

Figure 2-1: Cycle Routes Surrounding the Development Site (Local Level View)

2.2.5 In terms of strategic access there is an existing cycle route along the A316 providing an important link between the site an Richmond town centre to the south west and towards Hammersmith in the north east. This comprises of a mix of shared footway facility, for example across Chiswick Bridge, and segregated off road facility, to the west of the South Circular.

2.2.6 Figure 2-2 shows the cycle routes serving the wider area.

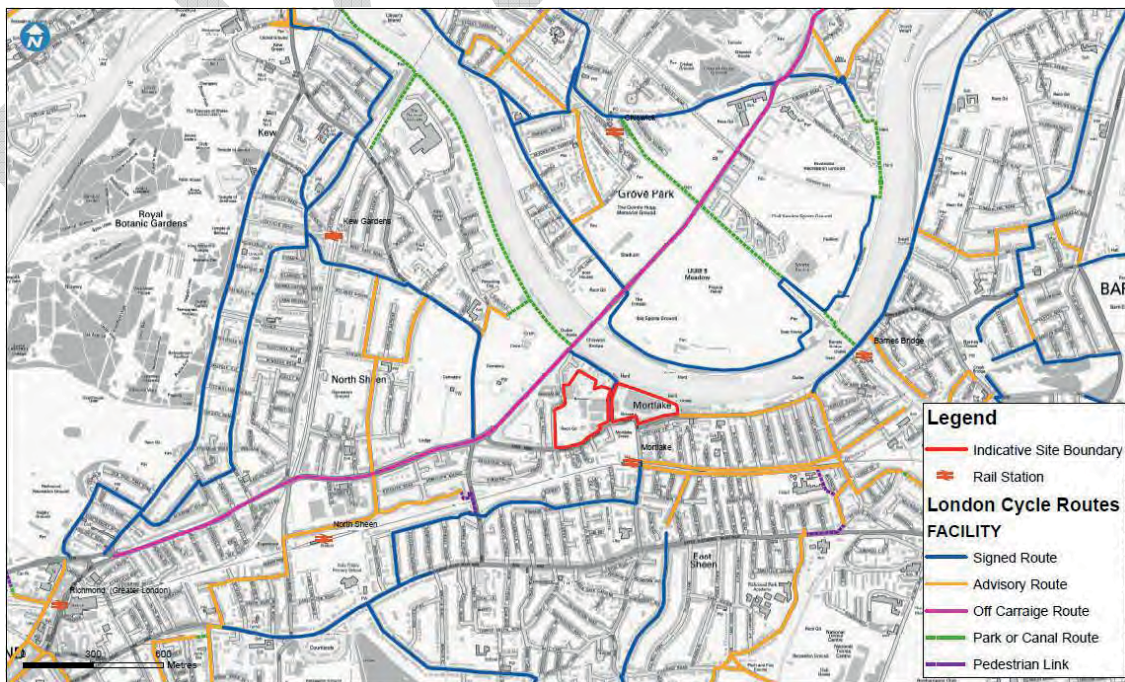


Figure 2-2: Cycle Routes Surrounding the Development Site (Strategic View)

Public Transport Network

Public Transport Accessibility Level

- 2.2.7 Public Transport Accessibility Level (PTAL) is a measure of the accessibility of a location to the public transport network. PTAL considers the walking time to public transport access points, the reliability of the services, the number of services available and the average waiting time.
- 2.2.8 The PTAL is categorised in six levels, 1 to 6, where 1 represents a 'very poor' and 6 an 'excellent' level of accessibility.
- 2.2.9 TfL's online PTAL calculation tool (www.webptals.org.uk) has been used to calculate the PTAL of the Site, which is rated as 2, representing a poor level of accessibility to public transport services.

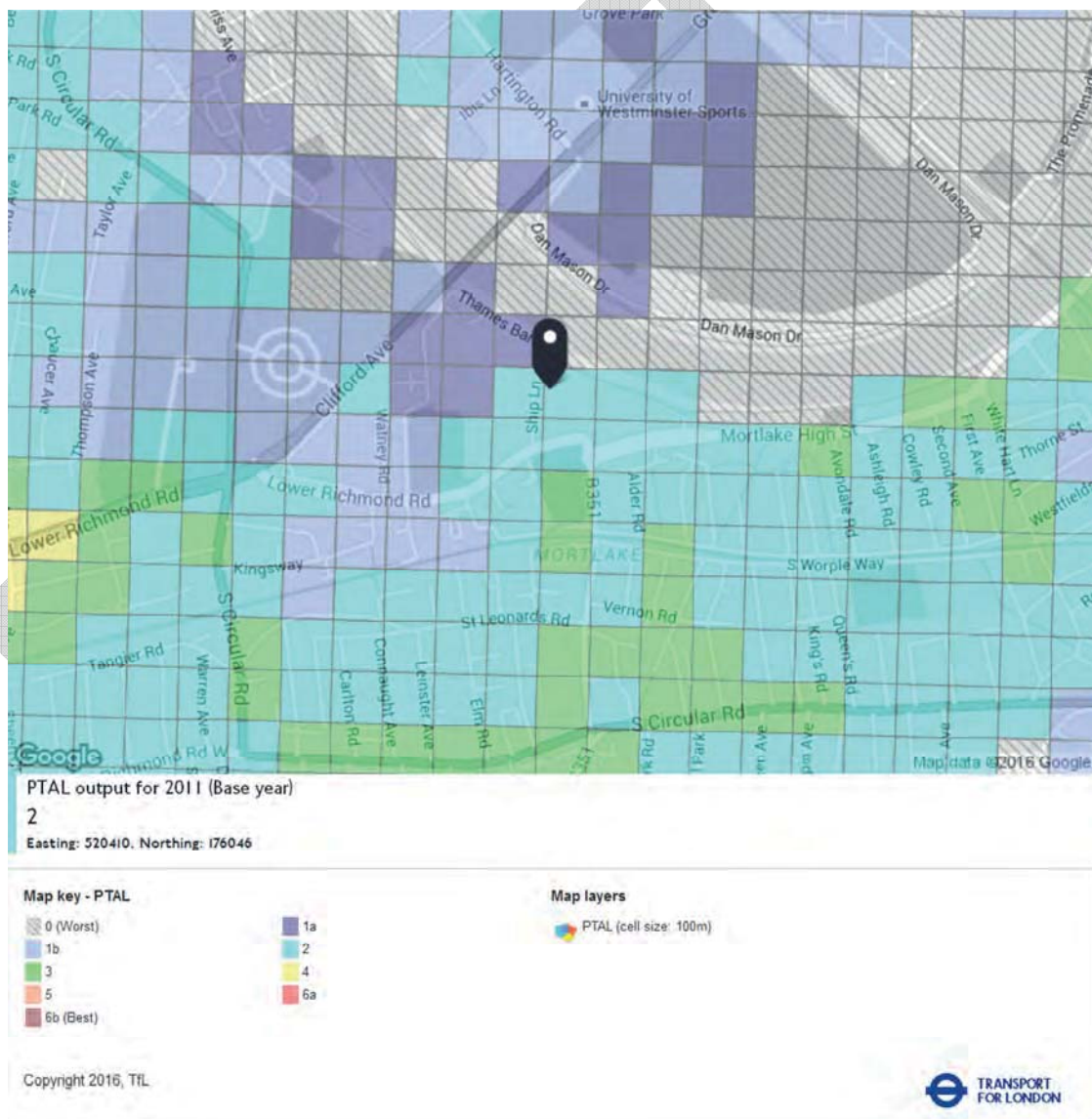


Figure 2-3: PTAL of the Area surrounding the Development Site

Bus Services

2.2.10 The closest bus stops to the application site are situated to the south of the site along Lower Richmond Road to the east (Stop Z) and west of Ship Lane (Stop N).

2.2.11 Figure 2-4 shows the location of bus stops in close proximity of the development site.

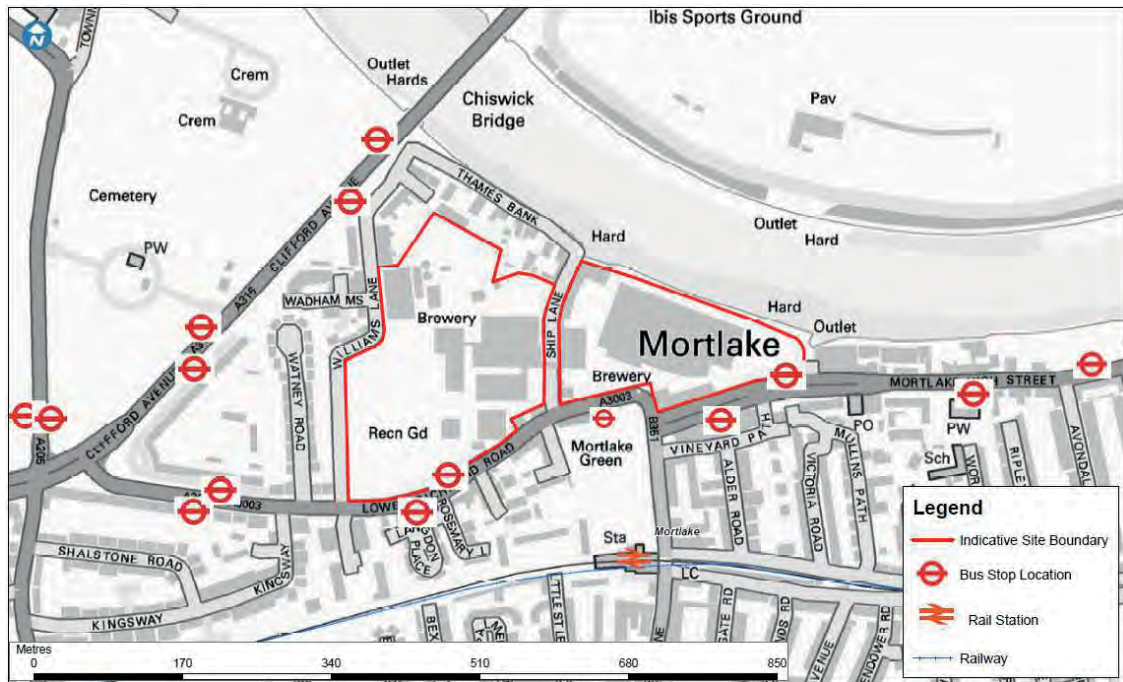


Figure 2-4: Bus Stop Locations

2.2.12 Table 2.1 shows the bus routes available within an 850m walking distance of the site. It should be noted, however, that TfL recommends a maximum walking distance of 640m to bus stops. Hence, the bus routes highlighted in grey are not accounted for in the PTAL rating of the site.

2.2.13 However, during preliminary discussions with LBRuT Highways it was considered that bus route 209 could in the future serve the proposed development site.

Table 2.1: Bus Routes and Peak Hour Frequencies

Bus Route No.	Route (towards)	Nearest Bus Stop to Site	Location of Bus Stop	Approx. Walking Distance to Centre of Site	Approximate Frequency (Services per Hour)	
					AM Peak Hour	PM Peak Hour
419	George Street (Richmond)	Ship Lane Stag Brewery (Stop Z)	Lower Richmond Road	160m (2min)	4	4
	Hammersmith Bus Station	Ship Lane Stag Brewery (Stop N)		170m (2min)	4	4
190	George Street (Richmond)	Thames Bank (Stop R)	Clifford Avenue	450m (6min)	3	4
	Empress State Building / W Brompton Station	Thames Bank (Stop J)		400m (5min)	4	4
209*	Hammersmith Bus Station	Avondale Road Mortlake (Stop S)	Mortlake High Street	850m (11min)	14	14
R68	Kew Retail Park	Chalkers Corner (Stop C)	South Circular Road	800m (10min)	4	4
	Hampton Court Station	Chalkers Corner (Stop F)		800m (10min)	4	4
Total (within recommend walking distance)					15	16
Total (within 850m walking distance)					37	38

*route starts/finishes in Mortlake, thus only one direction included

National Rail Services

2.2.14 The closest National Rail station to the application site is Mortlake, which is situated approximately 400m (5min walk time) to the south of the site. The station is served by 'South West Trains' services between London Waterloo and Twickenham, continuing either via Hounslow and Chiswick on the Hounslow Loop or Kingston and Wimbledon on the Kingston Loop, back to Waterloo.

2.2.15 Table 2.2 shows the peak hour rail service frequencies of services departing Mortlake station.

Table 2.2: Rail Services Peak Hour Frequencies

Direction (towards)	Service Frequency (Services per Hour)	
	AM Peak Hour	PM Peak Hour
Waterloo (Fast)	4	4
Waterloo (via Hounslow)	2	2
Waterloo (via Kingston)	2	2
Total	8	8

2.2.16 The following table shows the journey times from Mortlake station to selected destinations. Interchange at Clapham Junction (rail services), Vauxhall and Waterloo (London Underground services) and Richmond (London Underground and London Overground services) provides access to the wider network of rail services for London.

Table 2.3: Journey Times from Mortlake Rail Station

Direction	Destination	Journey Time
Eastbound	Barnes	3 min
	Wandsworth Town	9 min
	Clapham Junction	11 min
	Vauxhall	18 min
	Waterloo	28 min
Westbound	North Sheen	2 min
	Richmond	4 min
	St Margarets	7 min
	Twickenham	9 min
	Strawberry Hill	13 min
	Teddington	17 min
	Hampton Wick	22 min
	Kingston upon Thames	24 min
	Hounslow	21 min
	Brentford	31 min

London Underground and Overground Services

2.2.17 The closest London Underground station to the application site is Richmond, which provides access to District line services. A total of 7 District line services depart from Richmond in the morning and 6 in the evening peak hour. According to information on TfL’s website, the ‘busiest time at Richmond station is 08:15 – 08:45 Monday to Friday.

2.2.18 Figure 2-5 shows the District Line route map.



Wikipedia

Figure 2-5: District Line Route Map

2.2.19 The following table shows journey times into central London from Richmond via District Line services.

Table 2.4: District Line Journey Times by Selected Destinations

Destination	Time (min)
Hammersmith	00:17
Earl's Court	00:24
Paddington	00:35
Edgware Road	00:38
Victoria	00:34
Westminster	00:38
Embankment	00:40
Blackfriars	00:44

2.2.20 Richmond station, furthermore, provides access to London Overground services between Richmond and Stratford. A total of 4 services depart from Richmond in the morning and 4 in the evening peak hour.

2.2.21 Figure 2-6 shows the Richmond to Stratford Overground map.



TfL Website

Figure 2-6: London Overground -Richmond and Clapham Junction to Stratford

2.2.22 Richmond station can be accessed from the development site via:

- A 4 minute train ride from Mortlake station (plus approximately a 5 minute walk);
- A 10-12 minute bus ride using bus route 190 or 419;
- A 10 minute cycle ride.

Local Highway Network

Vehicular Access to the Mortlake Area

2.2.23 With regard to vehicular access, there are very limited points of access/egress to the area due to the impact of the River Thames and the railway line. Effectively there are 4 points of access/egress to the wider Mortlake area bound by the river to the north, Barnes Bridge to the west, the railway line to the south and Chiswick Bridge/ Clifford Road to the east. These access/egress points are as follows:

- The traffic light controlled junction of Lower Richmond Road onto Clifford Road. This is part of a wider signal junction, which also includes the closely associated South Circular junction. This can be regarded as the main vehicular access route into and out of the area. The junction provides for all movements;
- Sheen Lane across the Mortlake Station level crossing. This in turn accesses onto the A205 Upper Richmond Road (South Circular) by way of a signal controlled junction;
- White Hart Lane across the second level crossing. This again provides access / egress to the A205 South Circular via Priests Bridge, a one-way loop road with separate priority junctions for traffic leaving and entering the South Circular. Together these junctions provide for all movements; and
- A303 under Barnes Bridge.

