	0.378	0.42	0.798
Vehicular Trip Generation									
Total Vehicle Trips	36	105	141	80	49	128	544	592	1137
Total People Trip Rates									
Private	0.054	0.335	0.389	0.259	0.165	0.424	1.933	2.233	4.166
Affordable	0.135	0.568	0.703	0.388	0.241	0.629	2.783	2.882	5.665
Total People Trip Generation									
Total People Trips	187	929	1117	674	424	1098	4932	5409	10341

6.3.2 The table above shows that the likely trip generation for the proposed site is approximately 141 vehicles in the AM peak, and 128 in the PM peak and 1137 across the day. With regard to the Total People trips, the site would generate approximately 1117 trips in the AM peak, and 1098 in the PM peak and 10,341 across the day.

Multi-Modal Trip Generation

6.3.3 Reflecting the fact that the proposed development is designed for a lower parking provision, the modal split proportions for the local MSOA shown in **Table 3.4** have been manually adjusted, reducing the car driver proportion and increasing the other modes on a pro-rata basis (which is consistent with the existing trip generation methodology). The adjusted mode share and trip generation are shown in **Table 6.7.**

Table 6.7 Proposed Mode Share and Trip Generation

Mode	AM Peak	AM Mode Share (%)	PM Peak	PM Mode Share (%)	Daily	Daily Mode Share (%)
Underground, metro, light rail, tram	52	5%	52	5%	492	5%
Train	312	28%	310	28%	2943	28%
Bus, minibus, or coach	193	17%	191	17%	1816	18%
Taxi	2	0%	2	0%	23	0%
Motorcycle, scooter or moped	19	2%	19	2%	183	2%
Driving a car or van	141	13%	128	12%	1137	11%
Passenger in a car or van	15	1%	15	1%	140	1%
Bicycle	79	7%	78	7%	743	7%
On foot	302	27%	300	27%	2849	28%
Total	**1117**	**100%**	**1098**	**100%**	**10341**	**100%**

6.4 Net Impact of Development

6.4.1 The net impact of the development by all modes of travel on the transport and highway networks is summarised below with the net change in trips by mode shown in **Table 6.8**.

Table 6.8 Net Change in Trips (+/-)

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground, metro,	5	27	33	23	15	38	159	177	336
Train	33	164	197	136	89	228	949	1060	2008
Bus, minibus, or coach	20	101	121	84	55	141	585	654	1239
Taxi	0	1	2	1	1	2	7	8	16
Motorcycle	2	10	12	8	6	14	59	66	125
Driving a car or van	10	-19	-8	0	3	-6	-189	-179	-368
Passenger in a car or	2	8	9	6	4	11	45	50	96
Bicycle	8	41	50	34	23	58	240	268	507
On foot	32	159	190	132	86	221	918	1026	1944
Total	**113**	**493**	**606**	**425**	**281**	**707**	**2772**	**3129**	**5901**

6.4.2 As shown in **Table 6.8**, the proposed development is forecast to result in an increase in approximately 606 trips in the AM peak and 707 trips in the PM peak and 5901 across the day. The majority of additional trips are forecast on public transport modes. The increases in trips outlined above are discussed in further detail in this chapter but are not considered to be significant due to the extremely high accessibility of public transport within close proximity to the site across which these trips are forecast to be distributed.

6.4.3 The above table compares the existing (TRICS assessment) trip generation (**Table 6.5**), with the proposed trip generation (**Table 6.7**). It does not reflect the total reduction in the level of vehicular movement as a result of the regeneration of the estate. The net impact of all vehicular traffic between the existing estate (**Table 6.2**) and the proposed development (**Table 6.6**) is summarised in **Table 6.9**.

Table 6.9 Net Change in Site Wide Vehicular Traffic

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing	92	128	220	109	103	212	1547	1577	3124
Proposed	36	105	141	80	49	128	544	592	1137
Net	**-56**	**-23**	**-79**	**-30**	**-54**	**-84**	**-1003**	**-985**	**-1988**

6.4.4 The table above shows that the development will result in vehicular traffic reducing by 79 trips in the AM peak, 84 in the PM peak and 1988 across the day. The existing traffic which currently uses the estates for commuter/retail/visitor purposes, will be lost as a result of

measures put in place to ensure that car parking on the existing and proposed local streets no longer occurs. This is discussed in more detail later in this report.

6.5 Other Land Uses

6.5.1 The development proposals include a range of other Land uses as outlined in **Table 2.1**. It is anticipated that that these uses are ancillary to the proposed residential uses and the residential properties of the surrounding area. No dedicated car parking will be provided for the non-residential uses in accordance with TfL's wishes. It is therefore expected that walking and cycling will be the predominate mode of transport for these uses as is the case for the existing commercial properties around the Hawks Road / Cambridge Road junction. For the purposes of this assessment, it is assumed that all trips generated by these land uses will be internalised with only servicing vehicles expected to visit the site.

6.6 Servicing Trips

6.6.1 RBK requested additional information regarding the number of delivery and servicing trips related to the residential and commercial elements.

Residential Delivery and Servicing Trips

6.6.2 Residential delivery and servicing trips have been calculated from the TRICS database. Only the Private Flats has a 'Servicing Vehicle' category within the TRICS database, therefore this has been used to determine the number of vehicles for all the properties (private and affordable), with the results provided in **Table 6.10** and **Appendix H** .

Table 6.10 Residential Delivery and Servicing Trips

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Rates	0.002	0.002	0.004	0.004	0.006	0.01	0.032	0.032	0.064
Existing Trips	2	2	3	3	5	8	27	27	53
Proposed Trips	4	4	9	9	13	22	69	69	139
Net Difference	3	3	5	5	8	13	43	43	86

6.6.3 The same trip rates have been used for the existing residential properties and proposed residential development.

6.6.4 The table above shows that the existing 832 dwellings might generate 3 trips in the AM peak, 8 in the PM peak and 53 across the day.

6.6.5 The table above shows that the site is forecast to generate approximately 9 delivery and servicing trips in the AM peak, 22 in the PM peak and 134 across the day. Using the HGV's trip rate from the private flats it is possible to determine the ratio of LGV/HGV deliveries across the day. A total of 21 HGV trips are expected to serve the site across on day (none occurring in the peak hours), with the remainder being LGV vehicles.

6.6.6 The above results in a net increase of 5 trips in the AM peak 13 in the PM peak and 86 across the day.

Commercial Delivery and Servicing Trips

6.6.7 Commercial delivery and servicing trips have been calculated from the TRICS database, with the exception of the community use. In additional, it is anticipated that the Community Use may include a Café element to it. Therefore, in order to be robust 200sqm of the community use has been modelled as Café in order to give a robust assessment regarding delivery vehicles.

6.6.8 With regard to the community use the TRICS database has many different community site surveys, which vary in terms of trip generation, but none are located within London. Therefore, a trip rate of 0.15 trips per 100sqm of NIA has been used for the community use. This figure – which is taken from the Battersea Power Station redevelopment – applies to the total daily trip rate, whereas for robustness this has been applied to the daily inbound and outbound (doubling the daily trip rate) for the community use in order to be robust.

6.6.9 **Table 6.11** shows the trip rates and generation are provided for each commercial use, with TRICS outputs provided in **Appendix J** , **Appendix K** , and **Appendix L** .

Table 6.11 Commercial Delivery and Servicing Trip Rates and Generation

Use Class	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Rates									
A1 Retail	0.024	0	0.024	0.048	0.071	0.119	0.618	0.62	1.238
B1 Workspace	0.008	0.016	0.024	0.008	0.008	0.016	0.218	0.219	0.437
D2 Community Use							0.15	0.15	0.3
A3 Café (Community Use)	0	0	0	0	0	0	0.291	0.291	0.582
Site Wide Delivery and Servicing Trip Generation									
Total Trips Generation	0	0	0	1	1	1	10	10	20

6.6.10 The table above shows that there will be a total of 20 commercial delivery and servicing trips across the day. Of the 20, nine are expected to be HGV's with the remainder LGV.

6.6.11 It should also be noted that this assessment does not consider the number of delivery and servicing trips which might occur on site for the existing non-residential uses. Therefore, the net change in delivery trips is likely to be less than the figures outlined in the table above. In any event the number of vehicles outlined in the table above would result in a negligible impact on the highway network.

6.6.12 Further detail regarding the delivery and servicing arrangements for the site is provided in the DSP which accompanies this TA.

6.7 Design Solutions

Walking and Cycling Impact

6.7.1 The proposed development is forecast to generate an additional 190 walking trips in the AM peak and 221 in the PM peak, with and 50 additional cycling trips in the AM peak and 58 additional trips in the PM peak.

6.7.2 As described in Chapter **4**, the proposed development seeks to undertake a number of significant improvements to the public realm in and around the immediate vicinity of the site which will significantly improve the overall pedestrian and cyclist environment these include:

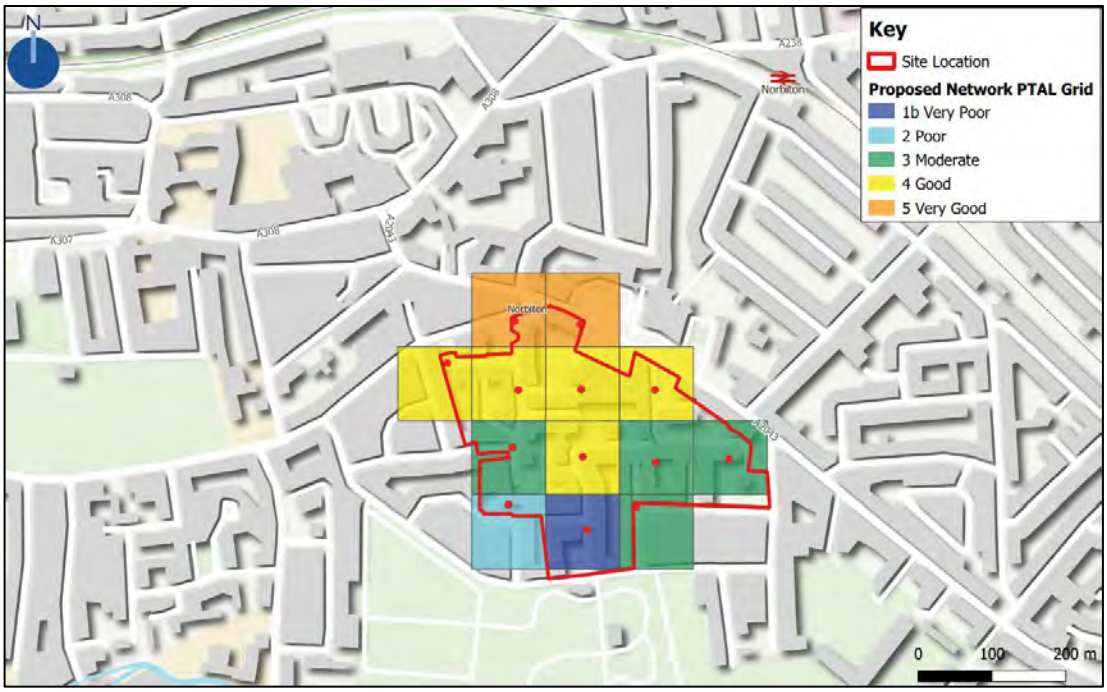
- The creation of new public spaces that will allow people to spend time, sit and relax.
- New pedestrian / cycle routes throughout the masterplan increasing pedestrian and cycle permeability.
- A significant increase in the number of active frontages, on all new internal streets increasing the natural surveillance of public space within the vicinity of the site.
- New streets and footways with carefully selected and designed materials to align with the new public space.
- The provision of short stay cycle parking evenly distributed throughout the site to encourage cycling.
- New carriageway design and landscaping to result in slower vehicle speeds which has the potential to improve the overall air quality of the site.

6.7.3 As a result, whilst the proposed development is forecast to increase the number of pedestrian and cyclist trips within the vicinity of the site the overall improvements to the walking and cycling networks as described above are considered to significantly outweigh the increase in trips. The proposed development is therefore considered to result in a positive impact on the local walking and cycling networks and also deliver on the strategic objectives of designing Healthy Streets.

