Verge / utility strip / potential footway
Town houses to have private driveways
Informal on-street parking retained
Carriageway widening to ensure space for two-way movements
Shared footpath / cycleway
Proposed raised crossing point
On-street parking spaces
Visitor car park
Sports Ground
Existing kerb line and wall retained
Location of access to underground car park
Proposed raised crossing point
Shared footpath / cycleway
Proposed bus stop to accommodate 2 buses. Existing shelter to be replaced with new shelter in new position
Proposed right turn lane
Proposed raised crossing point
Proposed Zebra crossing with raised surface
Existing parking bay to be retained
New dropped kerb access to no. 43 Oliver House
Relocated bus stop with realigned kerb and new shelter
Existing Zebra crossing to have surface raised
Existing on-street parking retained
Relocated signal controlled crossing with raised surface
Proposed raised crossing point
Existing bus stop and shelter to be removed
New footpath link to crossing
Existing footpath to be removed and landscaped
Existing signal controlled crossing to be removed
Footpath / cycle path widening to be agreed with LBRuT Parks Team
Existing refuge enlarged
New 'KEEP CLEAR' markings on roundabout
Existing Zebra crossing to have surface raised
Additional bridge signage to indicate alternative route for pedestrians to use footbridge rather than wait for barriers
Improve lighting and general refurbishment of existing footbridge
Set back stop lines to create advance areas for cyclists
Move bollards back to provide an increased area with enhanced paving for pedestrians to wait whilst the barriers are down.
On-street parking spaces
Proposed enhancement works along Thames Path
Location of access to underground car park
Nearside & offside lanes 73m long
Relocated bus stands (for 3 buses)
Proposed Zebra crossing with raised surface
Relocated bus stop with new shelter
Proposed raised crossing points
New right turn lane
Proposed raised crossing point
Existing parking bays retained
Car Club bays
Proposed raised crossing point and bellmouth narrowing
Existing bus stop and shelter to be removed
Relocated bus stop with new shelter

KEY:

- BUILDINGS
- CARRIAGEWAY
- SHARED SURFACE AREAS
- PEDESTRIAN AREAS
- SHARED FOOTWAY
- BUS STOPS AND BUS STANDS
- BUS SHELTERS
- GRASSED AREAS
- PLANTING (HEDGES & SHRUBS)
- CYCLE PARKING LOCATIONS

Mark	Revision	Date	Drawn	Chkd	Appd

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

Drawing Issue Status

FOR PLANNING

STAG BREWERY, MORTLAKE
ILLUSTRATIVE HIGHWAY LAYOUT
LOWER RICHMOND RD/MORTLAKE HIGH ST

Client
RESELTON PROPERTIES LTD

Date of 1st Issue	Designed	Drawn
07.07.2020	REM	REM
A0 Scale	Checked	Approved
1:500 @A0	PW	PW

Drawing Number: 38262/5514/026
Revision: -

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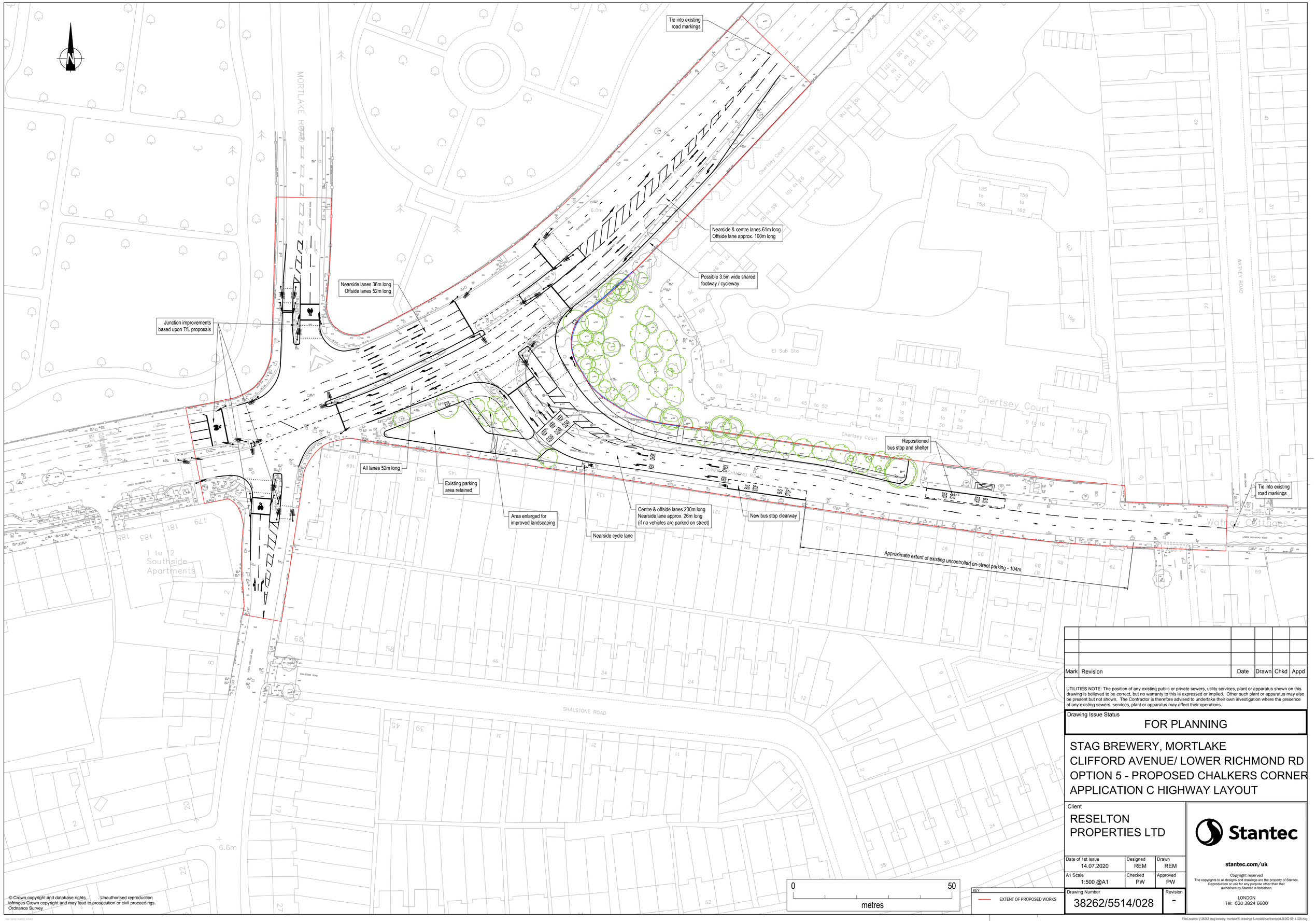
stantec.com/uk