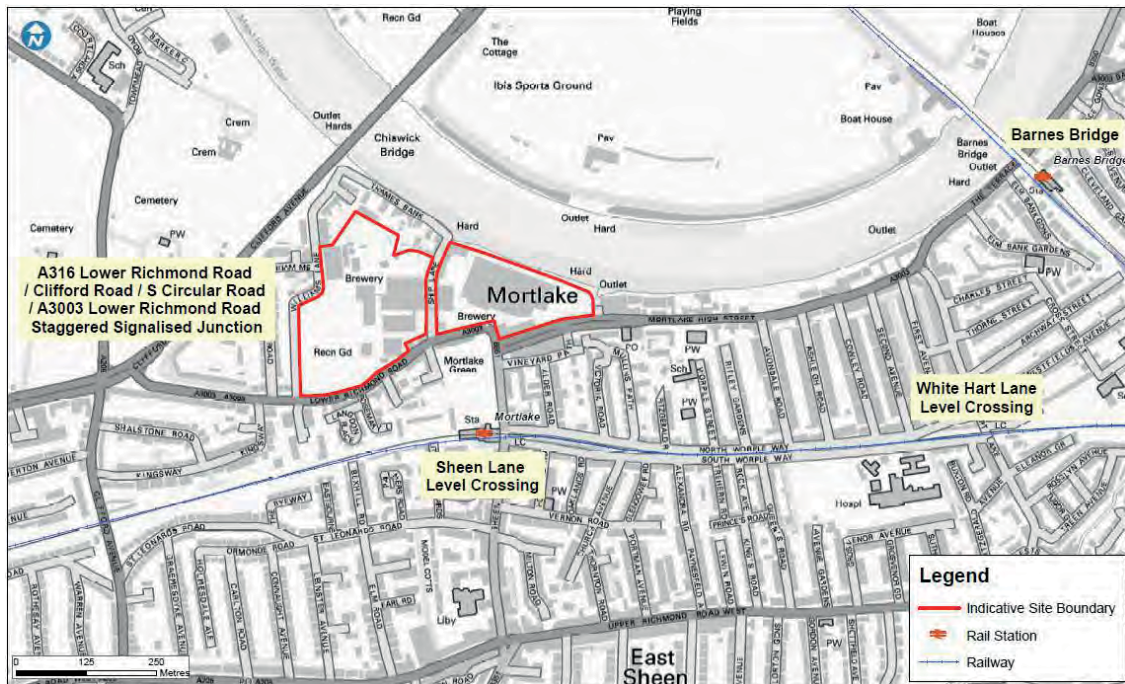


Figure 2-7: Key Highway Network Approaches to the Development Site

Traffic Flows

2.2.24 In order to support the planning application, traffic survey data was collected in June 2016.

2.2.25 The following surveys were undertaken:

- Turning Counts and Queue Length Surveys, from 07:00 to 10:00 and 15:00 to 19:00 at:
 - A316 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction
 - Upper Richmond Road W (S Circular) / Sheen Lane Signalised Junction
 - A3003 Lower Richmond Road / Mortlake High Street / Sheen Lane Roundabout
- Mortlake Station Pedestrian Counts, from 07:00 to 10:00 and 16:00 to 19:00 at:
 - Mortlake station at all 4 access points
- Level Crossing Timings and Queues, from 07:00 to 10:00 and 15:00 to 19:00 at:
 - Mortlake station level crossing on Sheen Lane
- 7 Day Automatic Traffic Counts on:
 - Mortlake High Street, to the east of Lower Richmond Road / Mortlake High Street / Sheen Lane Roundabout

2.2.26 The location of these surveys is shown in Figure 2-8 below.

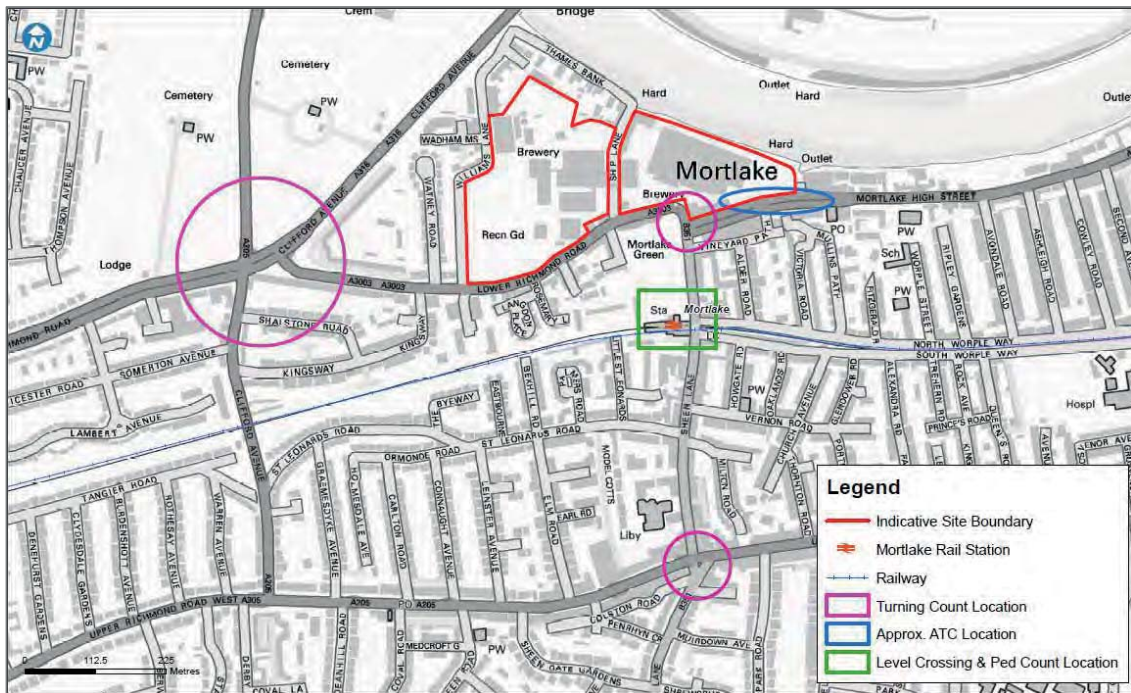


Figure 2-8: Location of Traffic Surveys undertaken in June 2016.

Controlled Parking Zone

- 2.2.27 The development site does not fall within an existing Controlled Parking Zone (CPZ). However, CPZ M (Mortlake and Barnes Common Ward) covers the area adjacent to the east of the development site. CPZ M is operational Mondays and Fridays from 09:00 to 11:00am.
- 2.2.28 Figure 2-9 shows the extent of the existing CPZs in the surrounding area of the development site.

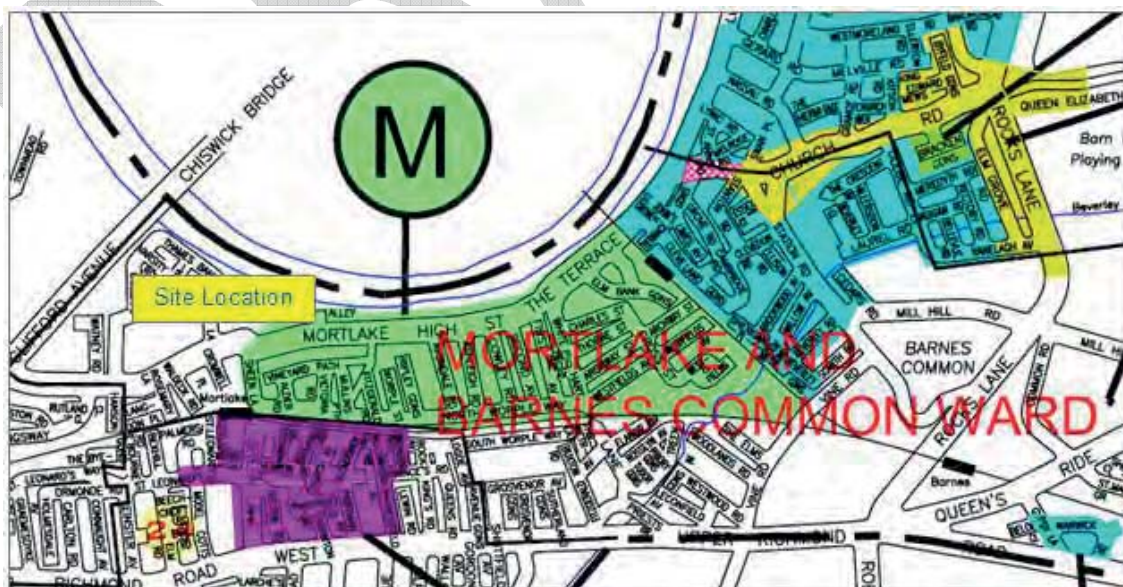


Figure 2-9: CPZs in the Surrounding Area of the Development Site

LBRuT

Car Clubs

2.2.29 Two car club organisations appear to operate within the area. These are the Enterprise Car Club, formerly known as City Car Club and Zip Car.

2.2.30 Figure 2-10 shows the location of Enterprise Car Club, spaces. As can be seen, the closest Enterprise Car Club space is situated to the south of the site on Leinster Avenue, an approximate 1km / 12 min walking distance. One vehicle is available at this location.

2.2.31 Further car club vehicles are available as follows:

- To the west of the site (1.7km / 21 min walking distance) on Cleveland Road – 1 vehicle
- To the north-west of the site (1.8km / 21 min walking distance) on North Road – 2 vehicles
- To the north-west of the site (2km / 25 min walking distance) on Kew Gardens Road – 1 vehicle

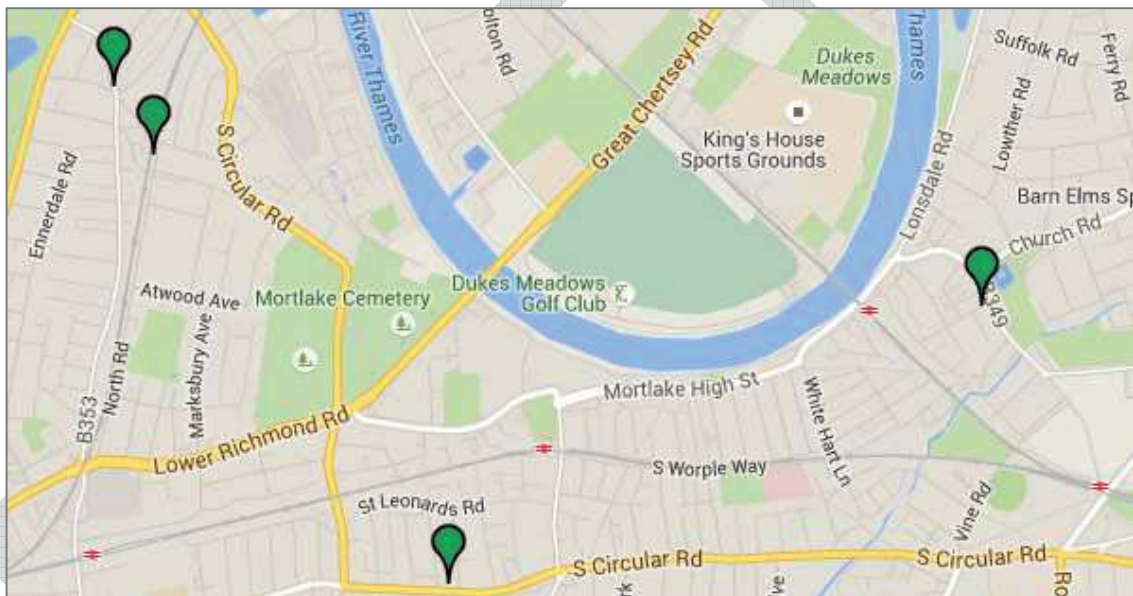


Figure 2-10: Enterprise Car Club Locations close to Application Site

2.2.32 Figure 2-11 shows the location of Zip Car Club spaces. As can be seen, the closest Zip Car Club space is situated on Mortlake High Street adjacent to the southern site boundary. One vehicle is available at this location.

2.2.33 Further car club vehicles are available as follows:

- To the east of the site (550m / 6 min walking distance) on Mortlake High Street – 1 vehicle
- To the east of the site (700m / 9 min walking distance) on Avondale Road – 1 vehicle
- To the east of the site (1.2km / 14 min walking distance) on Elm Bank Gardens – 1 vehicle
- To the east of the site (1.2km / 14 min walking distance) on Thorne Street – 1 vehicle

- To the south of the site (550m / 7 min walking distance) on Vernon Road – 1 vehicle
- To the south of the site (850m / 11 min walking distance) on Thornton Road – 1 vehicle
- To the south-west of the site (1.2km / 14 min walking distance) on Tangier Road – 1 vehicle

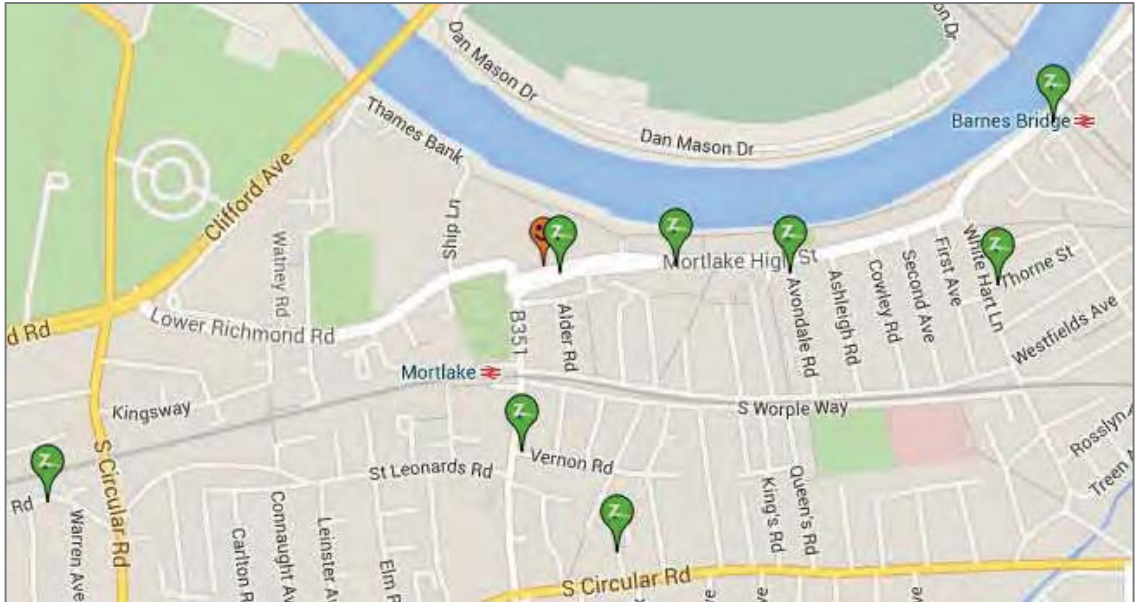


Figure 2-11: Zip Car Club Locations close to Application Site

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3 Development Proposals

3.1 Proposed Development

- 3.1.1 The Proposed Development is the site of the existing Stag Brewery. It is anticipated that the planning application will be a hybrid application, with a detail application for the first phase, which is likely to include the school and an outline application for the remaining phases.
- 3.1.2 The development proposals are not yet fixed but it is anticipated that the development will comprise of a residential led, mixed use development, including community and employment uses in accordance with the Planning Brief for the site which was adopted as Supplementary Planning Guidance in July 2011. At that time it was envisaged that the development would include a new primary school. However, more recently the Local Authority has identified the need for the site to accommodate instead a new secondary school and sixth form college and this is being accommodated within the masterplan.

3.2 Car and Cycle Parking

- 3.2.1 Cycle parking will be provided in accordance with the standards set out in the Further Alterations to the London Plan (FALP).
- 3.2.2 Car parking provision will need to be agreed with the Local Authority. The Supplementary Guidance for the site indicates that a minimum provision for residential development should be one space per unit. For the school, the Local Authority has indicated that there are likely to be around 120 employees and that a provision of 0.5 spaces per employee should be provided.
- 3.2.3 The Councils 's car parking standards for D1 use indicate that within a CPZ one space per two staff, with allocation for visitors and coach setting down is required, elsewhere one space per two staff is also required. Further details of both residential and school parking standards are set out in Tables 4.1 and 4.2.
- 3.2.4 Electric charging points will be provided in accordance with London Plan requirements. It is also anticipated that the development will incorporate further car club spaces.

4 Scope of Planning Application Deliverables

4.1 Introduction

4.1.1 The section sets out the proposed structure for the TA and also for the Full Residential Travel Plan. Other documents, such as a School Travel Plan, Construction and Logistics Plan and Delivery and Servicing Plan will also be required. These may be provided as separate documents or as appendices to the TA.

4.2 Transport Assessment Scope

4.2.1 Based on the guidance provided by TfL in the Transport Assessment Best Practice Guidance Document, the following sections will be included within the Transport Assessment:

- Introduction and Background;
- Existing Site Context;
- Development Proposals;
- Baseline Transport Conditions;
- Committed Developments and Planned Transport Infrastructure Enhancements;
- Policy Review;
- Trip Generation Assessment;
- Transport Impact Assessment;
- Mitigation Measures; and
- Summary and Conclusions.

Report Chapters

Introduction and Site Transport Context

4.2.2 This section will include contextual background information including a description of the application site in terms of its location, existing land use and access to local facilities.

Development Proposals

4.2.3 The report will include a detailed description of the development proposals that have an influence on transport matters, for example; exact development quanta, facilities to support sustainable modes of travel (e.g. bicycle parking); car parking supply and access options.

4.2.4 This section will provide details of the highway and public realm proposals and outline details of servicing and delivery management and construction logistics. It is anticipated that full Delivery and Servicing and Construction Logistic Plans will be provided by condition if planning approval is granted.

Baseline Transport Conditions

- 4.2.5 This chapter will include a description of the baseline transport conditions in the vicinity of the site. It will also identify key strategic issues that may impact on the development proposals.
- 4.2.6 This Chapter will contain:
- a. A description of the existing pedestrian and cycle facilities in the vicinity of the site. The potential need for and scope of PERS and CERS audits to be agreed with LBRuT/TfL
 - b. Public transport service information, including stations and stops, service frequencies, PTAL calculation
 - c. Description of the highway network
 - d. Description of car parking in the vicinity. Initial discussions with LBRuT have indicated that there will be a need to undertake baseline parking surveys. The method and extent of these surveys will need to be agreed,
 - e. Presentation of any traffic or parking survey data relevant to the assessment that is available
 - f. An analysis of personal injury accidents recorded within an area of around 200 metres of the site over the most recent 36 months for which data is available
- 4.2.7 This chapter will describe the development site in its current condition. Public transport, highway, cycle and pedestrian facilities will be reviewed in detail. A brief summary has been provided in Section 2.