Improvement in the Sites PTAL Rating

6.7.4 As outlined in Section **3.5** the existing PTAL of the site is between 0 in the southern areas of the site and 5 in the northern parts of the site. A manual calculation of the illustrative masterplan has been undertaken with the resulting PTAL scores shown in **Figure 6.1**

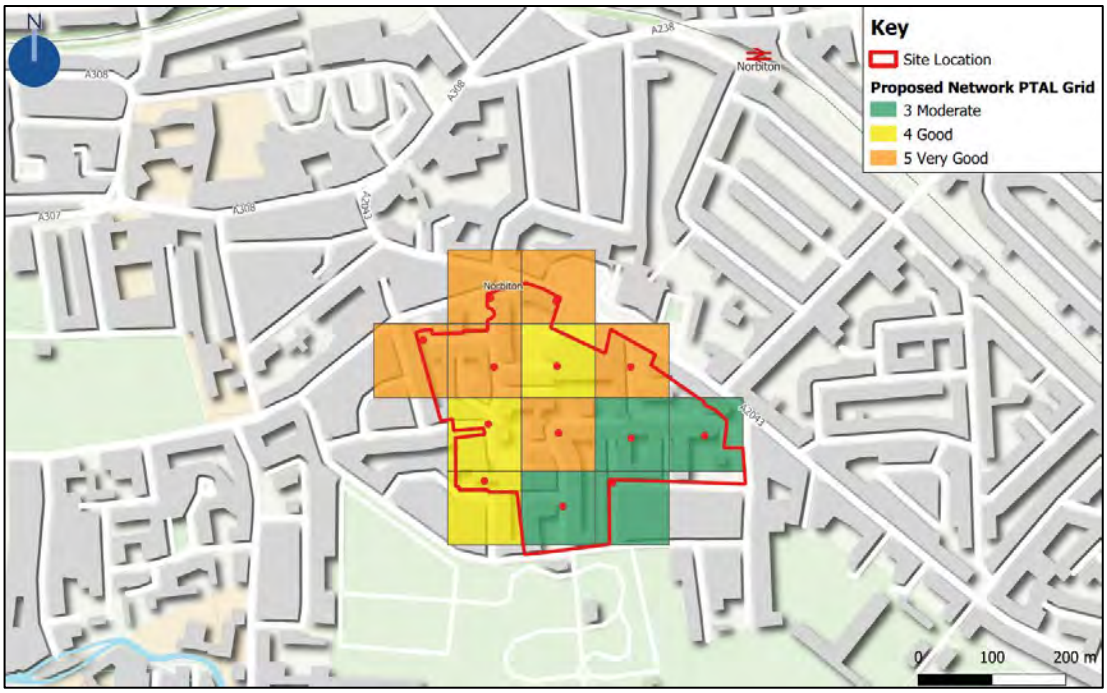
Figure 6.1 Manual PTAL Calculation of Illustrative Masterplan



6.7.5 The figure above shows that the site's PTAL rating increases from 1B in the south western corner of the site with the northern parts of the site remaining a PTAL of 5. This shows that the illustrative masterplan provides a significant improvement in accessibility to public transport. This improvement is as a result of the grid system and more direct north / south routes through the site. Although improved those parts of the site which have a rating of 1b or 2 is because Norbiton Station is outside the 960m walking distance cut off.

6.7.6 In addition, there is a more direct link through Cambridge Gardens (immediately to the north of the CRE) which provides a more direct pedestrian link to Norbiton Avenue. **Figure 6.2**, therefore shows a manual PTAL calculation which includes this link.

Figure 6.2 Manual PTAL Calculation Inc. Link Through Cambridge Gardens



6.7.7 The figure above shows that with the inclusion of the link through Cambridge Gardens the PTAL of the site ranges from a low of 3 (moderate) in the south western part of the site to a high of 5 in the middle and northern parts of the site. This again shows that the accessibility of the site is greatly improved by the proposed masterplan and the inclusion of more direct routes to Norbiton Railway Station in particular.

London Underground

6.7.8 This level of impact is not considered to be of any material significance to the operation of the high capacity London Underground network. As a result, the impact of the proposed development upon the London Underground network is forecast to be negligible.

National Rail Network

6.7.9 The proposed development is forecast to generate an additional 230 trips on the local rail network (inc tube journeys) in the AM peak and 266 in the PM peak. As described previously, the site is located within the vicinity of a number of major rail stations providing a high level of service to a wide range of destinations across London and the wider South East.

6.7.10 Using Census 2011 Method of Travel to Work Data for existing workplace residences in Kingston, an estimation of the distribution of residents by stations within the vicinity of the site has been undertaken. Assuming all rail and underground trips begin at Norbiton Railway Station and they all travel on the Kingston Loop, **Table 6.12** provides a summary of the distribution of trips across the AM and PM peaks.

Table 6.12 National Rail Impact

Rail Station	Peak Hour Frequency	AM Peak		PM Peak	
		Total Trips	Trips per Service	Total Trips	Trips per Service
Norbiton	6	230	38	266	44

6.7.11 As shown in **Table 6.12**, the additional trips forecast by the development will be distributed across several stations within the vicinity of the site. Given the high number of services from these stations, the proposed development is likely to result in between 38 and 44 additional passengers per train in the AM and PM peaks. Given the recent increase to 10 coach trains this is approximately 4 additional people per carriage.

6.7.12 This level of impact is not considered to be of any significance within the context of the density of rail network and large capacity of each of these services (of between 8 and 10 car trains with 800 to 1,200 passenger capacity). The impact of the proposed development upon the local rail network is therefore not considered to be of any significance.

Bus Impact

6.7.13 The proposed development is forecast to generate an additional 121 trips in the AM peak and 141 trips in the PM peak. The development site is well served by buses with approximately 56/58 bus services accessible within 640m of the development during peak hours (based on a PTAL of 3). The proposed development will therefore result in approximately 2-3 additional passengers per bus in each peak period.

6.7.14 An impact of 3 additional passengers per bus is not considered to be significant.

Car Parking Impact

6.7.15 The development proposes a parking ratio of 0.4 spaces per dwelling which is in accordance with the Draft London Plan. However, in order to ensure that there are no adverse impacts on the surrounding roads the following measures are proposed:

- Implementation of a Travel Plan to support the development and encourage active travel.
- Two initial car club vehicles will be provided on-site under Phase 1, providing access to a car for residents (existing and new) should they require it.
- No household will be allowed access to more than one parking space.
- Existing residents will be provided a parking space with their new home should they require it.
- New residents will not be allowed to purchase a permit to park on-street within any CPZ which surrounds the site.

Summary

6.7.16 The proposed development is located within Greater London with excellent accessibility to a wide range of public transport services and destinations and is a reasonable location for a development of this density and trip generation characteristics. It is forecast that the proposed development trips will be distributed across all of the public transport modes within the vicinity of the site without reliance on any single station, line or service. As a result, the impact of the proposed development upon the public transport networks within the vicinity of the site is not considered to be significant and no specific mitigation measures required.

6.7.17 The proposals are forecast to result in increases to the number of trips on the local public transport networks, however given the proposed higher PTAL across much of site and the wide range of services and destinations which can be accessed from within a short walk from the site, once these trips have been distributed across those services and destinations the overall impact of the development is not considered to be significant.

6.8 Highway Network Impact

Existing Trip Distribution

6.8.1 The existing trip distribution has been calculated from the ATC surveys undertaken in the following locations:

i. Somerset Road
ii. St Peters Road
iii. Burritt Road
iv. Vincent Road
v. Cambridge Grove Road
vi. Willingham Way

6.8.2 ATC's 1, 2, 3 & 6 (approx. 774 dwellings) have been used to determine the likely trip generation for the entire estate. **Image 6.2** shows the trip distribution for the for the existing 832 dwellings.

Image 6.2 Existing Trip Distribution

6.8.3 The distribution based on daily trip generation onto Hawks Road and Cambridge Road is as follows:

- 49% - Hawks Road
- 51% Cambridge Road

Proposed Trip Distribution

6.8.4 The masterplan makes the site more accessible for active modes, but also changes the number/location of vehicular accesses across the site. Based on the location of the proposed parking spaces across the site the distribution of traffic is based upon the parking spaces nearest access to the surrounding highway network. **Image 6.3** shows the sites distribution for the proposed masterplan.

Image 6.3 Proposed Trip Distribution

6.8.5 The masterplan results in a change in the distribution of traffic entering and exiting the site, with St Peters Road access accommodating 32% of the site vehicular traffic and the new access adjacent to K2 accommodating 21% of the traffic. Using the modal split above **Table 6.13** shows the level of traffic for each proposed site access.

Table 6.13 Proposed Trip Generation at each Site Access

Access Location	AM Peak			PM Peak			24Hr		
	In	Out	Total	In	Out	Total	In	Out	Total
Somerset Road	6	18	24	14	8	22	93	101	194
St Peters Rd	11	34	45	26	16	41	174	190	364
K2 Access	7	22	29	17	10	27	113	123	236
Burritt Road	5	15	20	11	7	18	76	83	158
Vincent Road	1	4	5	3	2	5	19	21	41
Willingham Way	0								
Cambridge Grove Road	2	5	6	3	2	6	24	26	50
Rowlls Rd	1	3	4	2	1	4	16	17	33
Bonner Hill Road	2	6	8	4	3	7	29	32	62
Total	**36**	**105**	**141**	**80**	**49**	**128**	**544**	**592**	**1137**

6.8.6 The proposed development will result in the majority of vehicles using either the St Peters Road or K2 junctions with Cambridge Road.

6.8.7 **Table 6.14** shows the net impact in terms of vehicular traffic at each access.

Table 6.14 Net Impact at each Site Access

Access Location	AM Peak			PM Peak			24Hr		
	In	Out	Total	In	Out	Total	In	Out	Total
Somerset Road	-36	-27	-63	-22	-33	-55	-474	-480	-954
St Peters Rd	1	21	21	14	6	20	11	1	13
K2 Access	7	22	29	17	10	27	113	123	236
Burritt Road	-19	-21	-40	-21	-23	-44	-385	-367	-751
Vincent Road	-8	-23	-32	-15	-13	-28	-196	-235	-431
Willingham Way	-9	-25	-34	-22	-15	-37	-249	-249	-498
Cambridge Grove Road	-2	4	2	-2	0	-2	-54	-15	-69
Rowlls Rd	1	3	4	2	1	4	16	17	33
Bonner Hill Road	2	6	8	4	3	7	29	32	62
Total	**-63**	**-42**	**-105**	**-45**	**-64**	**-109**	**-1188**	**-1172**	**-2360**

6.8.8 The distribution based on daily trip generation onto Hawks Road and Cambridge Road is as follows:

- 25% - Hawks Road
- 75% - Cambridge Road

Junction Modelling

6.8.9 This section outlines the impact of the proposed development on the two new proposed access junctions, namely St Peters Street and K2 Access as requested by RBK.

6.8.10 In order to be able to assess the effects of the proposed development accurately, capacity performance of these two junctions has been tested.

6.8.11 The junctions have been modelled using industry standard software appropriate for the particular junction type (i.e. PICADY). The main outputs used to assess how the junctions are performing are the Ratio of Flow to Capacity (RFC), Delay and Queue Lengths.

6.8.12 Priority junctions with an RFC of less than 0.85 are considered to be operating within their practical capacity and little or no queuing would be expected.

6.8.13 RFC's between 0.85 and 1.0 would mean that the junction is beginning to approach theoretical capacity and some queuing would be expected. RFC's over 1.0 would mean that flows at the junction are exceeding its theoretical capacity and more extensive queuing would begin to be experienced.

Committed Development

6.8.14 The cumulative impact of the following developments has been considered:

- 65 Hampden Road (19/00020/FUL)
- Eden Walk Shopping Centre (15/13063/FUL)
- Canbury Place Car Park & Kingston Road (19/02323/FUL)
- 229-255 Kingston Road, New Malden(19/01228/FUL)
- Old Post Office, Kingston(14/13247/FUL)

6.8.15 The above developments only result in an additional 6 trips in the AM peak and 8 in the PM peak travelling along Cambridge Road. Despite the extremely low level of movement, they have been included in the junction modelling.

Scenarios Tested

6.8.16 In order to access the impact of the traffic generated by the development, the junctions examined have been assessed including TEMPRO traffic growth based on the year of opening in 2033. The following scenario has been tested.

- 2033 Base + CD + Proposed Development

6.8.17 The 2033 Base + Proposed Development models the impact of 2170 dwellings (the proposed development).

Cambridge Rd (East) / St Peters Street / Cambridge Rd (West) – Priority

6.8.18 **Table 6.15** summarises the junction capacity analysis for the Cambridge Rd and St Peters Street Access priority junction in the 2033 Base + Proposed Dev scenario. **Appendix M** includes the full PICADY outputs**.**

Table 6.15 Cambridge Rd / St Peters St Access Priority Junction – Future Year Assessments

Location	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
2033 Base + Proposed Development				
B-AC (St Peters Rd to Cambridge Rd)	0.128	0.1	0.054	0.1
C-AB (Cambridge Rd to St Peters Rd)	0.026	0.0	0.065	0.1

6.8.19 The table above shows that the Cambridge Rd / St Peters St Access priority would operate with RFC's significantly below 0.85 in 2033 with the proposed development, with virtually no queuing expected during the peak hours.

Junction 2 – Cambridge Rd (East) / K2 Access / Cambridge Rd (West) – Priority

6.8.20 **Table 6.16** summarises the junction capacity analysis for the Cambridge Rd (East) / K2 Access / Cambridge Rd (West) priority junction in the 2033 Base and the 2033 Base + Proposed Dev scenarios. **Appendix N** includes the full PICADY outputs.

Table 6.16 Cambridge Rd / K2 Access Priority Junction – Future Year Assessments

Location	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
2033 Base + Proposed Development				
B-AC (Block K to Cambridge Rd)	0.075	0.1	0.036	0.0
C-AB (Cambridge Rd to Block K)	0.018	0.0	0.042	0.1

6.8.21 The table above shows that the Cambridge Rd / K2 Access priority would operate with RFC's significantly below 0.85 in 2033 with the proposed development, with virtually no queuing expected during the peak hours.

6.9 Summary of Masterplan

6.9.1 The illustrative masterplan provides for a comprehensive redevelopment of the existing Cambridge Road Estate. It removes an unwelcome environment with access issues and replaces it with a permeable welcome environment for residents to linger and enjoy the space.

6.9.2 The masterplan greatly improved the site PTAL rating by bringing public transport closer to each dwelling, with more direct walking and cycling routes. The parking is appropriate to the site's PTAL, accessibility to local facilities and is in accordance with the Draft London Plan. The development will not result in any overspill parking onto surrounding residential areas.

6.9.3 The impact of vehicular trips is positive with the development resulting in less traffic than that which currently accesses the site due to the unrestricted parking available. The impact on the underground, train and bus networks is not significant.

6.10 Phase 1 Trip Generation

Existing Multi-Modal Trip Generation

6.10.1 Based on the loss of 129 dwellings and using the trip rates outlined in the above section **Table 6.17** summarises the trip generation for the existing dwellings.

Table 6.17 Phase 1 – Existing Trip Generation

Mode	AM	PM	Daily
Underground, metro, light	3	2	23
Train	18	13	137
Bus, minibus, or coach	11	8	84
Taxi	0	0	1
Motorcycle, scooter or	1	1	8
Driving a car or van	23	19	233
Passenger in a car or van	1	1	7
Bicycle	5	3	35
On foot	17	12	132
Total	**79**	**59**	**661**

6.10.2 The above table suggests that for the existing 129 dwellings within Phase 1 the level of vehicular traffic would be 23 trips in the AM peak, 19 in the PM peak and 233 across the day.

Proposed Multi-Modal Trip Generation

6.10.3 Reflecting the fact that the proposed development is designed for lower parking provision, the modal split proportions for the local MSOA shown in **Table 3.4** have been manually adjusted, reducing the car driver proportion and increasing the other modes on a pro-rata basis. The adjusted mode share and trip generation are shown in **Table 6.18.**

Table 6.18 Proposed Mode Share and Trip Generation

Mode	AM	PM	Daily
Underground, metro, light	11	11	103
Train	65	65	613
Bus, minibus, or coach	40	40	378
Taxi	1	1	5
Motorcycle, scooter or	4	4	38
Driving a car or van	29	27	237
Passenger in a car or van	3	3	29
Bicycle	16	16	155
On foot	63	63	593
Total	**233**	**229**	**2154**

6.10.4 The proposed trips shown above have been compared to the existing trips generated by the existing site to understand the net change in trips resultant of the development proposals. The net change in trips is shown in **Table 6.19**.

Table 6.19 Net Change in Trips (+/-)

Mode	AM Peak		
	In	Out	Total
Undergroun	8	8	77
Train	47	51	459
Bus	29	31	283
Taxi	0	0	4
Car	3	3	28
Motorcycle	8	11	58
Car Driver	2	2	22
Bicycle	12	13	116
Walking	45	49	444
Total	154	170	1493

6.10.5 As shown in **Table 6.8**, the proposed development is forecast to result in an increase in approximately 154 trips in the AM peak and 170 trips in the PM peak and 1493 across the day. The majority of additional trips are forecast on public transport modes. The increases in trips outlined above are discussed in further detail in this chapter but are not considered to be significant due to the extremely high accessibility of public transport within close proximity to the site across which these trips are forecast to be distributed.

6.10.6 The table above indicates that Phase 1 will result in a very small increase in vehicular trips to and from the site. The level is negligible and well within daily fluctuations in traffic levels, as a result no junction modelling has been undertaken.

Impact of Phase 1 on Vehicular Trips

6.10.7 Phase 1 results in an increase of 2 vehicular trips in the AM and PM peaks with 22 across the day. This is a negligible impact on the highway network. This impact is temporary as section **6.4** shows that the overall impact of the masterplan will result in a reduction in vehicular traffic across the site.

Impact of Phase 1 on Walking and Cycling

6.10.8 The development results in an increase in walking of 45 movements in the AM peak with 49 in the PM peak and 444 across the day. With regard to cycling the increase is 12 trips in the AM peak, 13 in the PM peak and 116 across the day. The level of increase is small is and is not significant due to the good provision of walking and cycling infrastructure.

Impact of Phase 1 on the Rail (inc. Underground) Network

6.10.9 The development results in an increase in walking of 55 movements in the AM peak with 59 in the PM peak and 536 across the day. This equates to approximately 9 additional people per train in the AM and PM peaks. This level of increase is not considered to be significant.

Impact of Phase 1 on the Bus Network

6.10.10 The proposed development is forecast to generate an additional 29 trips in the AM peak and 31 trips in the PM peak. Based upon the existing PTAL rating of 1b there are approx. 10 bus services in the peak hours which would equate to 3 additional persons per bus services. This level of impact is not considered to be significant.

Impact of Phase 1 on the Car Parking Levels

6.10.11 Phase 1 of the masterplan proposes 126 parking spaces, a ratio of 0.3. It is acknowledged this provision is less than the 0.4 ratio the masterplan delivers as a whole. However, this is appropriate for the following reasons:

- The 'shortfall' is only temporary – 0.4 will be delivered across the masterplan.
- Plot C within Phase 1 has a PTAL of 5 which is under the Draft London Plan is appropriate for a car free development. A short-term lower parking provision in this area is considered appropriate whilst the remainder of the masterplan is built out.
- The parking beat survey shows that both the estate and the surrounding areas has a spare capacity.
- The new residents will not be allowed to apply for a permit within any existing/future CPZ outside of the site.
- New residents will not be allowed to purchase a permit to park on-street within any existing/future CPZ which surrounds the site.
- The applicant is willing to provide a S106 contribution to RBK to fund any changes to the waiting restrictions and/or CPZ either within the estate or in the surrounding area.
- Implementation of a Travel Plan to support Phase 1 of the development and to encourage active travel.
- Two initial car club vehicles will be provided on-site under Phase 1, giving existing and future residents access to a car without the need to own one.
- No household will be allowed access to more than one parking space.

6.10.12 Given the measures outlined above it is not expected that Phase 1 will result in any adverse impacts on the surrounding roads Summary of Phase 1

6.10.13 Phase 1 provides new walking routes in particular which begins to improve the site accessibility in line with the masterplan vision. The level of vehicular traffic does increase in the short term, but only marginally and are within the variations in traffic flow that occur on a daily basis. The increase in trips on the public transport network is considered to be significant.

7. Construction and Logistics

7.1 Overview

7.1.1 This chapter provides an overview of the Outline Construction and Logistics Plan (CLP) that has been prepared in support of the development proposals. The applicant has considered matters related to construction at an early stage of the project to ensure the local impacts of construction and demolition activity can be sufficiently mitigated. This chapter has been written in accordance with TfL's Construction and Logistics Plan guidance.

7.1.2 In accordance with the TfL CLP guidance the remainder of this chapter considers the construction related impacts of the proposed development and a series of measures that have been considered at this early stage of the development process to try and mitigate the impact of construction activity as far as possible. The Outline CLP details a series of measures that the applicant will use to mitigate the impact of the construction period on the wider transport networks, and most significantly the local road network.

7.1.3 The Outline CLP will be used and incorporated into the procurement of the project post planning consent to ensure that all contractors adopt the measures outlined in the document.

7.1.4 A Construction Management Plan has also been prepared by Countryside in support of the application and should be read in conjunction with the TA, and the CLP.

7.2 Vehicle Trips

7.2.1 At this stage the level of vehicular movement has not yet been determined, because of the early stage of the development. Once this is done the level of vehicular activity will be updated.

7.2.2 The number of HGV movements will vary day to day depending upon the activities. The typical daily movement are expected to be between:

- 630-1050 vehicles a month – based on a 4-week month (1260-2100 movements a month)
- 165 and 275 vehicles per week (330-550 Movements a week)
- 30-50 vehicles a day (60-100 movements a day)
- 4-6 vehicles per hour (8-12 movements an hour)

7.2.3 As stated above the numbers provided are typical movements, on particular days there could be higher numbers depending upon circumstances. Equally on other days there will be less.

7.3 Temporary Construction Access

7.3.1 Access to the site during Phase 1 will be from Hawks Rd to the south of the Hawks Rd / Cambridge Rd signalised junction. This access is shown below in **Image 7.1** and in full on Drawing 19157-MA-XX-XX-DR-C-0045.

7.3.2 Drawing 19157-MA-XX-XX-DR-C-0045 shows swept path vehicle analysis for the following vehicles:

- 16.5m articulated lorry
- Large Tipper
- Skip

Image 7.1 Phase 1 Hawks Rd Access – Swept Path Analysis

7.3.3 It can be seen from the extract above that all vehicles can enter and exit from Hawks Road in a forward movement without obstructing the opposing lane of traffic.

7.3.4 Vehicles will use the access with left in and right out only movements. Only in exceptional circumstances will vehicles turn left out of the Washington Road access. It can be seen that there is no conflict with the opposing lane with vehicles entering the access.

7.3.5 Where any activity at the vehicle entrance occurs suitably qualified banksman will manage traffic. The banksman will additionally be tasked with ensuring that pedestrians are kept managed when vehicles are entering / exit the site access.

7.3.6 The access will only be operation for the duration of the construction period.

7.4 Programme

7.4.1 The outline construction programme for the proposed development (subject to planning permission) is shown in **Table 7.1**.

Table 7.1 Proposed Construction Programme

Project Stage	Block B	Block C	Block E
Site Setup & Demolition	Month 1-2	Month 8-14	Month11-16
Basement Excavation & Piling	Month 2-3	Month 12-15	Month 16-21
Sub-structure	Month 3-6	Month 14-17	Month 20-24
Super-structure	Month 5-10	Month 16-32	Month 22-37
Façade / Cladding	Month 8-15	Month 19-34	Month 24-44
Fit-out, testing &	Month 11-19	Month 25-40	Month 32-48

7.5 Strategies to Reduce Impacts

7.5.1 **Table 7.2** outlines a series of strategies that have been considered by the applicant to reduce the impact of construction activity. The measures have been categorised into the following:

- **Committed:** a measure that the client is committed to at this stage.
- **Proposed:** a measure that the applicant will explore in greater detail as the project progresses, most likely post consent.
- **Considered Feasible:** measures that the applicant is willing to consider should circumstances change.