Committed Developments and Planned Infrastructure Improvements

- 4.2.8 This section will describe any committed developments, subject to advice from LBRuT, that we will include in the assessment of potential impacts of the proposed development upon the transport networks.
- 4.2.9 Any planned transport infrastructure improvements that will affect either the accessibility of the site or the capacity of the access arrangements will be identified.

Policy Review

- 4.2.10 A review of the relevant national, regional and local policy will be undertaken to identify potential constraints. Completion of this task will provide guidance on development proposal requirements such as the number of car and cycle parking spaces required.
- 4.2.11 The following policies have been identified as relevant for this development and site.
- a. National Planning Practice Guidance (NPPG), 2014
 - b. National Planning Practice Framework (NPPF), 2012
 - c. Mayor's Transport Strategy, 2010
 - d. The London Plan and its alterations since 2011
 - e. Core Strategy, LBRuT, 2010

- f. Development Management Document, LBRuT, 2014
- g. Other supplementary planning documents and other planning guidance which are adopted or currently under development and will be relevant to this development. These include the Development Brief for the Site which was adopted in July 2011.

4.2.12 Parking standards for LBRuT are set out in Appendix Four of the Adopted Development Management Plan (2011).

4.2.13 For standard residential developments Table 4.1 below summarises the Borough's standards.

Table 4.1: Summary of residential parking standards – London Borough of Richmond upon Thames Adopted Development Management Plan (2011)

No. of Bedrooms	Controlled Parking Zones (Maximum)	The remainder of the Borough	Cycle Parking Space Required (Minimum)
1-2 Bedrooms	1 Space	1 Space	1 Space
3 Bedrooms	1 unit - 2 Spaces	1 unit - 2 Spaces	1 Space
	2 units + - 1 allocated space plus 0.5 unallocated per unit	2 units + - 1 allocated space plus 0.5 unallocated per unit	
4+ Bedrooms	2 Spaces	2 Spaces (negotiable)	2 Spaces
N.B. In CPZs occupiers of new residential developments may not be eligible for on street parking permits where existing levels of on street parking are very high. (Blue Badge holders exempt). There are exceptions to this rule which are detailed in Policy DM TP 8. Garages will be treated as parking spaces.			

4.2.14 For schools the standards are summarised in Table 4.2 in below.

Table 4.2: Summary of school parking standards – London Borough of Richmond upon Thames Adopted Development Management Plan (2011)

Land Use	Controlled Parking Zones (Maximum)	The remainder of the Borough	Cycle Parking Space Required (Minimum)
School	1 Space per 2 Staff. Adequate setting down areas and visitor parking spaces also required. Coach setting down facilities also required.	1 Space per 2 staff	5 Spaces per classroom depending on the nature of the school.

Trip Generation, Mode Share and Trip Distribution Assessment

4.2.15 This section will explore the trip generation as a result of the change in land use quanta within the site. The resulting trip generation by mode will be used to inform the impact assessment.

4.2.16 It is anticipated that a first principles assessment will be undertaken using appropriate data including:

- 2011 Census;
- National Travel Survey Data;
- Trip generation data from the TRICS and TRAVL databases;
- London Transport Study data.
- Other relevant transport assessments/statements

4.2.17 A detailed technical note will be prepared setting out the proposed trip generation by mode and the anticipated trip distribution. This will be circulated and agreed with LBRuT and TfL prior to completion of the TA.

Transport Impact Assessment

4.2.18 The potential effects of the development will be assessed using the trip generation calculations. This will include assessments of effects on each of the transport networks.

4.2.19 The extent of the highway impact assessment will need to be agreed with both LBRuT and TfL.

4.2.20 The assessment will include a detailed public transport assessment. For buses this will identify the likely increase in demand by corridor. For rail we will identify the ability of the existing rail services to meet the anticipated demand generated by the proposed development. The detailed scope of the public transport assessment will be agreed with TfL.

4.2.21 Parking survey information will be used to determine the potential impact on existing on-street parking within and around the study area.

Mitigation Measures

4.2.22 This section would provide detailed proposals, if required, to mitigate the impact of the travel demand of the site.

4.2.23 The mitigation strategy will also include:

- A Framework Delivery and Servicing Plan (DSP);
- A Framework Construction Logistics Plan (CLP);
- A Car Parking Strategy;
- An overarching Travel Plan for the site setting out the overall Travel Planning Principles for the development;
- A full Residential Travel Plan;
- A School Travel Plan; and
- Potentially Framework Plans for other uses where these may be required based on the Thresholds set by policy.

Summary and Conclusion

4.2.24 This section will provide a summary of the assessment and present a conclusion of the suitability of the site to accommodate the development proposals.

4.3 Residential Travel Plan Scope

Report Structure

4.3.1 Based on the TfL guidance, the Residential Travel Plan will include the following sections and will be ATTrBute compliant, an ATTrBute assessment will be submitted with the Travel Plan.

- a. Introduction
- b. Development proposals
- c. Policy Overview
- d. Existing Travel Conditions and Behaviour
- e. Objectives and Targets
- f. Delivery Plan
- g. Measures and Action Plan
- h. Monitoring and Review
- i. Summary and Conclusions

Report Chapters

Introductory Section

- 4.3.2 The first chapter of the report will provide an overview of the development location and proposals and describe the scope and structure of the remainder of the report.

Development Proposals

- 4.3.3 A summary of the development proposals related to transport, with particular reference to facilities that support sustainable modes of travel, will be provided.

Policy Overview

- 4.3.4 This Chapter will summarise the existing national, regional and local planning policy that informs the requirements of the travel plan.

Existing Travel Conditions and Behaviour

- 4.3.5 A baseline review of all transport networks will be contained in this Chapter. This information will provide the basis for the identification of opportunities to encourage travel by sustainable modes and will help inform the Travel Plan targets.

- 4.3.6 This Chapter will also serve as an information base for the production of Residential Travel Plan packs.

Objectives and Targets

- 4.3.7 This Chapter will set out the overarching Objectives and Targets of the Residential Travel Plan for the new development.

- 4.3.8 The objectives will be supported by a set of quantified SMART (Specific, Measurable, Achievable, Realistic and Timed) Targets so that progress towards achieving them can be measured.

Delivery Plan

- 4.3.9 This section will explain how this Travel Plan will be taken forward to successfully achieve its Objectives and Targets.

- 4.3.10 The content of this Chapter will focus on the promotion, management and funding of the travel plan and will introduce initiatives to encourage sustainable travel and reducing the need to travel.

Measures and Action Plan

- 4.3.11 The measures that would be implemented to meet the Travel Plan targets will be described in detail.

- 4.3.12 An Action Plan will be provided to identify individual initiatives that can assist the residents to reduce private vehicle journeys.

Monitoring and Review

4.3.13 This Chapter will define who is responsible for the delivery and ongoing operation of the Travel Plan.

4.3.14 A timetable for monitoring and review will also be provided.

Summary and Conclusions

4.3.15 This final section will provide a summary of the Residential Travel Plan document.

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5 Sources of Data

- 5.1.1 Trip generation data will be informed by data drawn from the TRAVL Database as well as TRICS or other data sources. Census data will also help to inform the distribution of trips to and from the residential element of the development. National Travel Survey data will also be used where appropriate.
- 5.1.2 For the public transport assessment we will obtain available baseline information from TfL and agree if any additional data needs to be collected through the Scoping discussion.
- 5.1.3 Traffic Accident data will also be obtained from TfL to inform part of the Baseline Transport Conditions section.
- 5.1.4 Car parking analysis will be informed by the parking surveys of which the scope will be agreed with LBRuT before they are undertaken.

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6 Programme and Confirmation of Scope

- 6.1.1 This report has been prepared to agree the scope and method of the transport work required to support the planning application for the development of the Stag Brewery, Mortlake.
- 6.1.2 The proposed structure of the TA follows the Transport for London guidance “Transport Assessment Best Practice”, available on the TfL Website
- 6.1.3 With regards to programme the intended date of submission is January 2017.

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Appendix D Technical Note 9 – Parking Survey Data Review



Stag Brewery, Mortlake

Parking Survey Data Review

On behalf of [Reselton Properties](#)

Project Ref: 38262/5501 | Rev: AA | Date: January 2017

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Document Control Sheet

Project Name: Stag Brewery, Mortlake
 Project Ref: 38262
 Report Title: Parking Survey Data Review
 Doc Ref: Technical Note 9
 Date: April 2017

	Name	Position	Signature	Date
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Approved by:	Greg Callaghan	Partner	<i>G L Callaghan</i>	April 2017
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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1 Introduction

1.1 Overview

- 1.1.1 This technical note forms part of the evidence used in order to produce a Transport Assessment, on behalf of Reselton Properties, to support the planning application for the former Stag Brewery site, Mortlake.
- 1.1.2 The technical note summarises the Parking surveys that were undertaken by Intelligent data on behalf of Peter Brett Associates LLP and provides an analysis of what this demonstrates regarding existing parking patterns within the area.

1.2 Survey Scope

- 1.2.1 Intelligent data were instructed to carry out two separate parking surveys over a number of days in the Mortlake area, London Borough of Richmond upon Thames (LBRuT). The surveys carried out involved a simple “On-Street Parking Beat survey and a more detailed “Vehicle Registration Number Capture” survey, undertaken in a more limited area. The scope for the surveys, including the extent of the surveys and the methodology, were agreed beforehand with LBRuT.

On-Street Parking Beat Survey

- 1.2.2 The On-Street Parking Beat Survey included the area shown in Figure 1.1 below. This area was selected in order to encompass all residential roads considered to be within a reasonable walking distance of the site, defined as approximately 600m². The aim of this survey was to provide an understanding of existing parking supply and demand on roads surrounding the site at different times of the day (including overnight) and on weekdays and weekends.

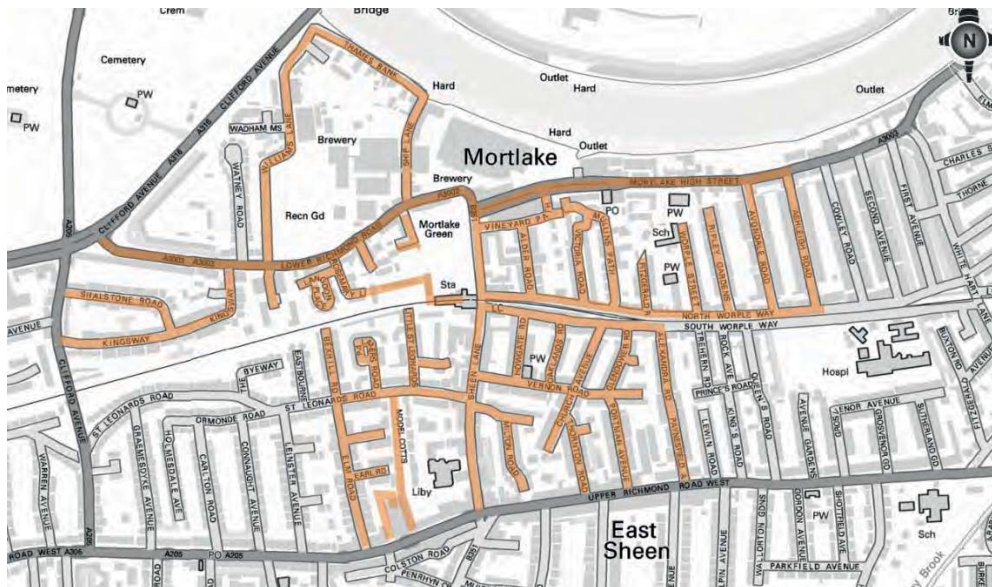


Figure 1.1 Map showing On-Street Parking Beat Survey Extent

- 1.2.3 This survey was conducted on two weekdays, Tuesday 22nd and Wednesday 23rd of November 2016 with beats at 05:00, 07:30, 11:00, 15:00 and 19:00 and on two separate Saturdays, 19th and 27th of November 2016, with beats at 12:00, 13:00, 14:00, 16:00, 18:00, 19:00 and 20:00. Further to this, overnight surveys were also carried out again for the same two weekdays with one survey between 01:00 and 05:30 each night. A final survey was then

carried out overnight at a weekend on the 27th November, with the day time count being carried out on the 19th of November 2016. The overnight count was again between the hours of 01:00 and 05:30. Maps were also required to be produced to demonstrate the exact locations of parked cars overnight.

On-Street Vehicle Registration Number Capturing

- 1.2.4 The second survey carried out was the On-Street Vehicle Registration Number Capturing survey. This was carried out both overnight and during the day. The aim of this survey was to provide additional information regarding utilisation of available parking spaces close to the site. In particular, it was considered important to better understand the extent to which parking was used by commuters either associated with the railway station or with local employment. Accordingly, night time beats were undertaken at 01:00 AM and at 05:30 AM in order to identify cars associated with the local resident population. Further day time beats were undertaken at 07:30 AM and at 11:00 AM to identify the proportion of resident's cars that were still present and any new ("commuter") cars that were now parked
- 1.2.5 The map below in Figure 1.2 identifies the five zones in which the number plate surveys were carried out.

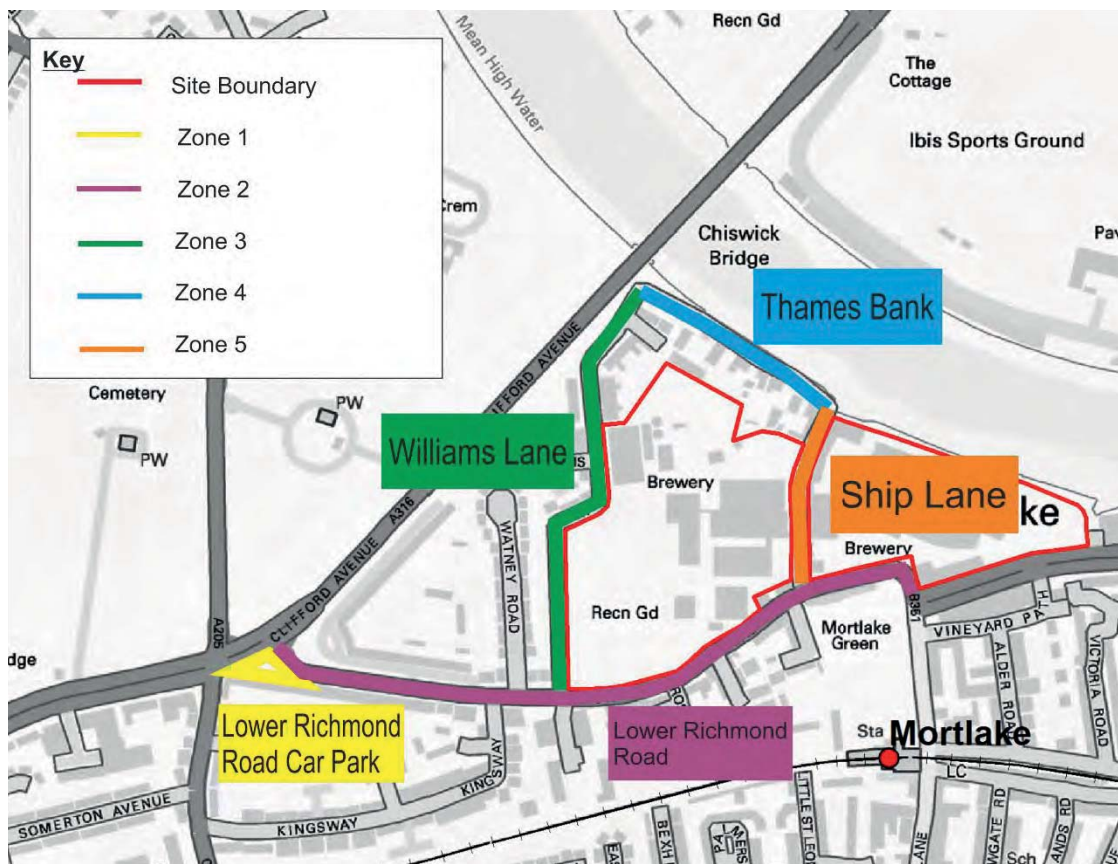


Figure 1.2 Map showing On-Street Vehicle Registration Number Capturing

1.3 Parking Controls

- 1.3.1 There are a number of existing parking controls in place within the survey area. A controlled parking zone (CPZ) operates from Sheen Lane eastwards as far as the Barnes Bridge branch of the railway line to the north of the Mortlake Line. A further CPZ operates to the south of the railway line between Little St Leonards to the west, the south circular to the south, Trehern Road to the east and the railway line to the north (Figure 1.3).