Table 7.2 Proposed CLP Measures

Project Stage	Time Period	Status
Safety and Environmental Standards	All contractors and the applicant will adhere to all relevant safety and environmental standards relating to the construction of the site. *Reason: to ensure all obligation in relation to safety and environment are met.*	Committed
Adherence to designated routes	All contractors will be required to adopt the routes to the site as outlined in this document [or any subsequent submission as required by LBS/TfL] *Reason: to ensure vehicles are appropriately routed to minimise impact on sensitive roads / junctions.*	Committed
Delivery Scheduling	The main contractor will implement a delivery schedule and booking system to manage the arrival and departures of vehicles evenly throughout the day. *Reason: to minimise impact during network peaks.*	Proposed
Use of Holding Area	The main contractor will implement a holding area in a suitable location away from the site where vehicles can wait until they are required on site. *Reason: to minimise waiting on the highway immediately adjacent to the site.*	Proposed
Car-lite Construction Site	That the construction site will not provide any parking on site for contractors. *Reason: to reduce vehicle trips associated with construction of the site.*	Proposed
Staff Travel Plan	Implement a travel plan for construction staff to encourage use of sustainable modes of transport. *Reason: to encourage sustainable trips to site by staff.*	Considered Feasible
Collaboration with Other Sites	Collaborate with neighbouring sites (if applicable) to combine vehicle trips where practical (i.e. spoil removal / delivery of regular small items). *Reason: increase efficiency of operation and reduce the number of primary vehicle trips.*	Considered Feasible
Vehicle Choice	Ensure all contractors working on site are members of CLOCS Silver or above. Reason: ensure all vehicles operating at the site meet the CLOCS regulatory standard.	Proposed

7.6 Summary

7.6.1 This chapter has demonstrated how the applicant has considered in detail matters relating to construction and logistics at an early stage. Whilst, within the context of the works proposed the impact of construction activity on the site is forecast to be low, the considerations within this CLP will be used to inform procurement, tendering and contractor selection going forward (subject to planning consent).

8. Need for Mitigation

8.1 Overview

8.1.1 This section considers the need for mitigation measures required resulting from the proposed development.

8.1.2 The proposed development provides a high-quality mixed-use development, with a greatly improved public realm offering for the existing and future residents of the Cambridge Road Estate and Norbiton. The proposed development maximises the pedestrian and cycle permeability for residents, staff and visitors.

8.2 Residential and Commercial Elements

8.2.1 The impact of the pedestrian, cycling and public transport trips resulting from the additional residential dwellings is not considered to be significant because of the significant improvements delivered by the development. The proposals will result in significant improvements to the connectivity and permeability of the pedestrian and cycling network, which in turn is shown to also increase the PTAL within the vicinity of the site.

8.2.2 The significant number of walking, cycling and public transport trips, coupled with the constraint-based approach to car parking supported by both local and regional policy, limits the number of additional trips on the highway network. However, in recognition of the uplift in people travelling to and from the estate the following mitigation is proposed.

- Appropriate financial contribution towards amending the design and subsequent construction of Go Cycle scheme to accommodate the 10m pedestrian crossing and relocation of the bus stops.
- Appropriate financial contribution towards extending the Go Cycle scheme.

8.2.3 In order to support the parking ratio provision of the following measures is also proposed:

- Three years free car club membership for each dwelling.
- Provision of 2 zip cars in Phase 1 with the possibility of additional vehicles in subsequent phases.
- Appropriate financial contribution towards RBK for them to undertake parking surveys and determine whether the new or revised CPZ are required.
- Other than existing residents who are being re-housed an obligation to prevent any future residents of the development from purchasing a permit for the existing or future CPZ's in the area.
- Financial Obligation of £1,000 towards Travel Plan monitoring.
- Financial Obligation of £3,500 towards Travel Plan monitoring

8.2.4 No specific mitigation measures are proposed to accommodate the additional train/tube trips because the impact of the development is not significant and there is capacity to accommodate the additional trips arising.

8.3 Design Implications

8.3.1 The proposed mixed-use development provides a new public realm for commercial, retail, community and residential uses. This is a significant improvement over the existing estate, which is uninviting, and car dominated. The proposed development will create a more attractive environment with active frontages, which contributes to the local economy in providing public spaces for residents to enjoy, a permeable network of walking and cycle routes, which are safe and with no significant changes in level.

8.3.2 The site will also help reduce the reliance on the private car in accordance with the Mayor's transport strategy and encourage active travel through the provision of cycle parking. The site's proximity to public transport facilities will offer a realistic alternative to the car.

8.3.3 Other measures to support active modes of transport will be outlined in the framework TP which has been submitted alongside this TA and which supports the application.

9. Conclusions

9.1 Summary

9.1.1 This Healthy Streets Transport Assessment has been prepared in support of a planning application for the redevelopment of the Cambridge Road Estate in the Royal Borough of Kingston.

9.1.2 The development proposals seek outline planning permission for:

"Hybrid Planning Application for a mixed use development, including demolition of existing buildings and erection of up to 2,170 residential units (Use Class C3), 290sqm of flexible office floorspace (Use Class E), 1,395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), 1,250sqm community floorspace (Use Class F2), new publicly accessible open space and associated access, servicing, landscaping and works.

Detailed permission is sought for Phase 1 for erection of 452 residential units (Use Class C3), 1,250sqm community floorspace (Use Class F2), 290sqm of flexible office floorspace (Use Class E), 395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), new publicly accessible open space and associated access, servicing, parking, landscaping works including tree removal, refuse/recycling and bicycle storage, energy centre and works

Outline permission (with appearance and landscaping reserved) is sought for the remainder of the development ("the Proposed Development")."

9.1.3 This TA has demonstrated that the site is accessible in terms of its proximity to existing social and sustainable transport infrastructure, justifying the principle of mixed used, quality design that helps deliver strategic objectives of Vision Zero, Healthy Streets and the Mayor's Transport Strategy. The assessments have also demonstrated that the impact of the development proposals upon the wider transport network can be accommodated and do not need mitigation or result in a severe impact; therefore, deemed acceptable in accordance with the NPPF.

9.1.4 This TA has outlined in detail how the development proposals have been designed in accordance with and responding to the principles and policies set out in the NPPF, Draft London Plan and Kingston Sustainable Development Plan.

9.1.5 The proposals include new walking and cycling routes and associated public spaces which increases pedestrian and cycling connectivity and permeability, the development has been designed with a focus on improving the pedestrian and cyclist experience for both users of the site and those passing by. It is therefore considered to assist in meeting the Mayor's strategic objectives of Healthy Streets, Vision Zero and those set in the Mayor's Transport Strategy.

9.1.6 The masterplan delivers a significant improvement in the sites accessibility. Residents will benefit from improved connectivity to a range of sustainable transport modes that can be accessed through a high-quality walking and cycling network. The proposals include a

number of significant enhancements to the pedestrian and cycling environment within the immediate vicinity of the site, including links into the proposed Go Cycle Scheme on Cambridge Road. The proposals are therefore considered to have a positive impact on the local walking and cycling networks.

9.1.7 The TA demonstrates that the impact of the masterplan actually results in a net reduction of trips to / from the site. This is due to the proposals removing the existing free parking available to all uses. The proposed development does redistribute vehicular trips across the site under the masterplan. At the request of RBK junction modelling has been undertaken for the two junctions onto Cambridge Road. Both operate within capacity with no queueing.

9.1.8 The proposals result in a decrease in vehicular traffic to the site which is a benefit to the highway network.

9.1.9 The overall impact of the development upon the London wide transport networks is not considered to be significant. The proposals will result in increases to the number of trips on the local public transport networks. However, given the improved PTAL rating across much of the and the wide range of services and destinations which can be accessed from within a short walk from the site, once these trips have been distributed across the wide range of services and destinations, the overall impact of the development is not considered to be significant.

9.1.10 In summary, this TA outlines how the proposed redevelopment of Cambridge Road Estate will not result in any material impact to the public transport and road networks within the vicinity of the site, subject to the mitigation measures proposed which are largely delivered through the delivery of high quality streetscape and public space design. The significant improvements to the walking and cycling networks within the immediate vicinity of the site are considered to result in a positive impact to both new and existing users of the site whilst the proposals do not forecast any impact on the highway network. Accordingly, the development proposals are considered to be acceptable, compliant with policy and result in an overall positive impact to the transport networks within its vicinity.

Table 9.1 Conclusion Summary

	Key Transport Impacts/Issues	Proposed Solutions/Mechanisms
Site and Surroundings	The site is extremely well located in terms of local walking, cycling and public transport facilities.	The proposed development will complement the existing transport facilities within the vicinity of the site maximising the opportunities for travel by sustainable modes.
	The existing site has an inefficient servicing strategy with multiple servicing access points.	The proposed development significantly increases the efficiency of servicing activity whilst limiting the impact of activity on the local highway network through internalised loading bays with set points of access.
ATZ	Cambridge Rd Estate and some of the routes to nearby key destinations currently have low scores on Heathy Streets indicators.	The proposed development seeks significant improvements the estate which will result in significant improvements to Healthy Streets indicator scores.
London-wide Network	Increase in trips generated by the proposed development.	The increases in trips forecast by the proposed development are concentrated on public transport networks which provide frequent, reliable journeys with a wide range of destinations.
		The increases in trips forecast by the development on the walking and cycling networks will be mitigated by the significant improvements to the internal site design, the new public realm delivered by the development and links to proposed cycle infrastructure on Cambridge Rd.
	The existing site has limited cycle parking provision and/or quality of access for cyclists.	The proposed development will provide cycle parking provision in accordance with the Draft London Plan designed to LCDS standards.
	The existing site provides multiple car parking spaces which generate vehicle trips.	The proposed development provides less parking, alongside the Travel Plan and permit/CPZ stipulations, the development is forecast to result in a reduction in vehicle trips.
Construction	Additional construction traffic will be generated on the highway.	Introduction of the Construction and Logistics Plan measures will reduce the impact of construction activity.

FIGURES

DRAWINGS

Drawing 19157-MA-XX-XX-DR-C-0050 – P01: Existing Highway Extent

Drawing 19157-MA-XX-XX-DR-C-0051 – P01: Proposed Stopping Up Area

Drawing 19157-MA-XX-XX-DR-C-0100 – P01: Visibility Splay (Block C Access)

Drawing 19157-MA-XX-XX-DR-C-0101 – P01: Refuse Vehicle (Blocks B & E)

Drawing 19157-MA-XX-XX-DR-C-0102 – P01: 7.5t Box Van (Blocks B & E)

Drawing 19157-MA-XX-XX-DR-C-0103 – P01: Panel Van (Blocks B & E)

Drawing 19157-MA-XX-XX-DR-C-0104 – P01: Fire Appliance (Blocks B & E)

Drawing 19157-MA-XX-XX-DR-C-0105 – P01: Visibility Splay (Block B & E Access)

Drawing 19157-MA-XX-XX-DR-C-0106 – P01: Refuse Vehicle (Blocks C)

Drawing 19157-MA-XX-XX-DR-C-0107 – P01: 10 & 12m Rigid (Blocks C)

Drawing 19157-MA-XX-XX-DR-C-0108 – P02: 7.5t Box & Panel Van (Blocks C)

Drawing 19157-MA-XX-XX-DR-C-0109 – P01: Carriageway Amendments (Blocks C)

APPENDICES

APPENDIX A – ILLUSTRATIVE MASTERPLAN

APPENDIX B – PLANNING POLICY

A1 Overview

This section identifies planning policy that is relevant to the application and describes how they are relevant to the proposed development.

A2 National Policy

A2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) as of July 2019 sets out Government planning policy, provides a framework within which local planning policies should be produced, and is a material consideration in planning decisions.

With regards to transport, the NPPF states that: *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

Paragraph 110 continues that applications for development should:

- *"Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second- so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
- *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- *Create places that are safe, secure, and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
- *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
- *Be designed to enable charging of plug-in and ultra-low emission vehicles in safe, accessible and convenient locations."*

Paragraph 111 states that: *"All developments that will generate significant amounts of movement should be required to provide a travel plan and should be supported by a transport statement or transport assessment."*

A3 Regional & Local Policy

A3.1 The London Plan (2016)

The London Plan sets out the integrated economic, environment, transport, and social framework for the development of London over the next 20-25 years. The London Plan was adopted in January 2011, and has subsequently been revised a number of times, with the most recent being the Minor Alterations to the London Plan 2015, which were published in March 2016.

Specific transport policies are described within Chapter 6 of the London Plan. Without reproducing the detailed content of each policy, integrating transport and development is the central theme, with an aspiration to encourage development that reduces the need to travel, especially by car, and locating developments that generate high levels of trips at locations with either current or committed high levels of accessibility to public transport, cycling and pedestrian networks.

The London Plan identifies that development proposals should support sustainable travel through the inclusion of appropriate cycle parking and facilities, high quality pedestrian environments and details car parking standards for various forms of land use.

Relevant Policies are summarised below:

Policy 6.3 – Assessing effects on development on transport capacity.