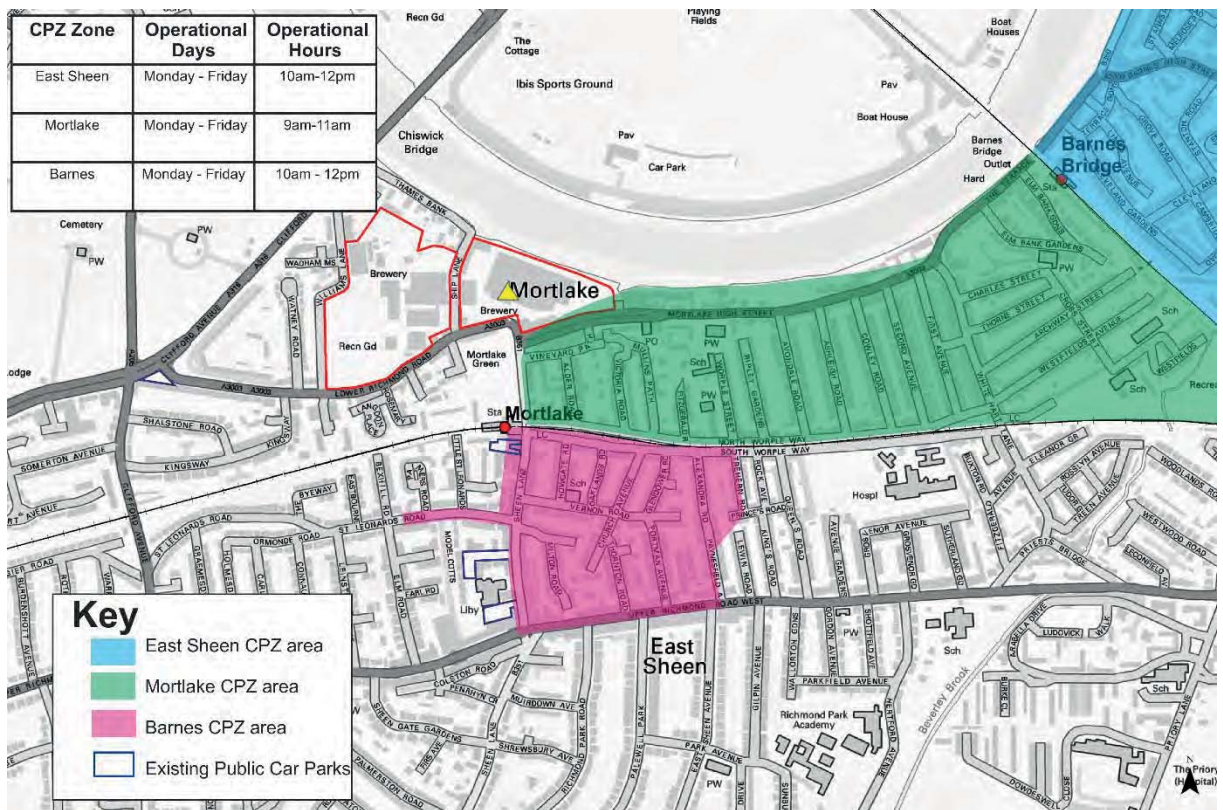


Figure 1.3 Mortlake Controlled Parking Zones

1.3.2 The controlled hours for these two existing CPZ's are as follows:

- CPZ M – Mortlake – Monday to Friday 09:00 – 11:00; and
- CPZ ES – East Sheen – Monday to Friday 10:00 – 12:00.
- CPZ B – Barnes – Monday to Friday 10:00 – 12:00

1.3.3 Additionally, there are a series of parking controls on Lower Richmond Road, these are in the form of single yellow and double red lines. The double red lines are mainly located on the approach to the Chalkers Corner and Sheen lane junctions and in the vicinity of the Ship Lane junction. In addition to the double yellow restrictions, other parts of the eastbound side of the carriageway, between Chalkers Corner and Sheen Lane and subject to single yellow line restrictions that apply between 08:00 - 18:30 (Monday to Saturday). On the westbound carriageway there is also an intermittent single yellow line parking restriction that applies either 07:00 – 19:00 (Monday to Saturday) or 08:00 - 18:30 (Monday to Saturday).

1.3.4 These single yellow lines cause a significant change in capacity available overnight and reduce the parking stress in the hours when the parking controls are not in place. For example, on Lower Richmond Road (west) the number of spaces increases from 23 during the day to 60 spaces outside of parking control hours.

1.3.5 Figure 1.4 below demonstrates the parking restrictions across the Mortlake area.

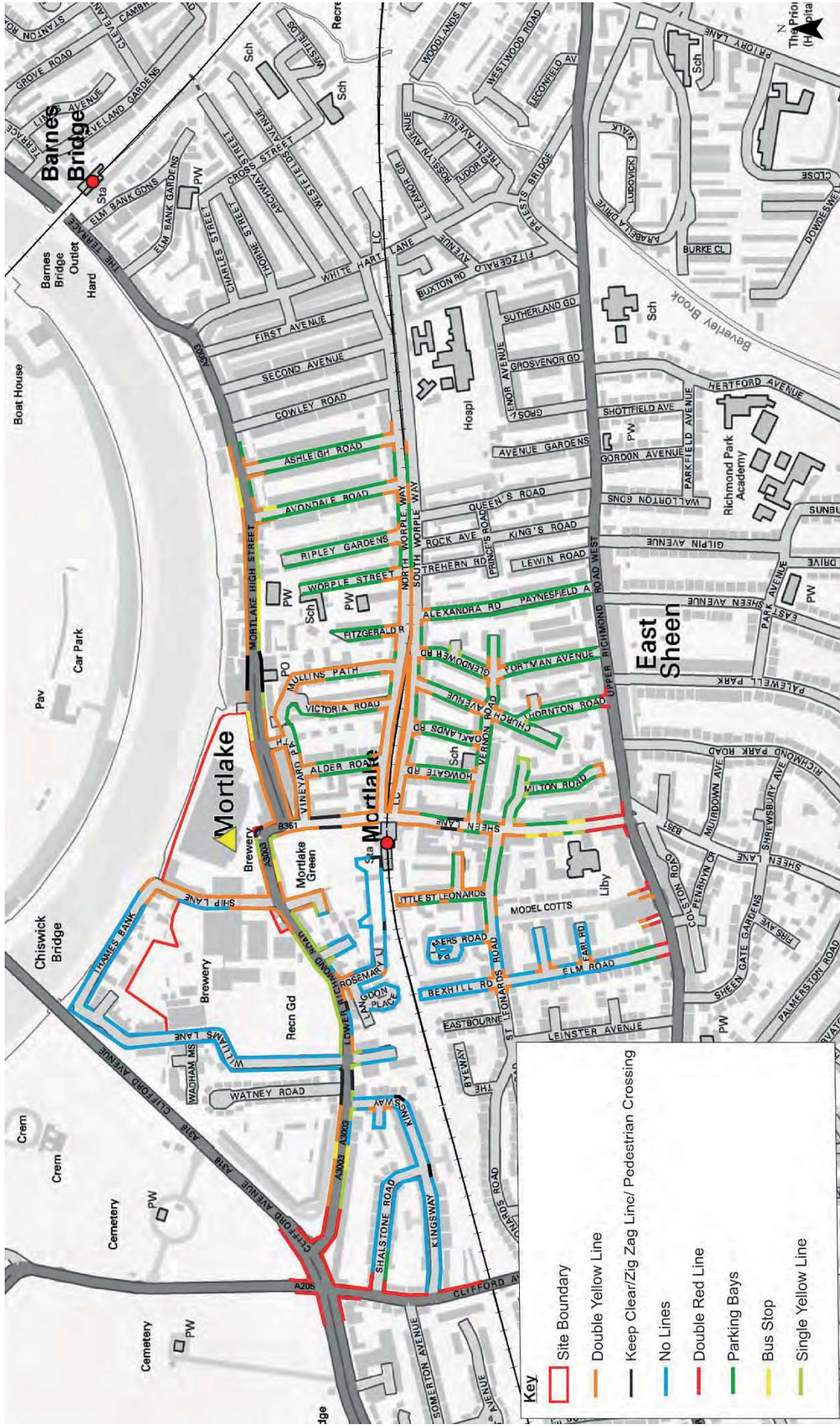


Figure 1.4 Mortlake Parking Restrictions

1.4 On-Street Parking Be at Data

1.4.1 The On-Street Parking Beat Data was collected over the course of two weekdays and one weekend day with parking beats collected both during the day and overnight. The data collected for each road within the survey extent shown in Figure 1.1 included the number of legal spaces, the number of cars parked and the level of parking stress. The tables in Appendix A, B and C demonstrate the available capacity (number and proportion of total spaces) for each road within the survey area. This information is provided for each parking beat, as well as the number of legal spaces. Appendix A contains data for the weekday day time, Appendix B the weekend day time and Appendix C the weekend and weekday overnight data.

1.4.2 The data indicates the varying levels of capacity available across the Mortlake area. The four figures included below demonstrate the average capacity remaining for each street. Figure 1.5 shows the weekday during the day, whilst Figure 1.6 demonstrates the weekend during the day. In order to create the figure an average of all parking beats surveyed throughout the day has been taken.



Figure 1.5 Chromatic scale of remaining capacity – Weekday Day Time Average

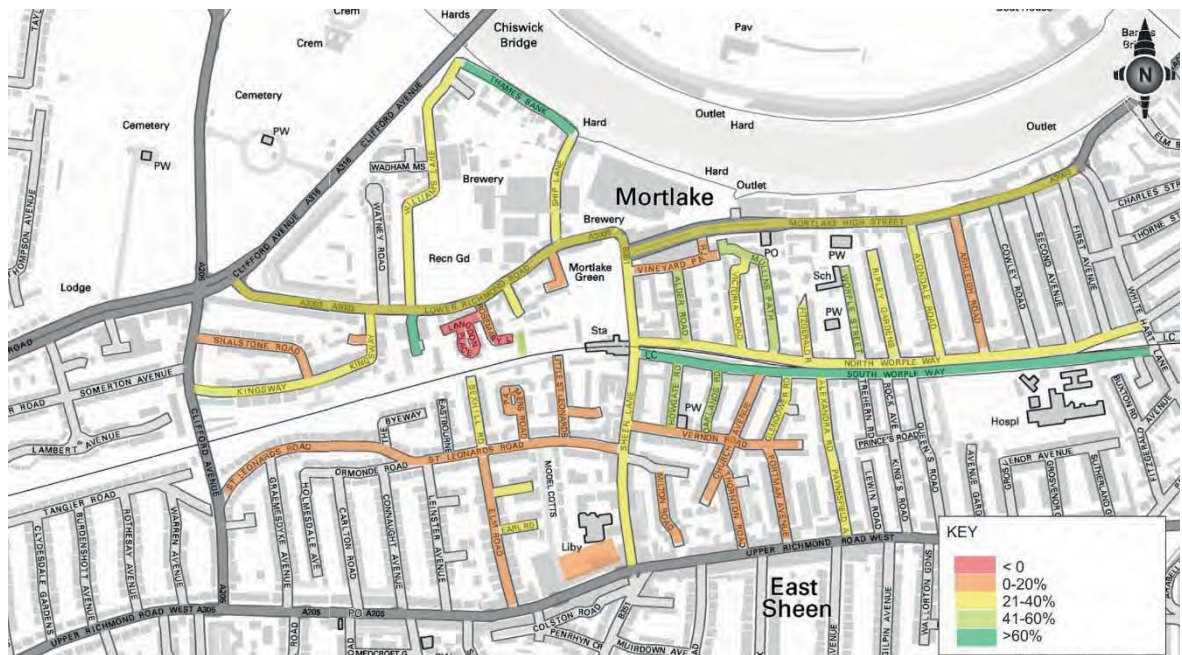


Figure 1.6 Chromatic scale of remaining capacity – Weekend Day Time Average

- 1.4.3 The two figures demonstrate that of the key roads in the area surrounding the site some demonstrate a high level of capacity whilst others demonstrate a much lower level of capacity available. Any roads in orange indicate a level of capacity remaining between 0% and 20% which demonstrates a mainly full parking provision. Langdon Place demonstrates a red rating which is less than 0% capacity. This however is a small residential road with lots of informal parking, although as a cul de sac it is not likely to attract parking from the Stag Brewery anyway and therefore not thought to be a problem going forward.
- 1.4.4 The majority of roads in the area for both plans demonstrate a yellow rating, an average capacity of between 21%-40%. Roads such as Kingsway, Williams Lane and Mortlake High Street demonstrate this level of average capacity over both the weekday and weekend time periods. Two roads in close proximity to the site demonstrate an average level of capacity of over 60% in both the weekday and weekend periods, Thames Bank and Hanson Close, whilst Lower Richmond Road East also demonstrates a capacity of over 60% over the weekend. Thames Bank and Hanson Close however as shown in the tables in Appendix A and B only have 39 and 14 spaces respectively and due to the nature of the roads and their location neither is likely to attract a high level of parking.
- 1.4.5 Figures 1.5 and 1.6 demonstrate the same information as Figures 1.3 and 1.4, albeit for the overnight parking beats. The capacity for Lower Richmond Road West has been altered for these scenarios. In theory overnight it is possible to park on both sides of Lower Richmond Road West but not during the day due to the single yellow line present on the eastbound side of the carriageway. This increases the number of legal parking spaces from 23 to 60. However, the survey data demonstrates that no parking is taking place on the eastbound carriageway and therefore to represent true conditions capacity has been calculated based on the 23 spaces available.

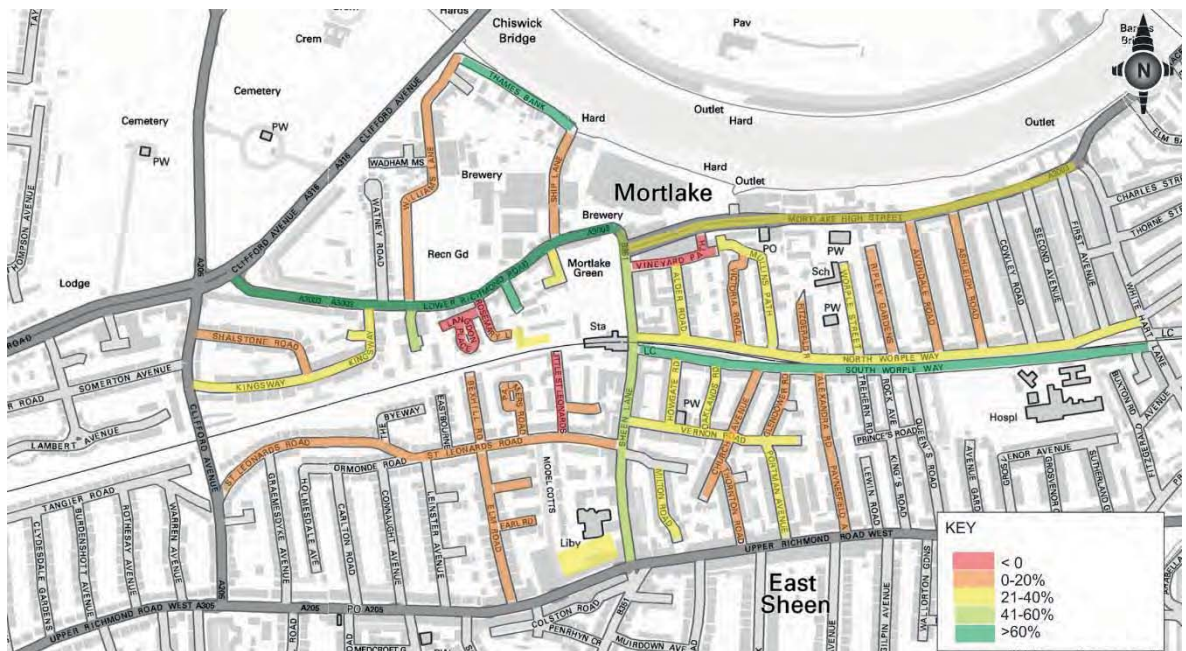


Figure 1.7 Chromatic scale of remaining capacity – Weekday Overnight Average

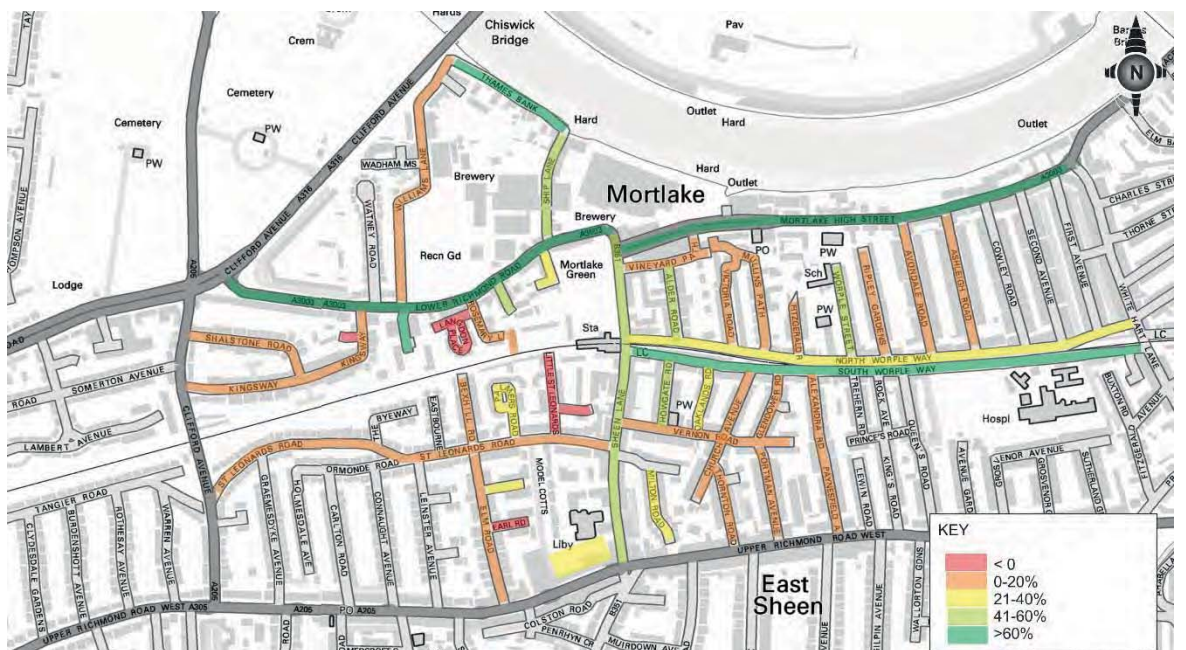


Figure 1.8 Chromatic scale of remaining capacity – Weekend Overnight Average

- 1.4.6 Overnight the two figures demonstrate that of the key roads in the area surrounding the site there are much lower levels of capacity than during the day. This indicates a high level of resident parking taking place. Williams Lane and Ship Lane both now show lower levels of capacity particularly during the week. Both roads in the weekday overnight scenario demonstrate an orange rating which indicates less than 20% capacity available. A number of other roads also show a red rating to imply there is more cars parked than there is capacity for. These roads include Rosemary Lane and Little St Leonards as well as several others in just the weekday scenario. At the weekend there is a slight alleviation of constraint on capacity with Ship Lane and Sheen Lane indicating a capacity between 41% and 60% and Mortlake High Street indicating capacity being at over 60%.

1.4.7 Lower Richmond Road east and west both show a high level of capacity available in both the weekend and weekday overnight periods as a number of parking spaces become available overnight due to the restriction on single yellow lines being lifted. However, the surveys demonstrate that there is minimal parking in these areas on Lower Richmond Road West with only a small number using this area on Lower Richmond Road East. Therefore, although it is suggested that capacity is high, in reality a similar number of vehicles are parking on both roads overnight and there are in the day.

1.5 Number Plate Analysis

1.5.1 Number Plate surveys were also carried out in order to determine the type of parking being carried out in different areas around the site. By Monitoring number plates throughout the day and overnight it is possible to ascertain whether the majority of vehicles belong to residents or commuters. Five Zones were selected to assess the times at which cars were arriving and leaving each parking zone. Number Plates were recorded at 03:00, 05:00, 07:30 and 11:00 in order to determine which vehicles had left and arrived at each location. The five zones were shown in Figure 1.2 above.

1.5.2 The Five Zones represent key areas in terms of parking in close proximity to the proposed development. All zones are on street parking with the exception of Zone 1 which is a small car park which is not subject to any parking controls and which is located adjacent to Chalkers Corner. The table below demonstrates the results of the survey for each zone and the percentage of vehicles that left at each time period.

	No. of Vehicles Surveyed	Left before 03:00	Left before 05:00	Left before 07:30	Left before 11:00	Parked Whole time	Notes
Zone 1	19	0%	0%	11%	53%	37%	-
Zone 2	38	0%	5%	8%	37%	50%	two vehicles returned
Zone 3	67	0%	0%	12%	25%	61%	one vehicle returned
Zone 4	1	0%	0%	0%	100%	0%	only 1 car parked
Zone 5	20	0%	0%	5%	40%	55%	-
Overall average	29	0%	1%	7%	51%	41%	

1.5.3 Zone 1 was surveyed to have a total of 19 vehicles present throughout the survey period. Of the 19 vehicles 11% left between the hours of 05:00 and 07:30, whilst 63% left between 07:30 and 11:00. The remaining 37% were parked for the entire survey period. As no vehicles arrived and parked within the survey period it can be determined that the vehicles parking within this zone are residents who are leaving to drive to work or leaving their car and travelling to work using other modes.

1.5.4 Zone 2, Lower Richmond Road, had a total of 38 vehicles observed over the survey period a similar pattern to Zone 1 was observed, although a larger proportion (50%) were observed to have parked the whole period. In Zone 3 61% of vehicles remained parked for the whole period and 55% were observed doing the same in Zone 5.

1.5.5 Only one vehicle across the survey area was recorded as not being present in the area overnight. One vehicle arrived between the hours of 07:30 and 11:00. Based on this, it appears that there is practically zero commuter parking occurring in the area around the site. All other vehicles were parked overnight, suggesting they are residents in the area. These vehicles (58%) then mainly left between the hours of 07:30 and 11:00, with 41% across the whole area remaining parked all through the survey period. As a result of this, it would suggest

that any existing parking stress in the area is caused by residents of the area, rather than people parking in the area to use the rail station or to access local employment.

1.6 Summary

1.6.1 Two different types of parking survey data were collected by Intelligent Data on behalf of Peter Brett Associates LLP:

- Simple parking beat surveys were undertaken across the wider Mortlake area in order to identify existing levels of parking stress; and
- Within a more localised area, more detailed surveys were undertaken involving the collection of registration numbers in order to understand dwell times and the potential impacts of in commuters using local parking.

1.6.2 The parking beat survey data demonstrated a wide variation in the level of parking stress between weekdays and weekends and daytime and overnight. range of capacity available across the Mortlake area, with variances between the weekday and weekend data both during the day and overnight.

1.6.3 Of the key roads around the site, several showed low levels of capacity available. Williams Lane was identified as having a yellow rating for both day time scenarios but an orange rating for both overnight scenarios. Ship Lane demonstrated a higher amount of capacity available at the weekends (yellow during the day, light green overnight) but had much less capacity available during the week as both scenarios received an orange rating.

1.6.4 Lower Richmond Road West achieved an orange rating for the weekday day time and a yellow rating during the day at weekends. In contrast Lower Richmond Road East scored a dark green rating and demonstrated high capacity in all scenarios with the exception of during the day at the weekend. This is impacted by the increased availability in parking overnight caused by the single yellow lines on the road.

1.6.5 The number plate analysis demonstrates a high number of resident parking takes place on the roads surrounding the site, with practically zero commuter parking. Of the surveys carried out it was demonstrated for all five zones that the majority of vehicles either left between the hours of 07:30 and 11:00 or remained in situ for the duration. This indicated that most vehicles are either being used to commute or are remaining parked outside the place of residence during the day.

Appendix A Weekday Parking Spare Capacity

Road Name	Legal Spaces	Total Weekday Parking Capacity				
		05:00	07:30	11:00	15:00	19:00
Kingsway	146	30%	31%	41%	36%	24%
Shalstone Road	70	10%	12%	19%	9%	-13%
Rutland Close	5	10%	10%	20%	0%	10%
Chertsey Court	93	41%	42%	72%	66%	47%
Lower Richmond Road (West)	23	61%	63%	48%	26%	-11%
Lower Richmond Road (East)	19	64%	73%	76%	63%	45%
Hanson Close	14	57%	57%	75%	71%	68%
Langdon Place	9	-206%	-189%	-117%	-122%	-172%
Rosemary Lane	14	0%	4%	7%	25%	14%
Rosemary Terrace	5	0%	0%	30%	10%	-10%
Rosemary Gardens	26	19%	21%	12%	19%	16%
Waldeck Road	9	45%	45%	61%	61%	6%
Cromwell Place	8	12%	12%	25%	-6%	-6%
Williams Lane	73	11%	21%	45%	37%	26%
Thames Bank	39	97%	97%	96%	90%	83%
Ship Lane	27	13%	17%	31%	11%	17%
North Worpole Way	50	34%	34%	27%	45%	37%
Mortlake High Street	57	18%	18%	34%	33%	15%
Vineyard Path	24	19%	19%	35%	42%	31%
Alder Road	38	15%	21%	33%	37%	34%
Victoria Road	26	16%	16%	17%	16%	9%
Mullins Path	25	36%	36%	50%	52%	36%
FitzGerald Road	35	40%	42%	40%	45%	36%
Worpole Street	57	29%	40%	35%	46%	45%
Ripley Gardens	70	19%	20%	36%	42%	41%
Avondale Road	62	-5%	-4%	31%	35%	31%
Ashleigh Road	87	17%	17%	25%	36%	32%
Alexandra Road-Paynesfield Avenue	95	23%	24%	45%	35%	21%
Glendower Road	33	14%	17%	42%	39%	26%
Portman Avenue	57	28%	31%	32%	28%	24%
Thornton Road	34	13%	16%	15%	9%	3%
Milton Road	82	26%	30%	24%	14%	16%

Road Name	Legal Spaces	Total Weekday Parking Capacity				
		05:00	07:30	11:00	15:00	19:00
Howgate Road	34	37%	38%	40%	28%	31%
Oaklands Road	36	38%	39%	35%	36%	24%
Vernon Road	67	22%	23%	18%	31%	16%
Church Avenue	67	15%	15%	31%	27%	22%
South Worpole Way	70	70%	71%	79%	72%	75%
Sheen Lane	31	34%	30%	19%	10%	26%
Bexhill Road	45	10%	11%	19%	21%	22%
Palmers Road	12	16%	16%	12%	-5%	-8%
Little St Leonards	17	9%	9%	18%	9%	12%
Moore Close	9	17%	22%	44%	39%	22%
St Leonards Road	47	20%	22%	18%	2%	9%
Elm Road	84	5%	10%	17%	8%	5%
Beechcroft Road	24	29%	29%	31%	23%	23%
Earl Road	21	12%	14%	21%	5%	15%
Maximum	2080	97%	100%	100%	100%	100%

Appendix B Weekend Parking Spare Capacity

Road Name	Legal Spaces	Total Weekend Parking Capacity						
		12:00	13:00	14:00	16:00	18:00	19:00	20:00
Kingsway	146	31%	19%	32%	26%	32%	34%	30%
Shalstone Road	70	15%	14%	14%	12%	14%	11%	12%
Rutland Close	5	0%	0%	0%	0%	0%	0%	20%
Chertsey Court	93	68%	77%	70%	74%	73%	78%	74%
Lower Richmond Road (West)	23	39%	26%	26%	22%	35%	30%	39%
Lower Richmond Road (East)	19	37%	32%	42%	26%	32%	37%	16%
Hanson Close	14	64%	71%	64%	71%	64%	64%	43%
Langdon Place	9	-178%	-167%	-267%	-189%	-222%	-267%	-200%
Rosemary Lane	14	21%	7%	0%	14%	7%	21%	7%
Rosemary Terrace	5	0%	-20%	-20%	0%	-20%	0%	-20%
Rosemary Gardens	26	24%	35%	41%	53%	44%	65%	38%
Waldeck Road	9	33%	33%	33%	56%	33%	33%	11%
Cromwell Place	8	0%	0%	0%	12%	25%	50%	0%
Williams Lane	73	21%	19%	30%	32%	26%	29%	33%
Thames Bank	39	82%	85%	90%	95%	90%	95%	87%
Ship Lane	27	26%	19%	19%	26%	22%	26%	19%
North Worple Way	50	32%	40%	48%	40%	40%	36%	36%
Mortlake High Street	57	16%	33%	44%	35%	61%	19%	19%
Vineyard Path	24	8%	21%	33%	25%	21%	17%	0%
Alder Road	38	41%	54%	54%	59%	56%	46%	46%
Victoria Road	26	12%	23%	35%	23%	19%	23%	12%

Road Name	Legal Spaces	Total Weekend Parking Capacity						
		12:00	13:00	14:00	16:00	18:00	19:00	20:00
Mullins Path	25	28%	40%	60%	52%	60%	36%	16%
FitzGerald Road	35	23%	34%	46%	34%	46%	31%	29%
Worple Street	57	44%	63%	70%	56%	54%	51%	44%
Ripley Gardens	70	26%	39%	37%	30%	36%	33%	24%
Avondale Road	62	13%	21%	29%	30%	30%	29%	21%
Ashleigh Road	87	5%	22%	34%	20%	20%	15%	15%
Alexandra Road- Paynesfield Avenue	95	41%	15%	23%	16%	45%	43%	41%
Glendower Road	33	24%	21%	18%	27%	33%	27%	21%
Portman Avenue	57	19%	5%	5%	5%	15%	8%	5%
Thornton Road	34	6%	9%	6%	12%	12%	12%	6%
Milton Road	82	16%	12%	20%	23%	15%	12%	10%
Howgate Road	34	50%	35%	41%	53%	53%	50%	50%
Oaklands Road	36	36%	50%	53%	42%	42%	39%	33%
Vernon Road	67	19%	-3%	7%	16%	22%	24%	22%
Church Avenue	67	19%	21%	6%	16%	19%	16%	13%
South Worple Way	70	73%	83%	76%	71%	76%	73%	76%
Sheen Lane	31	3%	3%	13%	19%	16%	19%	100%
Bexhill Road	45	20%	20%	20%	24%	29%	36%	36%
Palmers Road	12	8%	8%	8%	8%	23%	31%	15%
Little St Leonards	17	0%	0%	-6%	6%	12%	12%	6%
Moore Close	9	0%	0%	0%	22%	22%	33%	56%
St Leonards Road	47	13%	13%	15%	17%	26%	21%	17%
Elm Road	84	13%	13%	12%	17%	17%	17%	21%
Beechcroft Road	24	37%	37%	33%	33%	37%	37%	42%

Road Name	Legal Spaces	Total Weekend Parking Capacity						
		12:00	13:00	14:00	16:00	18:00	19:00	20:00
Earl Road	21	14%	19%	19%	24%	24%	19%	24%
Maximum	2080	1%	5%	9%	8%	16%	27%	46%

Appendix C Weekday and Weekend Overnight Parking Spare Capacity

Road Name	Legal Spaces	Weekday Average Overnight Capacity	Weekend Overnight Capacity
Kingsway	153	32%	18%
Shalstone Road	72	8%	0%
Rutland Close	5	20%	-20%
Chertsey Court	90	48%	21%
Lower Richmond Road (West)	60	66%	62%
Lower Richmond Road (East)	59	79%	76%
Hanson Close	14	57%	71%
Langdon Place	9	-183%	-189%
Rosemary Lane	14	-14%	7%
Rosemary Terrace	5	0%	0%
Rosemary Gardens	34	34%	6%
Waldeck Road	12	63%	50%
Cromwell Place	11	27%	27%
Williams Lane	75	19%	16%
Thames Bank	39	96%	92%
Ship Lane	27	15%	44%
North Worple Way	54	22%	30%
Mortlake High Street	60	23%	65%
Vineyard Path	24	0%	4%
Alder Road	39	23%	44%
Victoria Road	26	13%	12%
Mullins Path	25	36%	0%

FitzGerald Road	35	17%	9%
Worple Street	57	23%	40%
Ripley Gardens	70	14%	14%
Avondale Road	63	16%	13%
Ashleigh Road	87	16%	10%
Alexandra Road- Paynesfield Avenue	91	16%	4%
Glendower Road	33	9%	9%
Portman Avenue	59	22%	5%
Thornton Road	34	4%	6%
Milton Road	82	27%	32%
Howgate Road	34	35%	47%
Oaklands Road	36	25%	33%
Vernon Road	67	22%	4%
Church Avenue	67	8%	12%
South Worple Way	70	69%	70%
Sheen Lane	38	49%	47%
Bexhill Road	45	10%	13%
Palmers Road	13	19%	23%
Little St Leonards	17	-3%	-12%
Moore Close	10	5%	-10%
St Leonards Road	47	19%	11%
Elm Road	84	4%	10%
Beechcroft Road	24	19%	21%
Earl Road	21	10%	-5%
Maximum	2080	96%	92%

Appendix E 2016 Survey Data



Stag Brewery, Mortlake

Traffic Survey Data Review

Technical Note 5

On behalf of **Reselton Properties Ltd**

Project Ref: 38262/5501 | Rev: AA | Date: November 2016

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Document Control Sheet

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Project Ref: 38262
Report Title: Traffic Survey Data Review
Doc Ref: Technical Note 5
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For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
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Appendices

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1.1 Background

1.1.1 This document sets out a review of the traffic survey data collected in the area surrounding the Stag Brewery site, Mortlake.

1.2 Survey Scope

1.2.1 Nationwide Data Collection was commissioned to carry out the traffic surveys on behalf of Peter Brett Associates LLP in June 2016.