- Requires TA's to support development in accordance with TfL's Transport Assessment Best Practice Guidance for major planning applications; and
- Development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, are fully assessed. Developments should not adversely impact safety on the transport network.

Policy 6.9 – Cycling.

- Developments should provide secure, integrated and convenient cycle parking in accordance with the London Cycle Design Standards.

Policy 6.10 – Walking.

- Pedestrian environment should be high quality with an emphasis on the quality of the pedestrian and street space by referring to Transport for London's Pedestrian Design Guidance.

Policy 6.13 - Parking.

- Parking should be in accordance with the maximum standards.
- In addition, all developments in London must ensure that 1 in 5 spaces provide electrical charging points to encourage the uptake of electric vehicles.
- Provide parking for disabled people in line with the parking standards.
- Meet minimum cycle parking standards.
- Provide the need for businesses for delivery and servicing.

Policy 6.14 - Freight.

- Opportunities to minimise congestion, impacts and road safety should be sought. DSP's, CLP, and integration with TP's is required.
- Developments that generate high numbers of freight movements should be located close to major transport routes.
- Increase the use of the Blue Ribbon Network for freight transport will be encouraged.

A3.2 The New Draft London Plan (2019)

The Draft New London Plan has been developed and public consultation on this document closed on 2nd March 2018. The document is expected to be adopted towards the end of 2020.

Chapter 10 of this document deals with transport and Policy T1 sets the overarching approach to transport strategy for the city. Policy T1 states that development Plans and development proposals should support the delivery of the Mayor's strategic target of 80 per cent of all trips in London to be made by foot, cycle, or public transport by 2041, and the proposed transport schemes set out in Table 10.1.

Policy T1 continues, "*All development should make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London's transport networks and supporting infrastructure are mitigated.*"

The Draft London Plan additionally includes a new concept; 'Healthy Streets'. These are defined by 10 indicators as follows:

- Pedestrians from all walks of life.
- Easy to cross.
- Shade and shelter.
- Places to stop and rest.
- Not too noisy.
- People choose to walk, cycle, and use public transport.
- People feel safe.
- Things to see and do.
- People feel relaxed.
- Clean air.

Policy T2 states that development proposals should demonstrate how they will deliver improvements that support the ten Healthy Streets Indicators in line with Transport for London guidance; reduce the dominance of vehicles on London's streets whether stationary or moving; and be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport.

'Policy T4 – Assessing and mitigating transport impacts' states that development plans and development proposals should reflect and be integrated with current and planned transport

access, capacity and connectivity. This requires TA's to focus on the healthy streets approach, also requires TA & other supporting documents to be submitted with development proposals.

'Policy T5 – Cycling' and 'Policy T6 – Car Parking' states that parking should be provided in accordance with parking standards set out in table 6.3 of the new London plan.

Finally, Policy T7 - Deliveries, servicing and construction states that developers are required to facilitate deliveries on-site (off-street) and allow for deliveries outside of peak hours and in the evening or overnight.

A4 Local Policy

A4.1 Kingston Local Plan 2015-2030

Kingston Core Strategy includes both strategic and development management policy guidance. The document is a guide for developments over the next 15 years to ensure that all new developments are sustainable and reduce the reliance on the private car.

Relevant local plan policies include:

Policy DM8 – Sustainable Transport for New Development
• Require robust & effective travel plans. • Prioritise needs of pedestrians and cyclists first and provide facilities for cyclists including showers, lockers and secure, convenient cycle parking, in accordance with minimum standards. • Require development to make contributions towards sustainable transport improvements and initiatives in line with SPD/CIL.

Policy DM9 – Managing Vehicle Use for New Development.
• Require TA's to be submitted in line with TfL guidance. • Developments should comply with parking standards and restrict parking permits for new residents. • Provide car club and electric vehicle infrastructure where appropriate in accordance with minimum standards.

A4.2 Sustainable Transport SPD (May 2013)

This SPD has been published to ensure that development in the Borough does not adversely impact on, and where possible, enhances the safety, efficiency and sustainability of the transport network. The SPD does not create policy, rather it helps to guide the implementation of the Core Strategy policies and will be used to consider the sustainable transport aspects of planning applications.

In terms of car parking, the SPD directs the provision of car parking standards back to the London Plan, under table 6.13.

However, the document does set out the cycle parking standards for new developments, these are summarised as follows:

- **A1 Food Retail:** -minimum of 2 spaces + 1 space per 350m^2
- **A1 Non-Food Retail:** - minimum of 2 spaces + 1 space per 500m^2
- **A3 Restaurants + Cafes:** - 1 space per 20 seats with a minimum of 2 spaces
- **C3 Dwellings:** - 1 space per 1-2 bed unit; 2 spaces per 3 or more bed unit

The car parking standards that are to be followed at the development site have been set out in **Table 9.2**:

Table 9.2 Car Parking Standards

C3	Maximum Parking Standards
1-2 Bedrooms	Less than 1 per unit
3 Bedrooms	Up to 1.5 per unit
4 or more Bedrooms	Up to 2 per unit

A4.3 Cambridge Road Estate – Strategic Development Brief

The council's vision for the redevelopment of Cambridge Road Estate is drawn from the residents needs and aspirations, the project team's analysis of the estate – people and place and the council's vision for Kingston as a whole. This document has several visions and objectives which are to be incorporated with the development. One of these visions is to *"Promote sustainable forms of travel and healthy living."*

The accompanying objectives are as follows:

- A car-lite scheme with low car parking ratio.
- Provision of supporting infrastructure for cycle use across the estate, including potential local cycle route through the estate.
- Provision of supporting infrastructure for car share and car hire across and where appropriate in the vicinity of the estate.
- Comprehensive package of measures to discourage car ownership and usage. Encourage use of walking, cycling and public transport.
- Provision of supporting infrastructure for Go Cycle route along Cambridge Road.
- Implement principles of Mayor's 'Healthy Streets' and 'Liveable Neighbourhood' initiative.
- Make representations to the local transport authority and TfL to invest in the public transport accessibility of the local area.