1.2.2 The extent of the surveys included the following:

- Turning Counts and Queue Length Surveys, from 07:00 – 10:00 and 14:30 to 19:00 at:
 - A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction
 - Upper Richmond Road W (S Circular) / Sheen Lane Signalised Junction
 - A3003 Lower Richmond Road / Mortlake High Street / Sheen Lane Roundabout
 - Mortlake Station Level Crossing
- Mortlake Station Pedestrian Counts, from 07:00 to 10:00 and 16:00 to 19:00 at:
 - Mortlake Station at all 4 access points
- Level Crossing Timings and Queues, from 07:00 to 10:00 and 14:30 to 19:00 at:
 - Mortlake Station Level Crossing on Sheen Lane
- 7 Day Automatic Traffic Counts on:
 - Mortlake High Street, to the east of the Lower Richmond Road / Mortlake High Street / Sheen Lane Roundabout

1.2.3 The location of these surveys is shown in Figure 1.1 below.

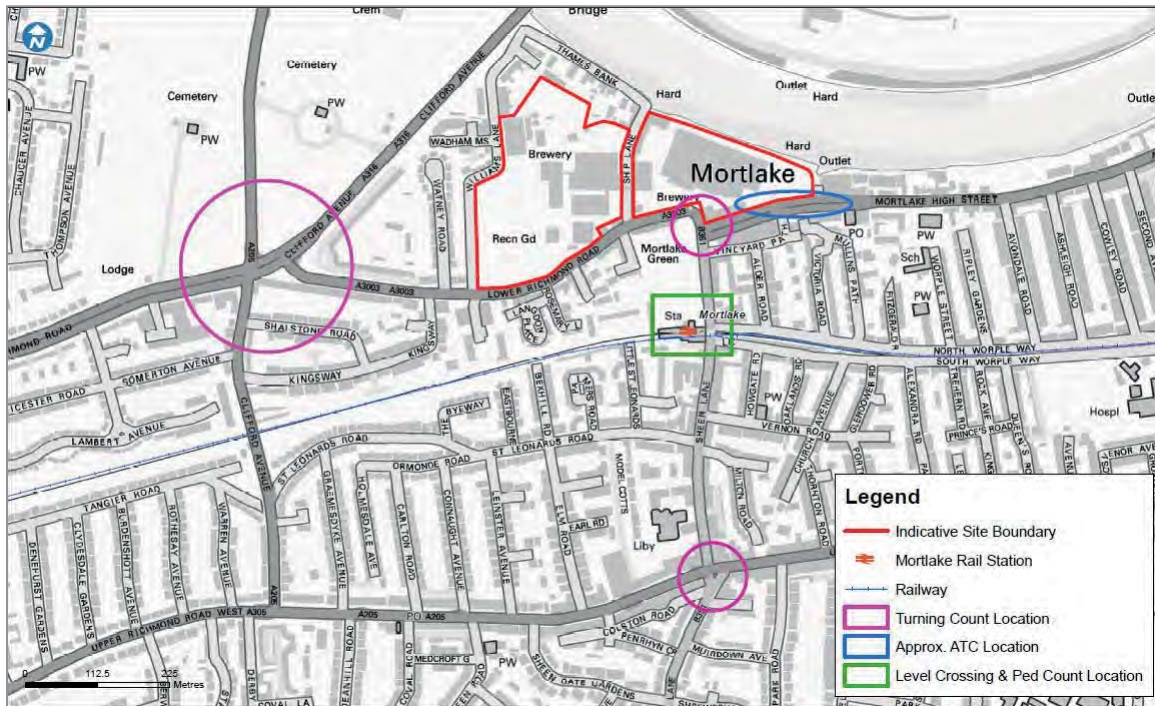


Figure 1.1 – Location of Traffic Surveys undertaken in June 2016

1.2.4 The AM peak was surveyed between 07:00 – 10:00, however the PM peak was extended to be from 14:30 to 19:00 at the request of London Borough of Richmond upon Thames in order to collect data at school pick up times.

1.3 Automatic Traffic Count (ATC)

1.3.1 A 7 day ATC was carried out on Mortlake High Street to the south-east of the Proposed Development.

1.3.2 The graph below demonstrates the daily all vehicles flow recorded in each direction.

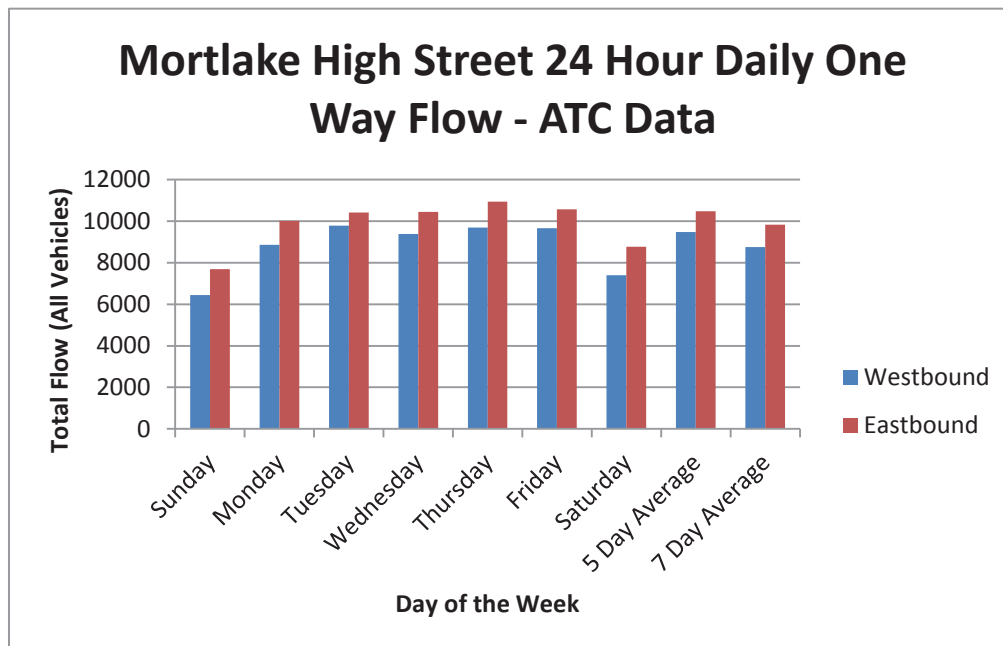


Figure 1.2 – Summary of Mortlake High Street 24 Hour Flows by Direction

1.3.3 Figure 1.2 shows that on average eastbound flows (5 day average of 10,474) were higher than the westbound flows (5 day average of 9,472).

1.3.4 This shows a greater amount of traffic heading towards Barnes Bridge than towards either Mortlake Station or the Lower Richmond Road.

1.3.5 Figure 1.3 below demonstrates the average weekday flow across 24 hours on Mortlake High Street.

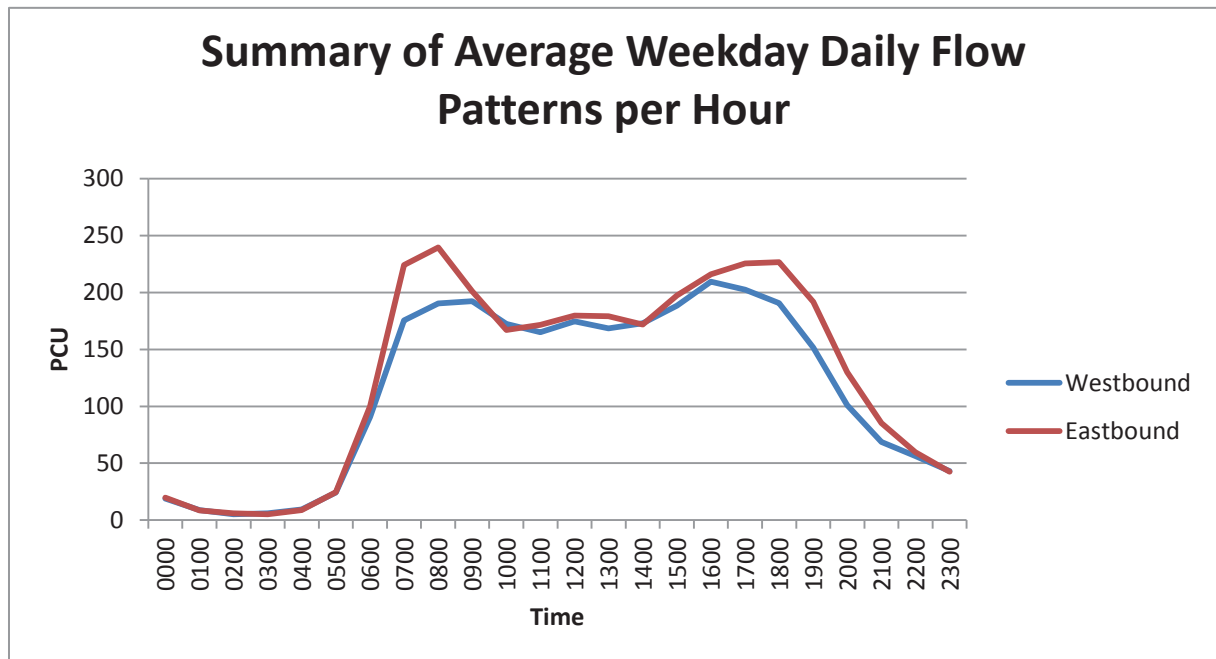


Figure 1.3 – Summary of Average Weekday Daily Flow Patterns per Hour – Mortlake High Street

1.3.6 The patterns show that eastbound there are two clear peaks. One a shorter more pronounced peak between approximately 07:00 and 09:00 and the second a slightly longer peak between 16:00 and 19:00.

1.3.7 The westbound flow has a slightly flatter profile with a less prominent AM Peak between 08:00 and 09:00. The PM peak is also shorter and earlier occurring between 16:00 and 17:00.

1.3.8 As well as having less severe peaks the daily flow also suggests that the westbound flow is less than the eastbound flows.

1.4 Turning Count Surveys

1.4.1 The turning count surveys were carried out on the Wednesday in the week of the ATC count. Figure 1.2 above shows that there were no drastic differences in terms of daily flow between Wednesday and the rest of the week, demonstrating that traffic conditions were representative of a normal day.

A316 Lower Richmond Road / Clifford Road / South Circular Road / A3003 Lower Richmond Road Junction Inflow

1.4.2 The principal junction and main connection to the wider highway network is the A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction.

- 1.4.3 The Graphs below highlight the percentage of Inflow and Outflow from the Lower Richmond Road arm to this junction over each peak.
- 1.4.4 The Lower Richmond Road Arm would provide the main access point to the wider highway network from the Proposed Development and therefore would be expected to see the greatest impact in terms of additional traffic flows.

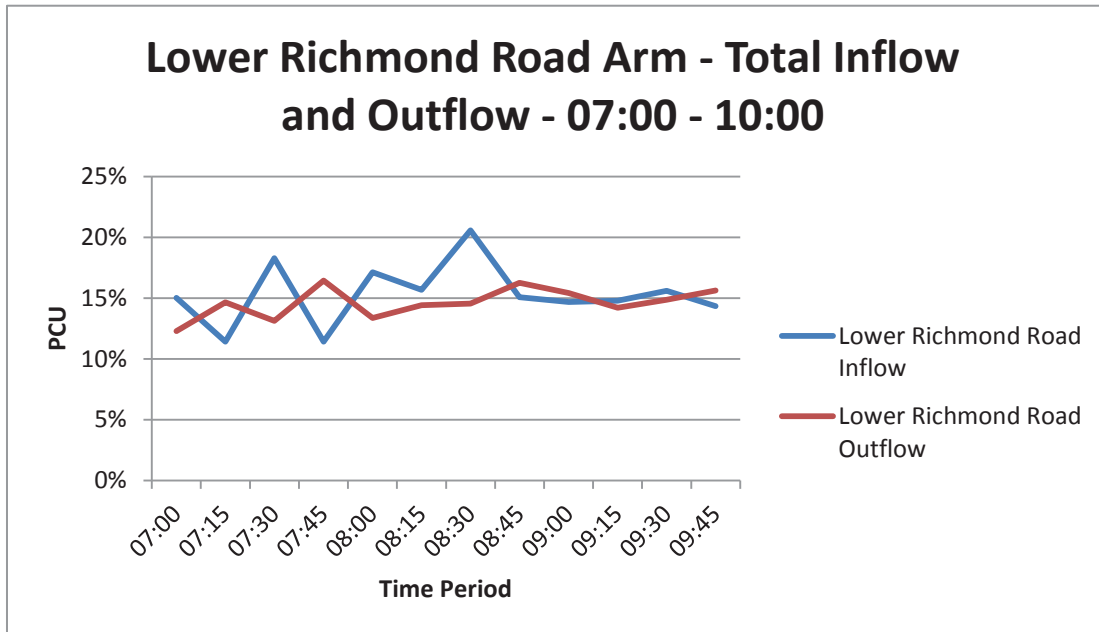


Figure 1.4 – Lower Richmond Road Arm - AM Peak - Total Inflow and Outflow

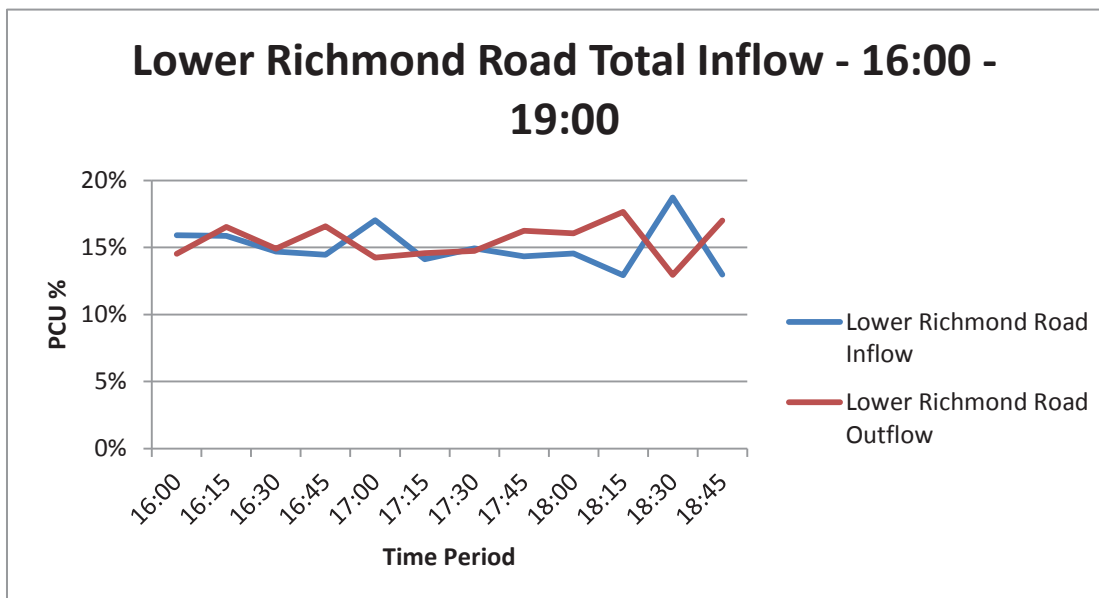


Figure 1.5 – Lower Richmond Road Arm – PM Peak – Total Inflow and Outflow

- 1.4.5 Figures 1.4 and 1.5 highlight that the current level of inflow and outflow to and from the junction ranges from between 11% and 21% of total junction inflow in the AM peak and 13% and 19% in the PM peak for each 15 minute period. This equates to approximately 150 vehicles in each direction per 15 minutes.
- 1.4.6 The average total inflow for the whole junction in each 15 minute period is 992 PCU in the AM Peak and 1174 PCU in the PM peak.

1.4.7 In terms of peak hours, the figures show in the AM peak that the peak hour would be between 08:00 and 09:00 whilst the PM peak shows a much flatter more consistent profile. This correlates with site observations where in the PM peak flows were consistent due to the large amount of traffic.

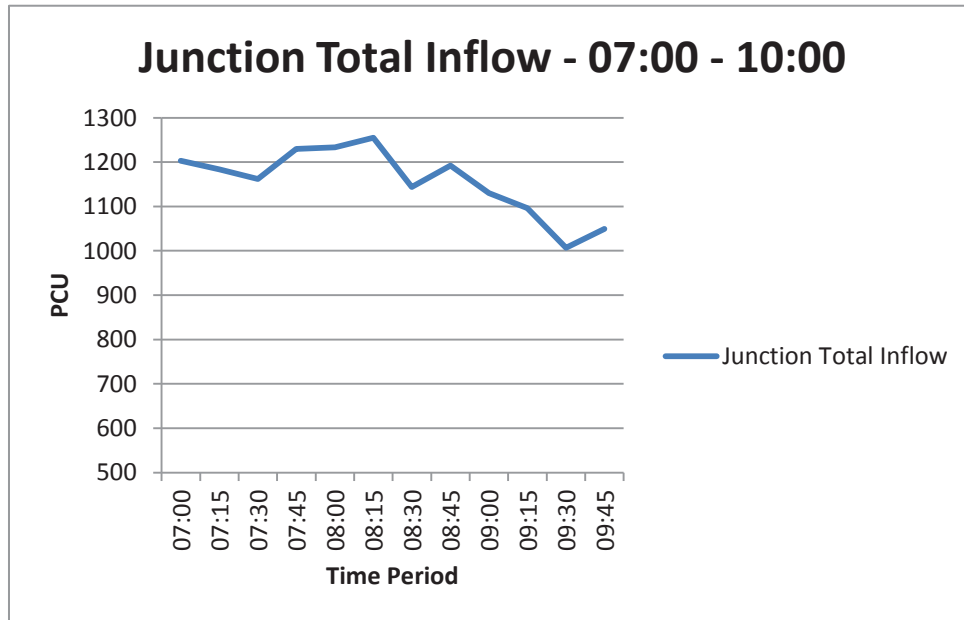


Figure 1.6 - A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction – AM Peak – Total Inflow

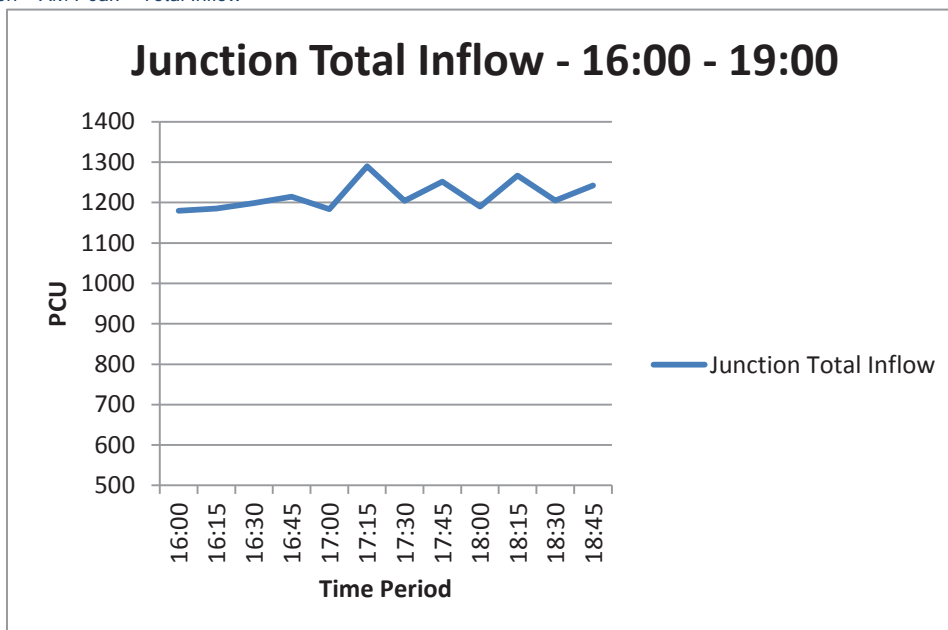


Figure 1.7 - A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction – PM Peak – Total Inflow

1.4.8 Figures 1.6 and 1.7 show the total junction inflow for the AM and PM peaks. In the AM peak there is a small peak observed between 07:30 and 08:30 whereas in the PM peak there is a much flatter junction profile with no real peak observed.

1.5 Lower Richmond Road Turning Proportions

1.5.1 Table 1.1 below demonstrates the traffic flows per direction for the A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction.

Table 1.1 – Summary of junction turning movements for the A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction.

Arm		AM Peak 07:00 – 10:00						PM Peak 16:00 – 19:00					
		Arm A	Arm B	Arm C	Arm D	Arm E	Total	Arm A	Arm B	Arm C	Arm D	Arm E	Total
A	S Circular Road (N)	0	233	481	1116	38	1869	0	255	593	1190	44	2082
B	A316 Clifford Avenue	131	0	645	453	1747	2975	149	0	786	620	2392	3947
C	Lower Richmond Road (E)	431	863	0	97	738	2128	368	943	0	62	822	2195
D	S Circular Road (S)	1254	866	34	0	495	2649	1045	741	23	0	500	2308
E	Lower Richmond Road (W)	203	2751	867	452	5	4277	194	2587	866	428	2	4077
Total		2018	4713	2026	2117	3023	13898	1756	4526	2267	2300	3760	14609

Table 1.2 – Summary of junction turning proportions for the A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction.

Arm		AM Peak 07:00 – 10:00						PM Peak 16:00 – 19:00					
		Arm A	Arm B	Arm C	Arm D	Arm E	Total	Arm A	Arm B	Arm C	Arm D	Arm E	Total
Arm A	S Circular Road (N)	0%	12%	26%	60%	2%	100%	0%	12%	28%	57%	2%	100%
Arm B	A316 Clifford	4%	0%	22%	15%	59%	100%	4%	0%	20%	16%	61%	100%

	Avenue												
Arm C	Lower Richmond Road (E)	20%	41%	0%	5%	35%	100%	17%	43%	0%	3%	37%	100%
Arm D	S Circular Road (S)	47%	33%	1%	0%	19%	100%	45%	32%	1%	0%	22%	100%
Arm E	Lower Richmond Road (W)	5%	64%	20%	11%	0%	100%	5%	63%	21%	10%	0%	100%

1.5.2 Tables 1.1 and 1.2 demonstrate that in the AM peak of the existing traffic inflow from the Lower Richmond Road arm, the majority turns north-east towards Chiswick Bridge (41%/863 PCU) or south-west towards Richmond (35%/738 PCU). A further 20% or 431 PCU turns towards Kew via the S Circular Road (N).

1.5.3 The same pattern was then recorded in the PM peak, with 43%/943 PCU turning towards Chiswick Bridge and 37%/822 PCU towards Richmond. The percentage turning towards Kew and the S Circular Road (N) was slightly less than the AM peak (17%/368).

1.5.4 Figure 1.8 below demonstrates these flows in a diagram.

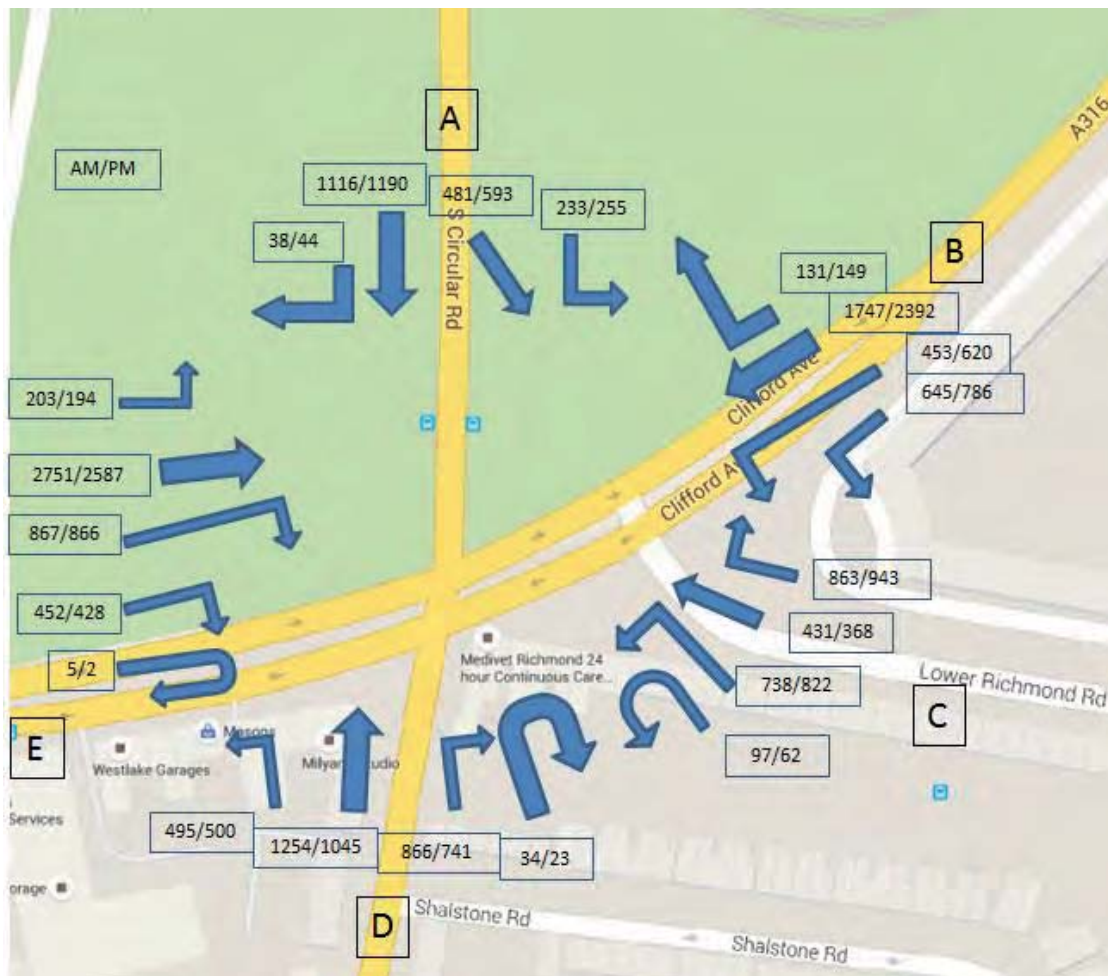


Figure 1.8 – Diagram of turning flows at A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction.

1.6 Mortlake Station Level Crossing Flows

1.6.1 Traffic flows using the crossing were recorded as northbound and southbound flows for the 07:00 – 10:00 and 16:00 – 19:00 time periods.

1.6.2 Table 1.2 below demonstrates the level and proportion of traffic in each direction.

Table 1.2 – Summary of Mortlake Station Level Crossing Directional Flows

Direction of Travel	AM Peak (07:00 – 10:00)		PM Peak (16:00 – 19:00)	
	Traffic Flow (PCU)	Proportion	Traffic Flow (PCU)	Proportion
Northbound	717	57%	670	48%
Southbound	547	43%	726	52%
Total	1265	100%	2057	100%

1.6.3 Table 1.2 shows that in the AM peak the majority of traffic is using the crossing point to travel northbound (57%), whilst in the PM peak the majority of traffic uses the crossing to travel southbound (52%).

1.7 Mortlake Station Level Crossing Queues

1.7.1 A queue survey was carried out at the Mortlake Station Level Crossing in order to determine the level of queueing during barrier down-times in each peak and to ascertain the impact this has on the surrounding road network.

1.7.2 The graphs below demonstrate the queue length in PCUs during ‘Red Times’, times when the barrier was down.

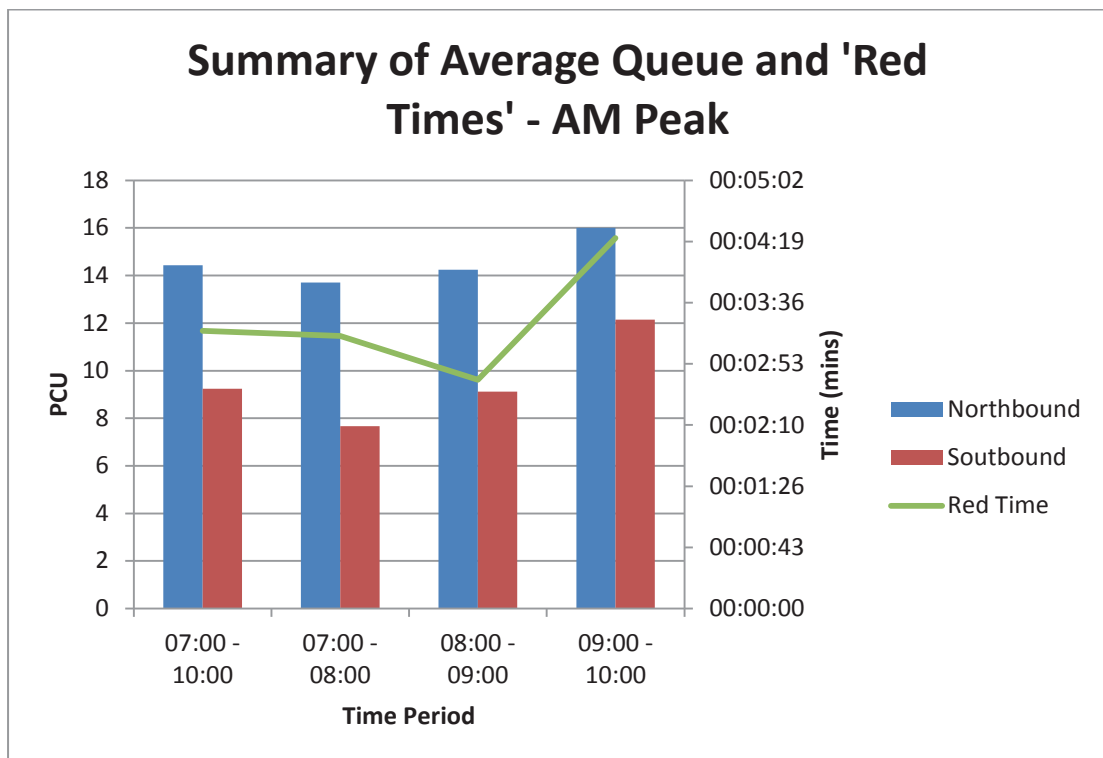


Figure 1.9 – Summary of Mortlake Station Level Crossing Averages Queues and 'Red Times' – AM peak

- 1.7.3 Figure 1.9 shows the results of the AM peak where northbound queueing was recorded as being greater than the southbound queues across the peak period. Between 07:00 and 10:00 the northbound queue averaged 14 PCUs whilst the southbound queue average 9 PCUs. The maximum southbound queue recorded was 43 PCUs and northbound was 35 PCUs.
- 1.7.4 Average 'Red Time' varied across the peak with it averaging 3 minutes 13 seconds across the three hour period. The maximum 'Red Time' observed in the AM peak was 9 minutes 07 seconds in the 09:00 – 10:00.

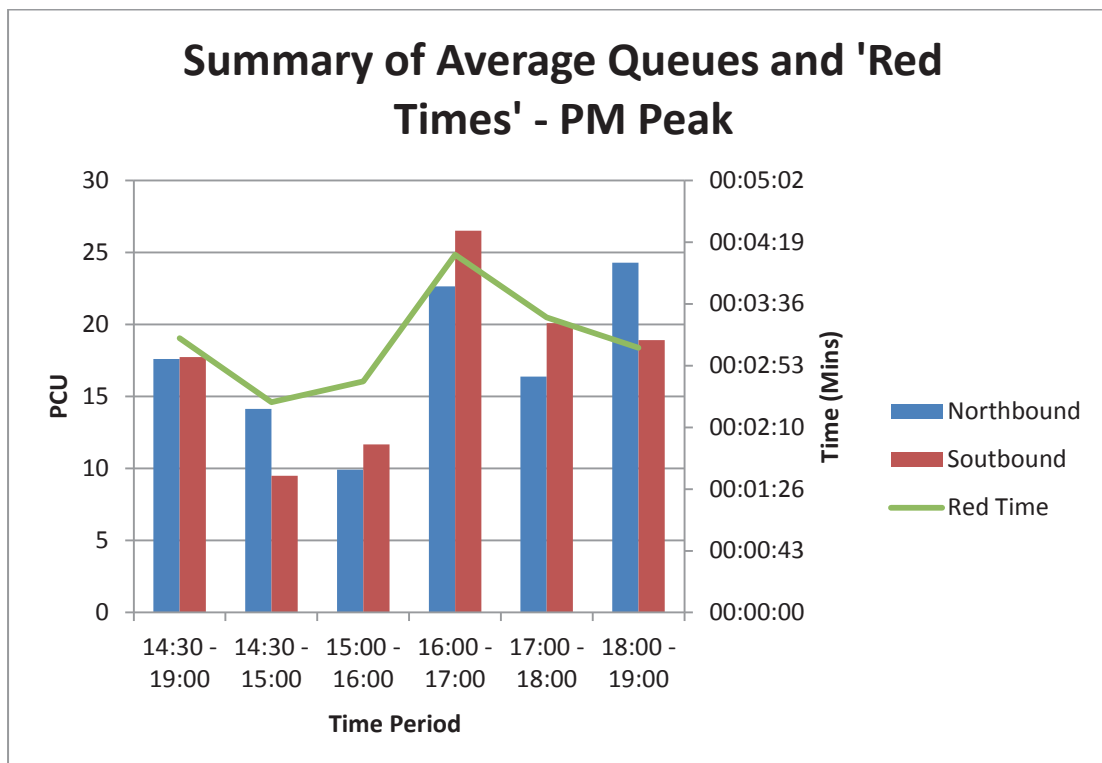


Figure 1.10 – Summary of Mortlake Station Level Crossing Averages Queues and 'Red Times' – PM peak

- 1.7.5 Figure 1.10 shows the results of the PM peak where southbound queues were generally greater than northbound queues. Between 14:30 and 19:00 both the northbound and southbound queues averaged 18 PCU. The 16:00 – 17:00 time period contained the maximum southbound queue (35 PCU) while the 18:00 – 19:00 time period contained the maximum northbound queue (43 PCU).
- 1.7.6 The average 'Red Time' across the whole period was 3 minutes 12 seconds with the maximum 'Red Time' – 7 minutes 24 seconds - observed within the 16:00 – 17:00 time period.
- 1.7.7 The table below shows the total down time, maximum down time, flows and maximum queues for each 15 minute period.

Table 1.3 – Summary of Level Crossing Down Time and Queues

Time	Total Down Time	Maximum Down Time	Northbound		Southbound	
			Flow	Max Queue	Flow	Max Queue
07:00	06:43	04:33	53	11	25	9
07:15	13:26	06:28	45	26	30	14
07:30	09:45	05:04	61	18	34	8
07:45	08:37	02:56	65	22	48	16
08:00	06:17	02:24	73	17	57	9

Time	Total Down Time	Maximum Down Time	Northbound		Southbound	
			Flow	Max Queue	Flow	Max Queue
08:15	09:55	03:15	86	18	57	15
08:30	10:34	04:44	60	25	45	21
08:45	05:33	03:54	69	16	45	10
09:00	09:07	09:07	51	35	49	20
09:15	07:39	05:30	55	26	44	14
09:30	07:27	05:48	57	22	60	18
09:45	06:19	04:19	45	15	54	17
16:00	08:44	07:24	62	35	65	27
16:15	12:18	05:52	44	40	48	30
16:30	11:21	06:24	59	40	51	35
16:45	09:20	04:44	67	22	88	35
17:00	07:53	02:49	68	22	92	25
17:15	09:28	05:57	49	25	41	30
17:30	11:50	03:48	55	19	60	27
17:45	07:28	05:52	57	31.5	61	25
18:00	12:40	04:39	60	43	60	30
18:15	11:56	03:54	49	43	52	24
18:30	05:43	05:43	58	20	71	23
18:45	12:22	04:46	43	11	38	24

- 1.7.8 Table 1.3 shows that in both the AM and PM peak there are points where the barrier is down for the majority of the 15 minute period.
- 1.7.9 The Northbound queues are generally higher than the southbound queues in both the AM and PM peaks.
- 1.7.10 Queue Lengths, with the odd anomaly, tend to increase throughout the peak period, with less queueing observed earlier in the peak.