APPENDIX C – SCOPING NOTES

APPENDIX D – PTAL OUTPUT REPORT

APPENDIX E – PARKING BEAT REPORT

APPENDIX F – PEDESTRIAN LEVEL OF COMFORT AND HEALTHY STREETS TECH NOTE

APPENDIX G – EXISTING RESIDENTIAL TRICS OUTPUT

APPENDIX H – PROPOSED C3 PRIVATE HOUSING TRICS OUTPUT

APPENDIX I – PROPOSED C3 AFFORDABLE HOUSING TRICS OUTPUT

APPENDIX J – PROPOSED A1 RETAIL TRICS OUTPUT

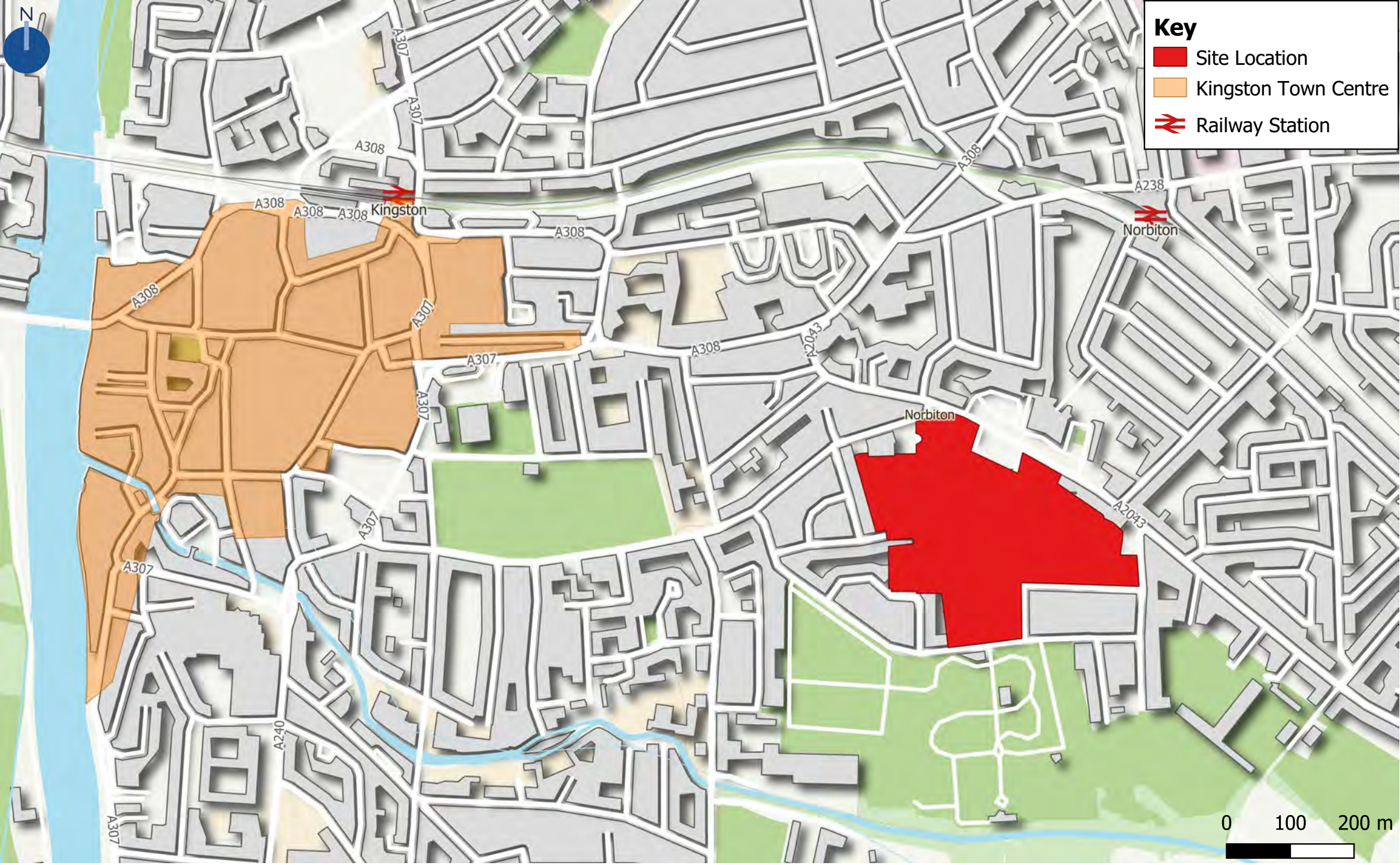
APPENDIX K – PROPOSED B1 WORKSPACE TRICS OUTPUT

APPENDIX L – PROPOSED A3 CAFÉ (COMMUNITY USE) TRICS OUTPUT

APPENDIX M – PICADY OUTPUTS FOR ST PETERS STREET

APPENDIX N – PICADY OUTPUTS FOR K2 ACCESS

FIGURES



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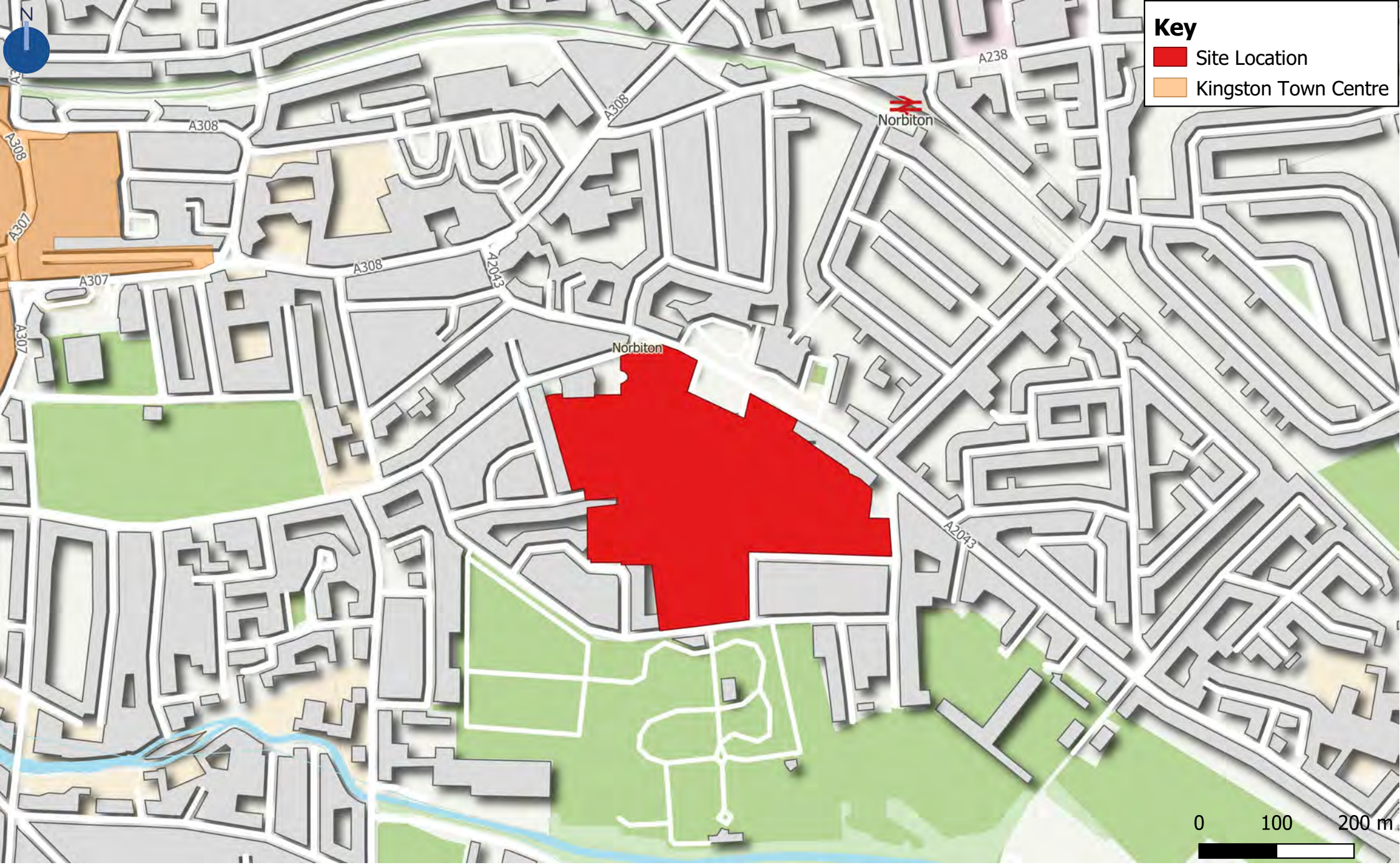
Cambridge Road Estate
Figure 1.1: Site Context Plan



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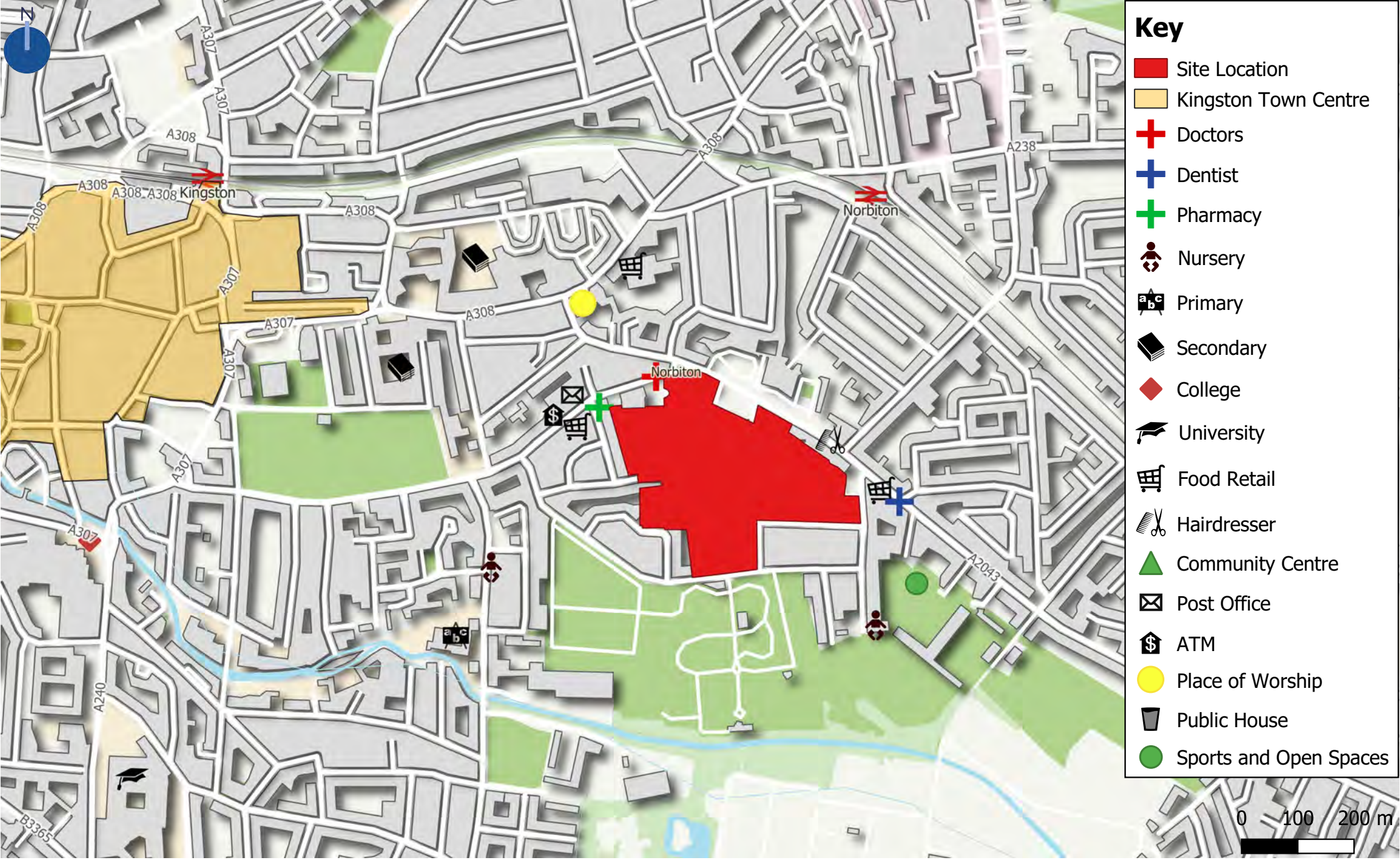
Cambridge Road Estate
Figure 3.1 Site Location Plan



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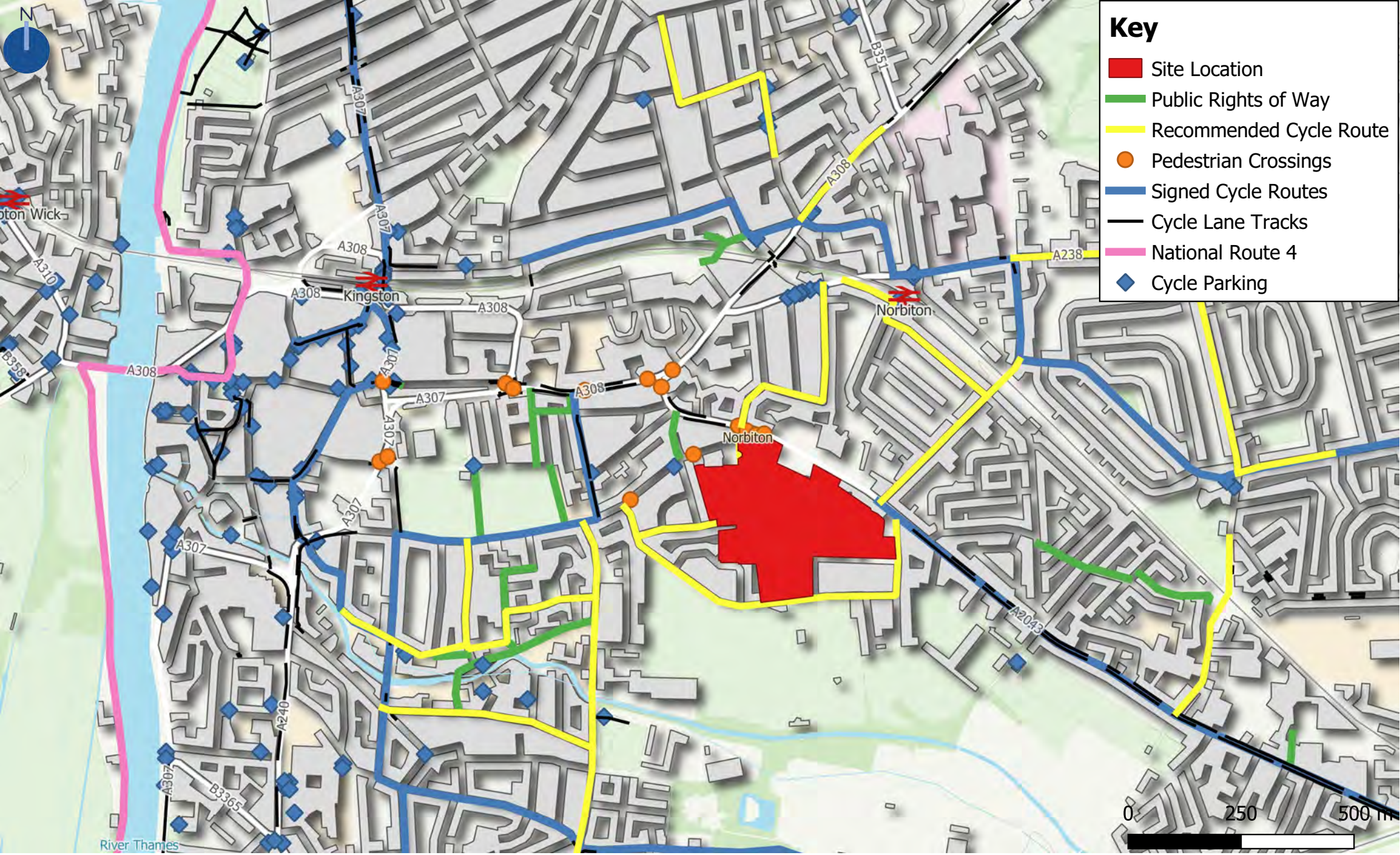
Cambridge Road Estate
Figure 3.2: Local Facilities Plan



Cambridge Road Estate

Figure 3.3 Pedestrian and Cycle Infrastructure Plan

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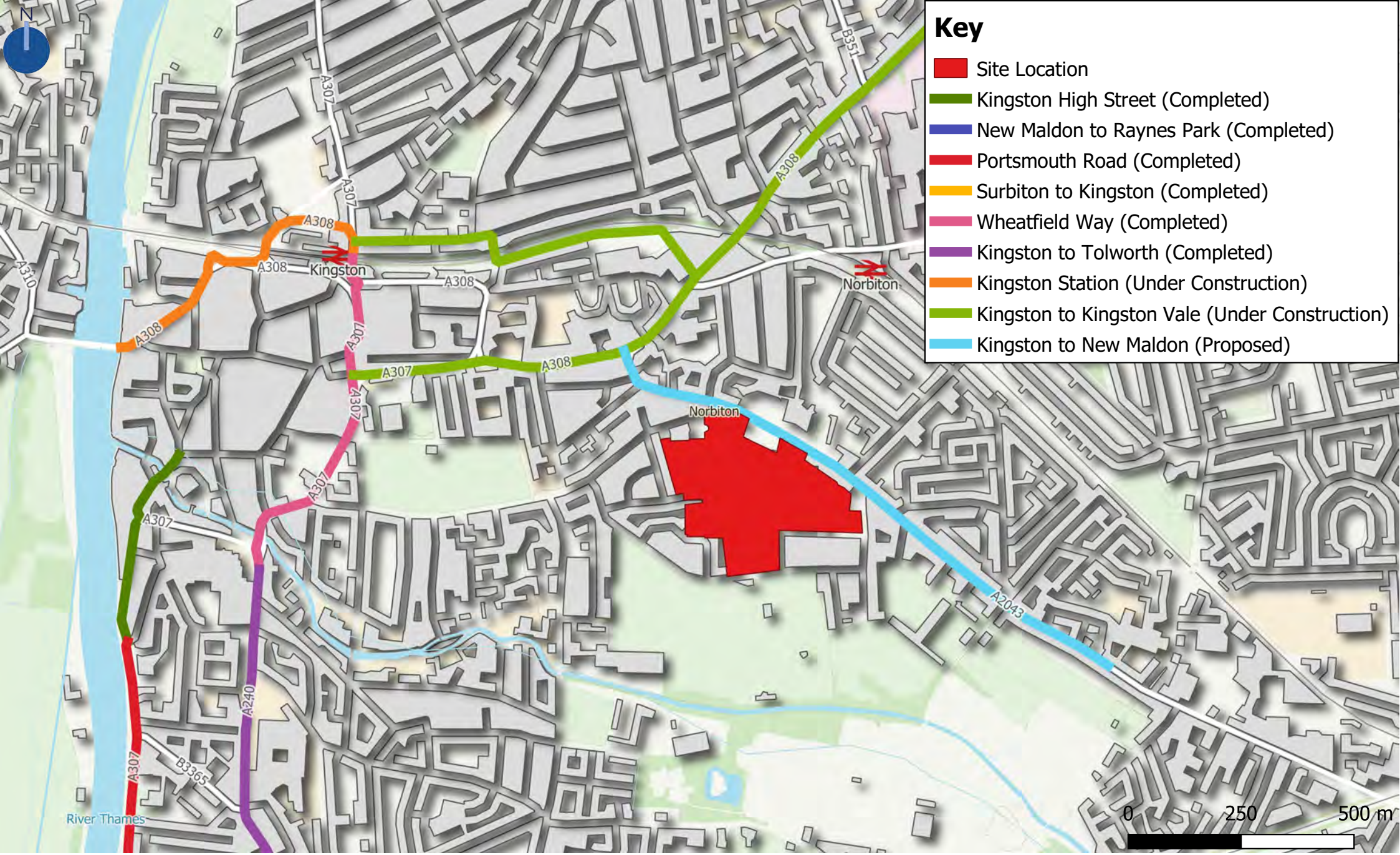