1.8 Mortlake Station Pedestrian Access

- 1.8.1 Pedestrian surveys were carried out between 16:00 and 19:00 at all four entrances/exits to Mortlake Train Station.
- 1.8.2 The station has two exits to the north of the railway line. One through Sheen Lane Building Merchants (Entrance/Exit 1) and one via the footbridge (Entrance/Exit 2). There are two further entrances/exits to the south – one again via the footbridge and another via the station car park.
- 1.8.3 These are shown in Figure 1.11 below.

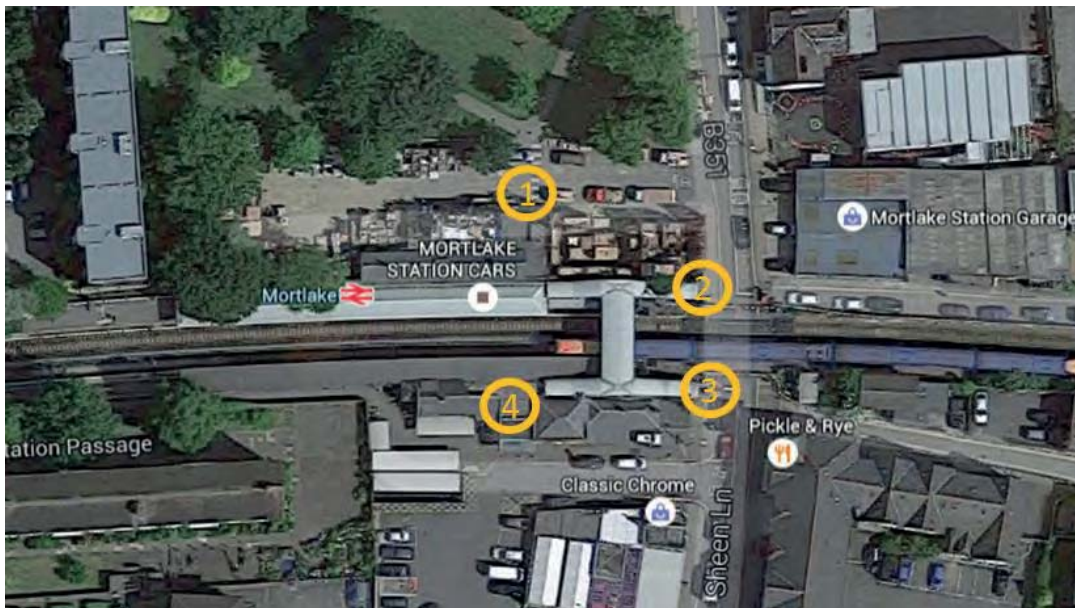


Figure 1.11 – Map of Mortlake Station Entrances/Exits

- 1.8.4 Tables 1.3 and 1.4 below details the number and proportion of pedestrians using each entrance/exit to the station.

Table 1.3 – Summary of Pedestrian Entry/Exit Movements at Mortlake Station AM Peak

Site	AM Peak					
	Entrance		Exit		Combined	
	No.	%	No.	%	No.	%
Site 1	615	18%	49	16%	664	18%
Site 2	216	6%	29	9%	245	7%
Site 3	639	19%	59	19%	698	19%
Site 4	1880	56%	178	57%	2058	56%
Total	3350	100%	315	100%	3665	100%

- 1.8.5 Table 1.3 demonstrates that there is more than 3,000 pedestrians entering the station in the AM peak than there are exiting.
- 1.8.6 The most frequently used Entrance/Exit is Site 4 with 56% of people entering the station using this entrance/exit and 57% of people leaving also using this Entrance/Exit.
- 1.8.7 Only 6% of people arriving at the station enter via Site 2 with only 9% of leavers exiting via Site 2.
- 1.8.8 18% and 19% enter via Sites 1 and 3 respectively, whilst 16% and 19% leave via these sites.

Table 1.4 – Summary of Pedestrian Entry/Exit Movements at Mortlake Station PM Peak

Site	PM Peak					
	Entrance		Exit		Combined	
	No.	%	No.	%	No.	%
Site 1	256	17%	330	16%	586	17%
Site 2	228	15%	172	9%	400	11%
Site 3	367	24%	292	15%	659	19%
Site 4	670	44%	1211	60%	1881	53%
Total	1521	100%	2005	100%	3526	100%

- 1.8.9 Table 1.4 demonstrates that the number of people entering and exiting the station in the PM peak has a greater similarity than in the AM peak.
- 1.8.10 The most common entry/exit point is again Site 4 (44%/60%), with Site 2 again being the least common entry/exit point (15%/9%)
- 1.8.11 Site 1 and 3 were observed to have 17% and 24% of the entry share in the PM peak, whilst they were observed to have 16% and 15% of the exit share.
- 1.8.12 Figure 1.12 below shows the total inflow and outflow for the station per 15 minute period.

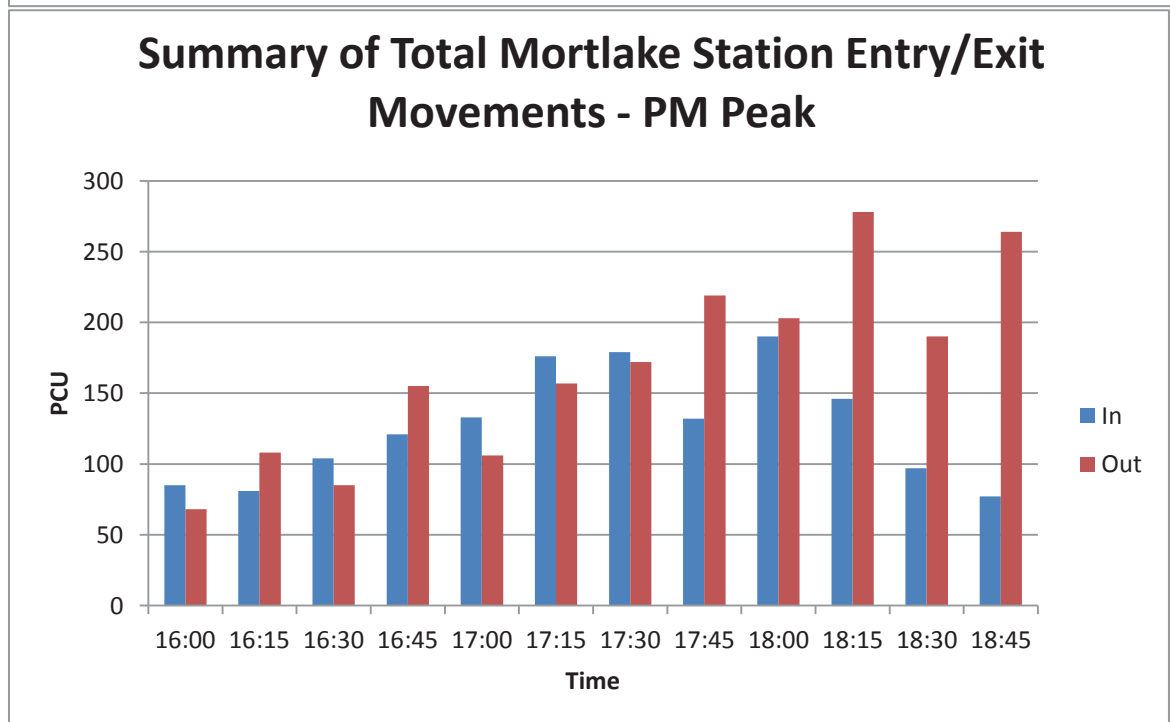
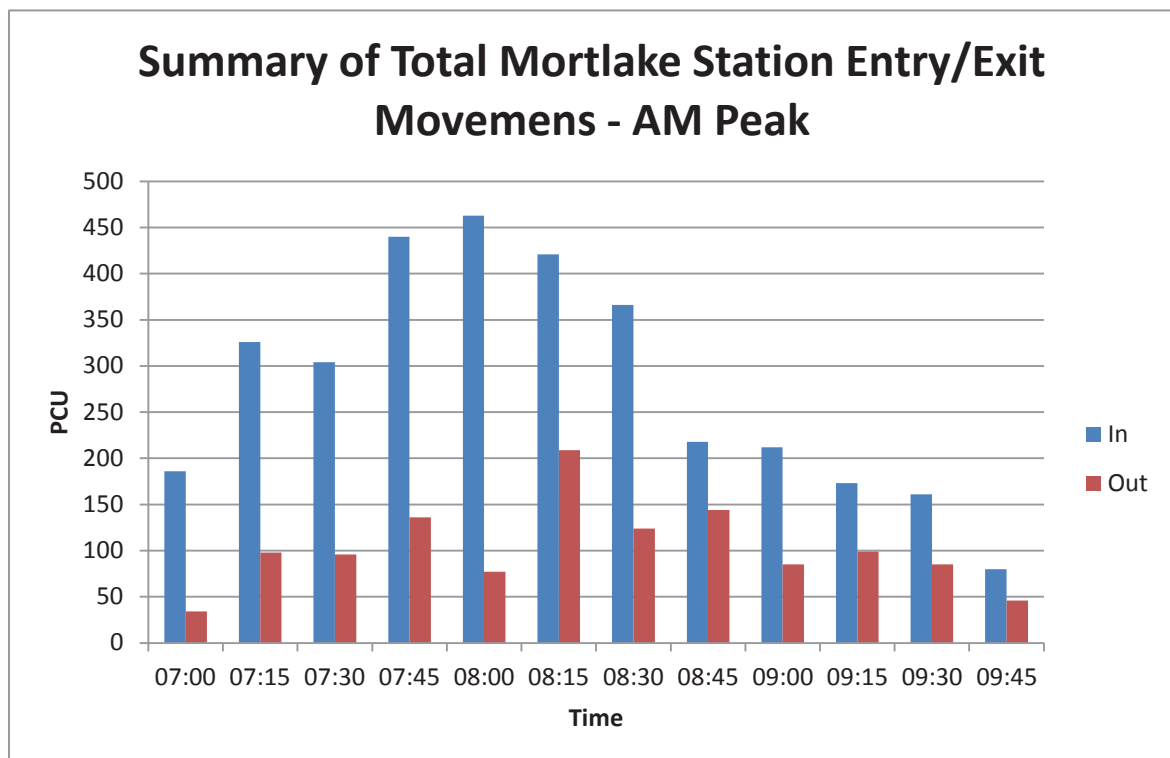


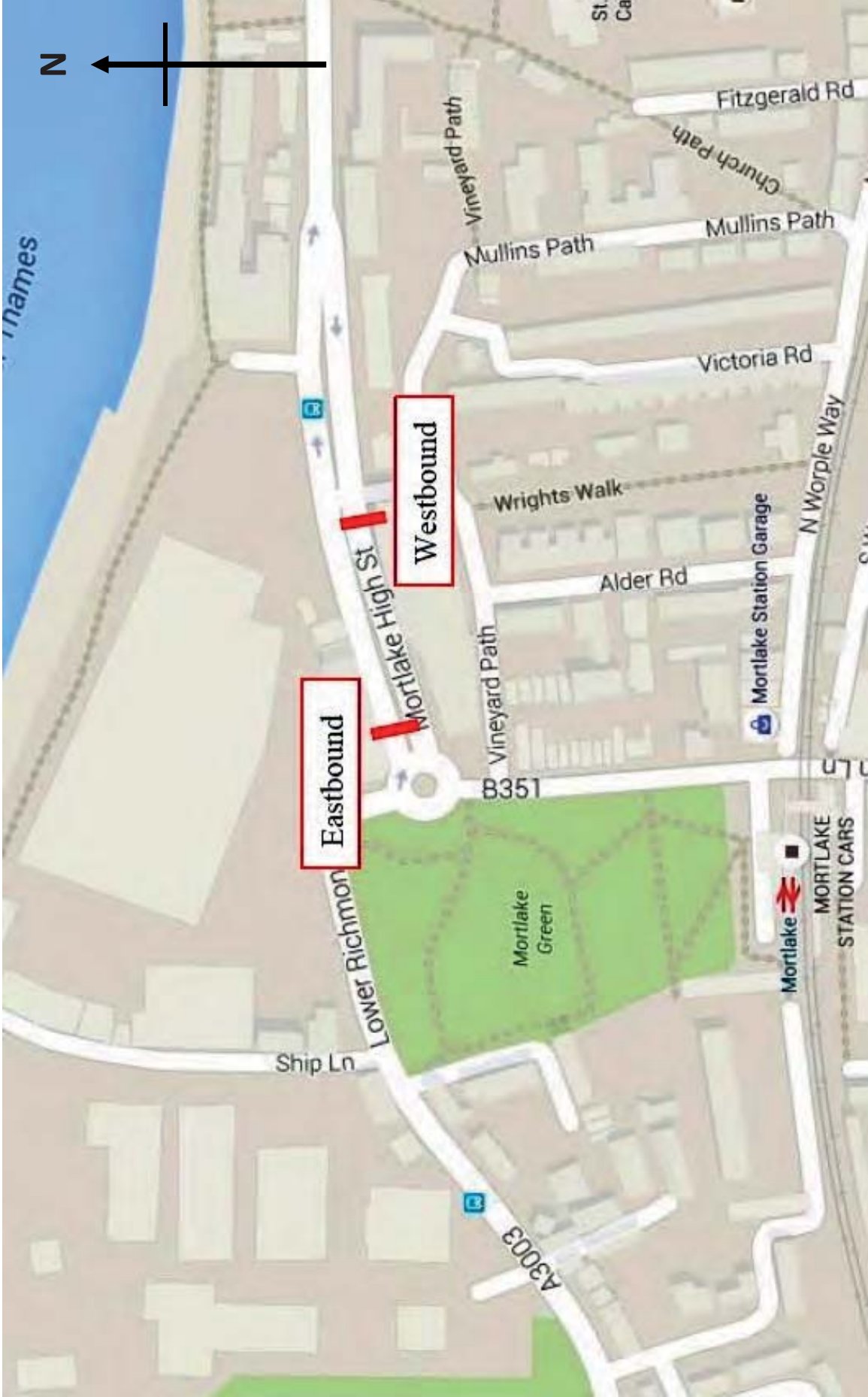
Figure 1.12 - Graph of Mortlake Station entry and exit movements in the Am and PM peaks


1.8.13 The figure shows that in the AM peak the peak time is shown as between 07:30 and 08:30 whilst in the PM peak it is between 17:45 and 19:00

1.9 Conclusions

1.9.1 In summary Nationwide Data Collection carried out Traffic Survey Data collection on behalf of Peter Brett Associates in June 2015.

- 1.9.2 The ATC data from Mortlake High Street demonstrated that over the course of a day eastbound flows were greater than westbound flows and that on average approximately 9,500 – 10,000 vehicles were observed in each direction per day.
- 1.9.3 The A31 Lower Richmond Road / Clifford Road / S Circular Road / A3003 Lower Richmond Road Staggered Signalised Junction is a primary junction where a large proportion of traffic from the Proposed Development will enter the wider highway network.
- 1.9.4 The total junction inflow and outflow for the Lower Richmond Road arm most likely to be used by development traffic currently varies between 11% and 21% of the total junction inflow.
- 1.9.5 41% of Existing AM peak traffic from Lower Richmond Road currently turns towards Chiswick Bridge with 39% making this turn in the PM peak, whilst 35% turns towards Richmond in the AM peak with 40% making this turn in the PM peak.
- 1.9.6 Surveys at Mortlake Station Level Crossing show that the majority of flow (57%) in the AM peak is travelling Northbound whilst it reverses to southbound in the PM peak (51%).
- 1.9.7 Average AM queues were recorded as 14 PCU Northbound and 9 PCU Southbound, whilst in the PM peak both directions average 18 PCU.
- 1.9.8 The average 'Red Time' in the AM peak was 3 minutes 13 seconds, whilst it was 3 minutes 12 seconds in the PM peak.
- 1.9.9 Mortlake Station has four access points with Site 4 being the most frequently used and Site 2 the least frequent.
- 1.9.10 An almost even number of people enter and exit the station in the PM peak but the number of people entering the station in the AM peak is more than 3,000 greater than the number exiting.



		Site / Location:	ATC sites	Project No:	6386	Drawing No:	6386-ATC	Drawn By:	MI
		Survey Date:	Sunday 12th to Saturday 18th - June 2016	Project Name:	Mortlake	Drawing Title:	Site Layout		
Survey Times:	24/7								



6386 / Mortlake
June 2016
Automatic Traffic Count

Site No.	Location.	Direction.	Speed Limit PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DFT Limit.	% > DFT Limit.	Mean Speed	85%ile Speed
ATC	Mortlake, sign post - Att. OSGR: TQ 20515 75934	East	30	12 June 2016	18 June 2016	68817	10474	9831	28	0.0	2	0.0	0	0.0	18.5	20.6