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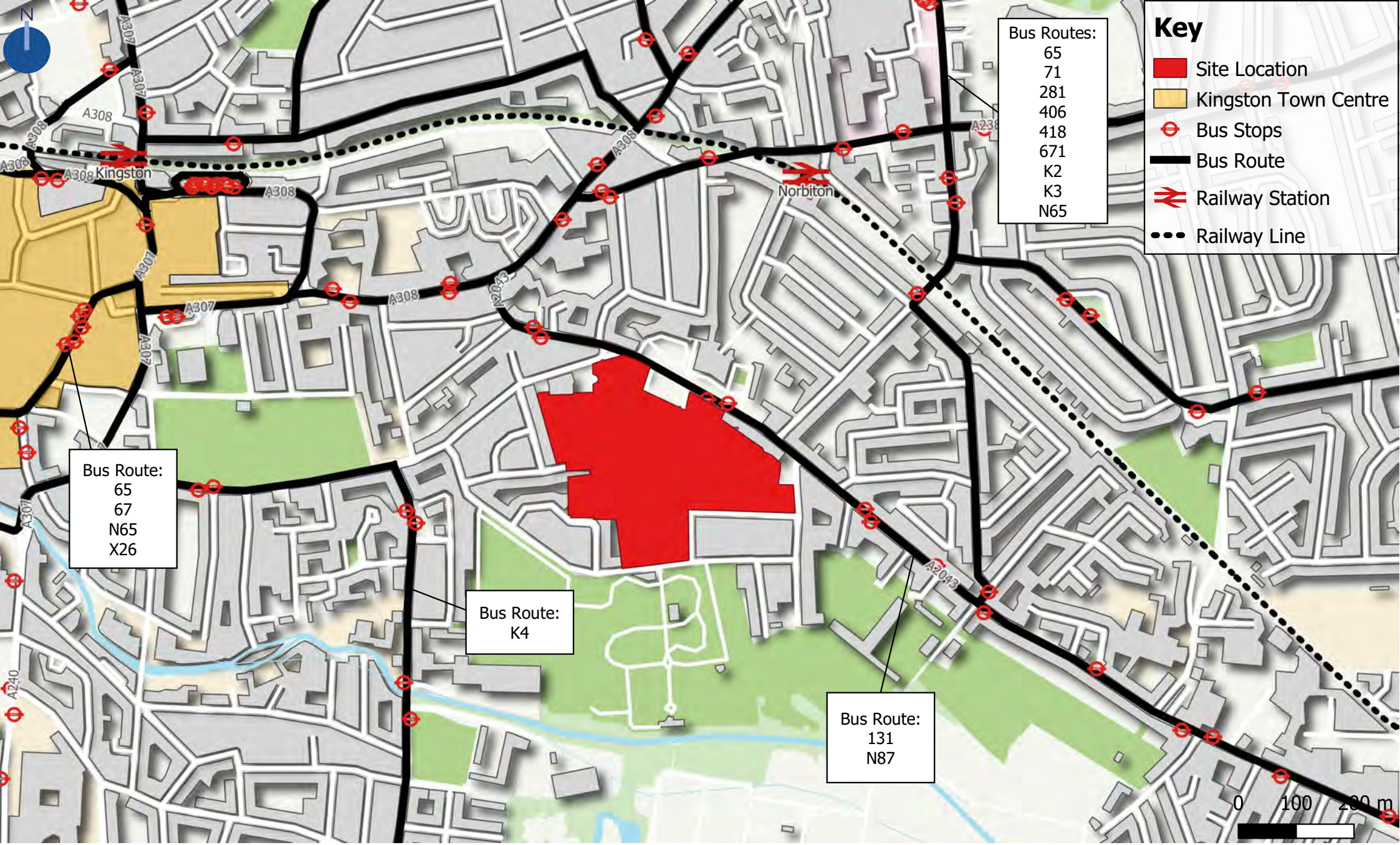
Cambridge Road Estate
Figure 3.4 Go Cycle Scheme



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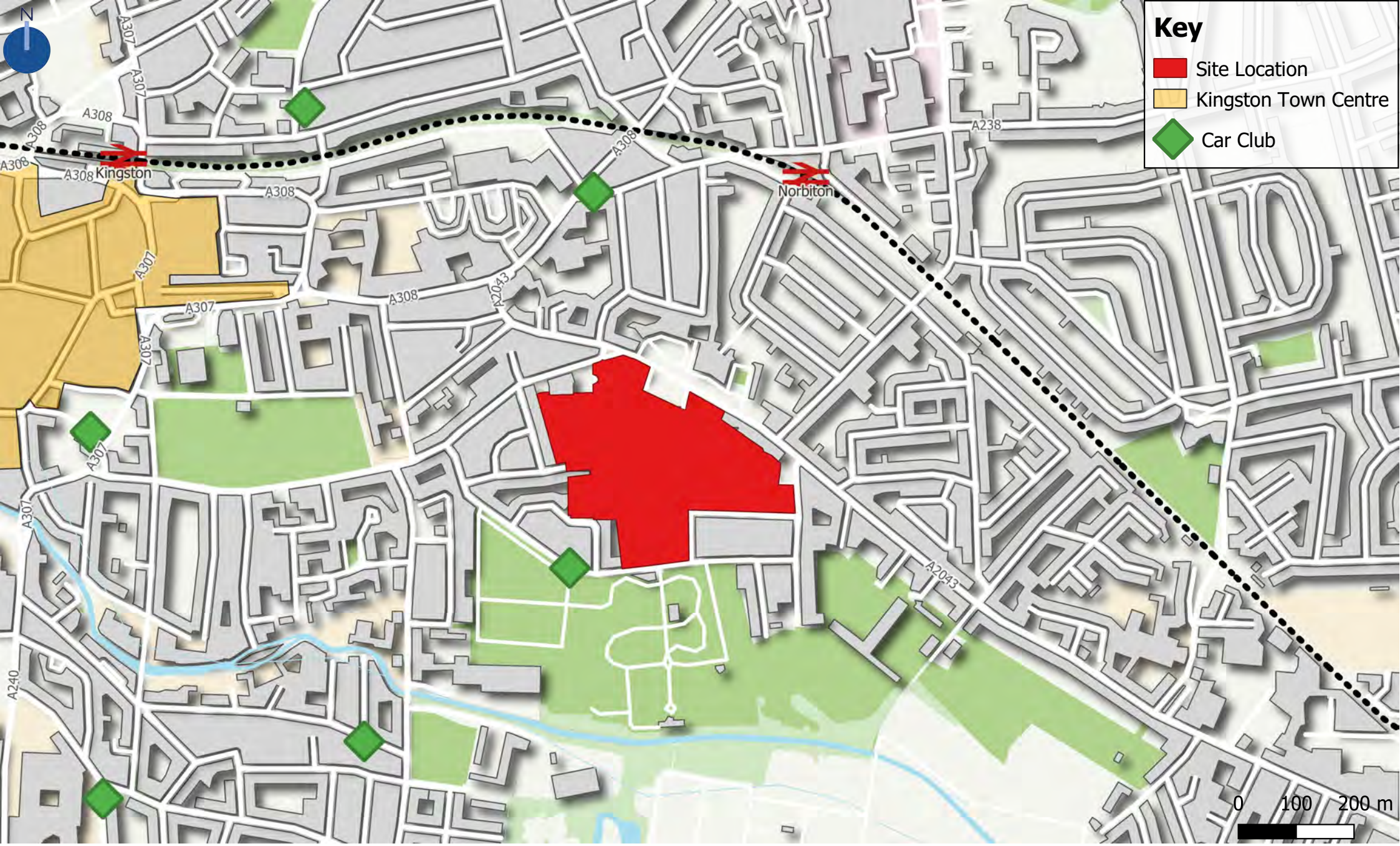
Cambridge Road Estate
Figure 3.5 Public Transport Plan



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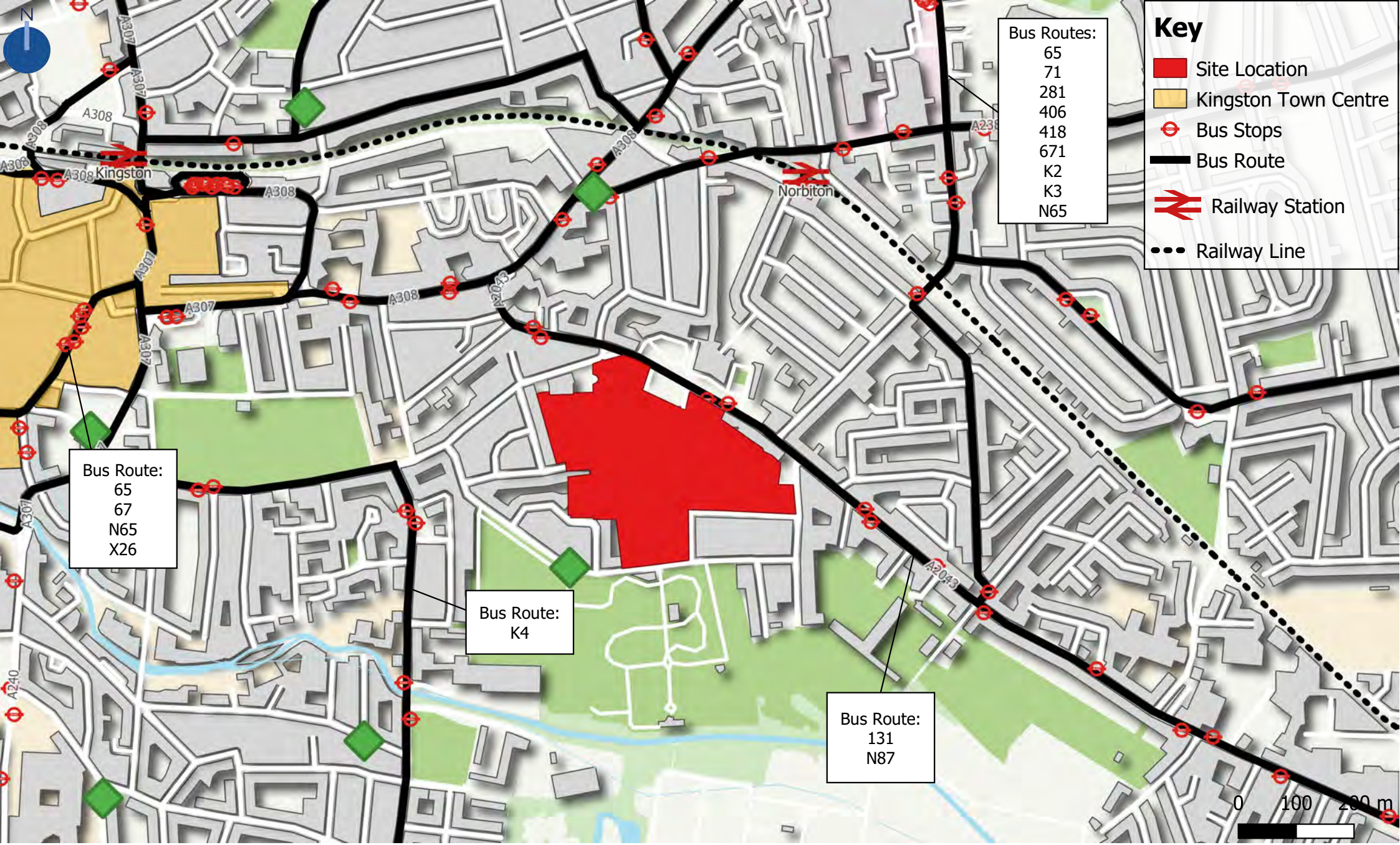
Cambridge Road Estate
Figure 3.6 Car Club Locations



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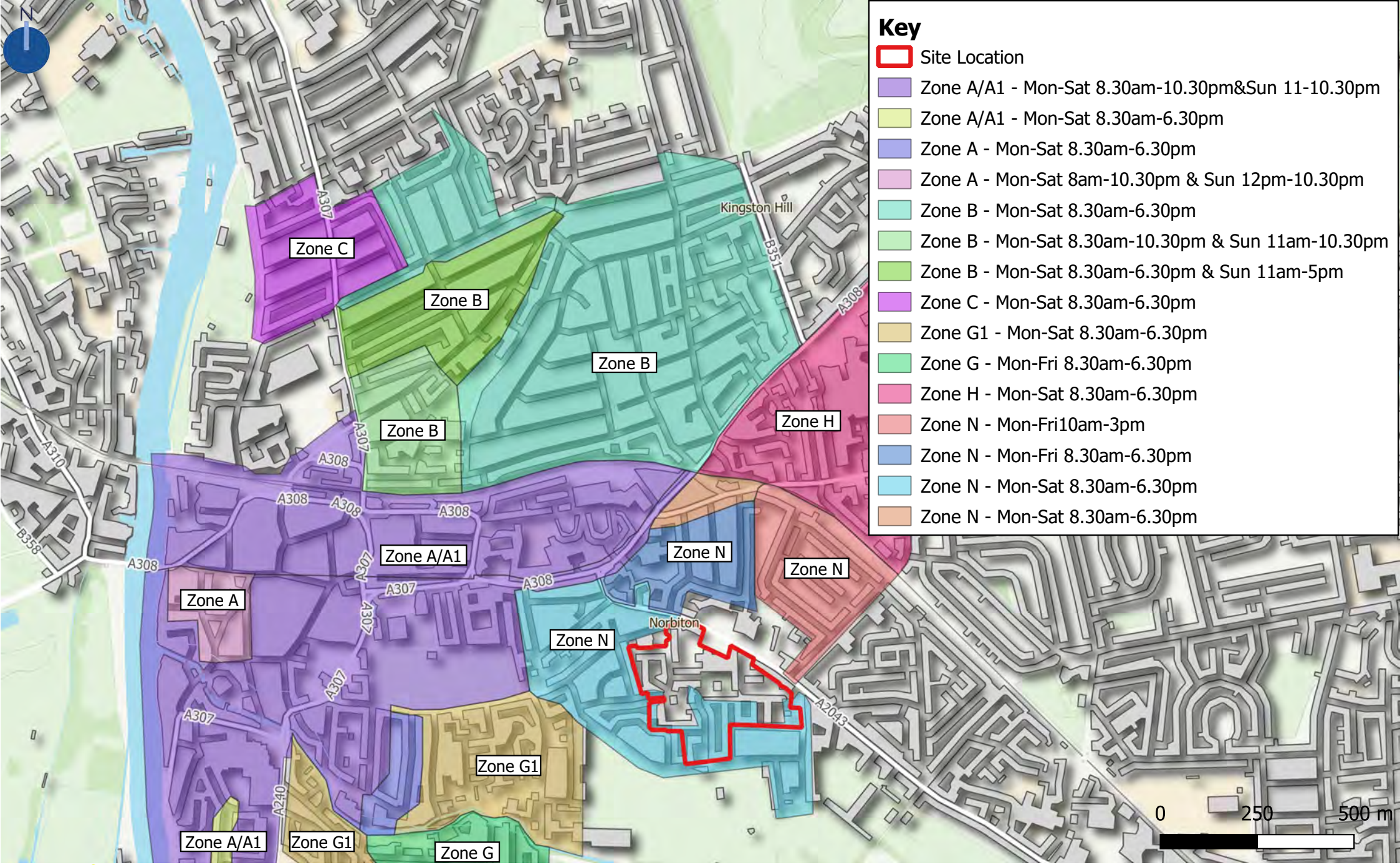
Cambridge Road Estate
Figure 3.6 Public Transport Plan



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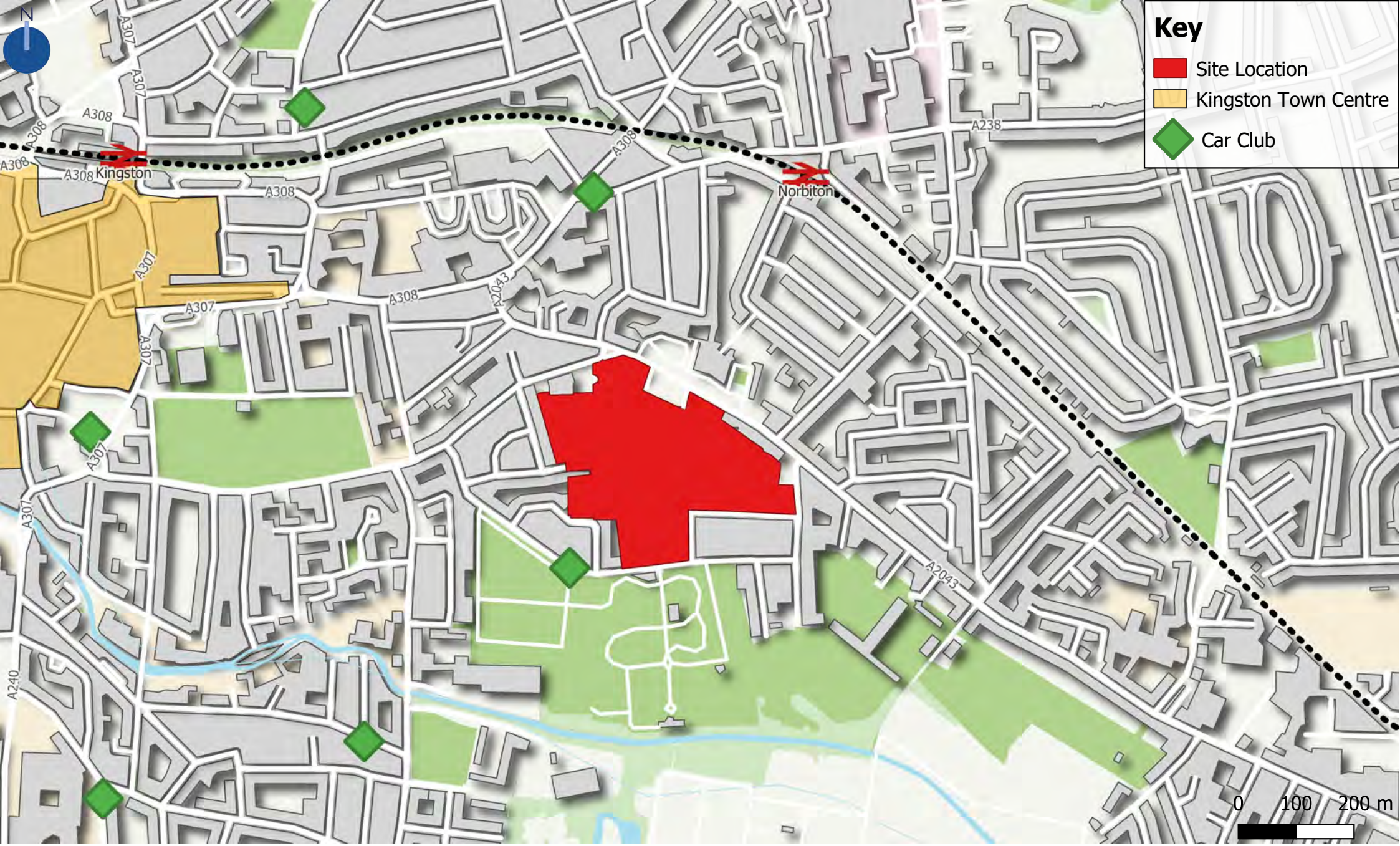
Cambridge Road Estate
Figure 3.7: Existing CPZ Zones



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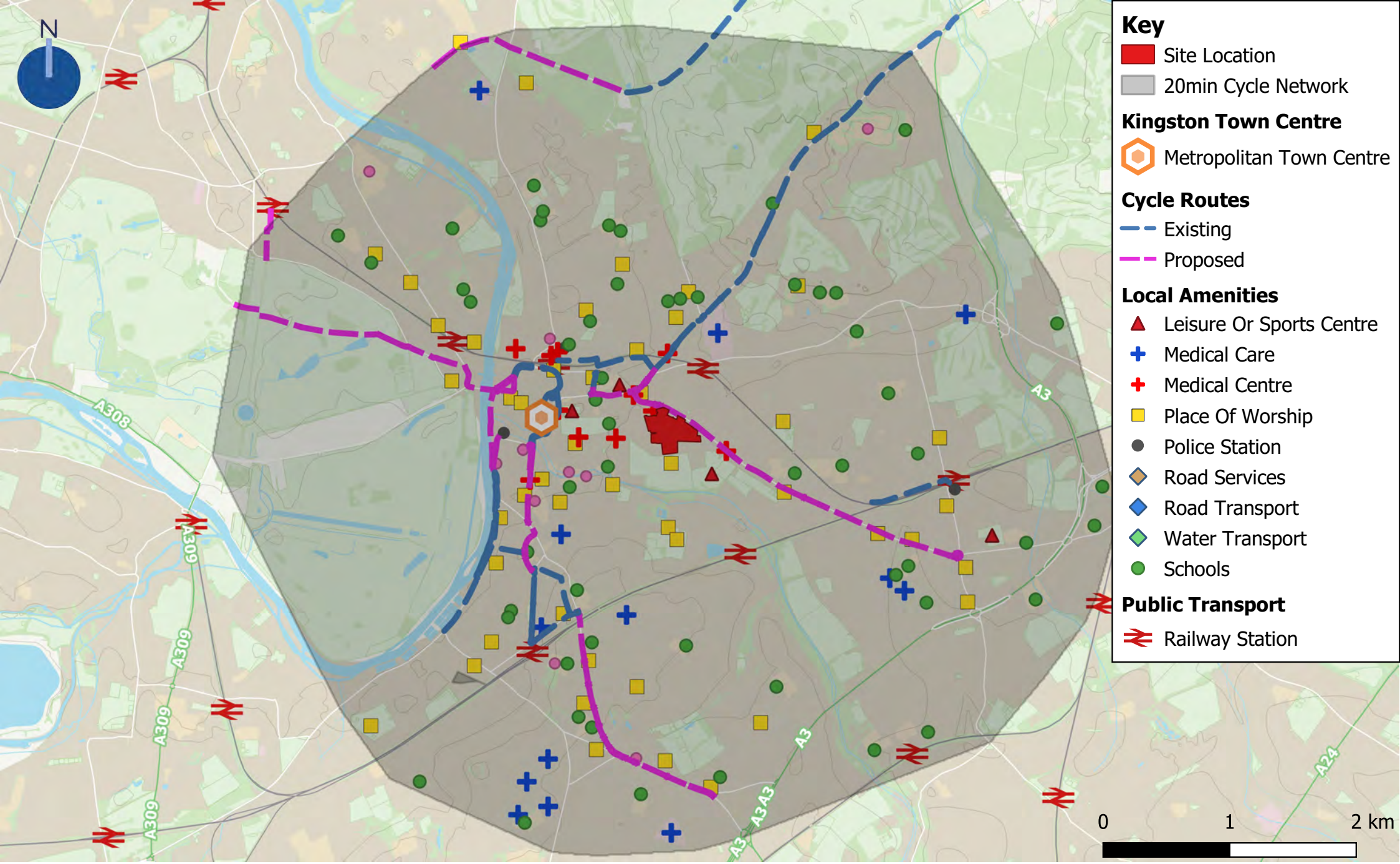
Cambridge Road Estate
Figure 3.8 Car Club Spaces



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Cambridge Road Estate
Figure 5.1 Active Travel Zone