LONDON
Tel: 020 3824 6600

0 50
metres

File Location: j:\38262-stag brewery, mortlake\3. drawings & models\acad\transport\38262-5514-026.dwg



0 50
metres

KEY:
EXTENT OF PROPOSED WORKS

Mark	Revision	Date	Drawn	Chkd	Appd

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

Drawing Issue Status
FOR PLANNING

STAG BREWERY, MORTLAKE
CLIFFORD AVENUE/ LOWER RICHMOND RD
OPTION 5 - PROPOSED CHALKERS CORNER
APPLICATION C HIGHWAY LAYOUT

Client
RESELTON PROPERTIES LTD

Date of 1st Issue	Designed	Drawn
14.07.2020	REM	REM
A1 Scale	Checked	Approved
1:500 @A1	PW	PW
Drawing Number		Revision
38262/5514/028		-

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LONDON
Tel: 020 3824 6600

user name: mallett, richard

File Location: j:\38262 stag brewery, mortlake\5. drawings & models\cad\transport\38262-5514-028.dwg

Appendix H TfL Modelling Expectations Report

Stag Brewery, Richmond

Modelling Expectations Document

11/03/2020

EVERY JOURNEY MATTERS

Modelling Expectations for Stag Brewery, Richmond

Scheme Summary

The proposals constitute redevelopment of area around Stag Brewery Mortlake in Richmond. The red line boundary covers land either side of Ship Lane with main site bounded by River Thames along the northern perimeter and by Lower Richmond Road from the south. The nearest TLRN network is A316 GREAT CHERTSEY ROAD and A205 CLIFFORD AVENUE. Proximity of TLRN network to the site is shown in figure below.

The application is supported by a Transport Assessment(**TA**)[1] dated back to February 2018 setting out development traffic and highway design changes associated with the proposals. In essence the application seeks approval for following:

- *Application A - A hybrid application to include the demolition of existing buildings to*

[1] TA Part 1.pdf

allow for the comprehensive phased redevelopment of the Site.

- *Application B - A detailed planning application for the school (on land to the west of Ship Lane).*
- *Application C - detailed planning application for highways and landscape works at Chalkers Corner.*

At present the applicant and TFL is assessing possibility of using survey data as collected in 2017 by the applicant for purpose of TA. Thus there is no exact reference in modelling scope as to what survey dates are expected to be used.

Study Area

As discussed with TfL Network Performance team the study area must include SCOOT region R278 (Chalkers Corner) as well as R578 (Clifton Avenue/ Upper Richmond Road) and partially R620 (A316 Chertsey Road) as shown on the figure below (Figure 1). At present it is expected that following signalised junction within the required SCOOT regions:

- 24/ 011 & 24/201 & 24/202 - A205 CLIFFORD AVENUE - A205 MORTLAKE RD - A316 LOWER RICHMOND ROAD - CHALKERS CORNER;
- 24/199 & 24/200) - (A316 CLIFFORD AVENUE - A3003 LOWER RICHMOND ROAD - CHALKERS CORNER)
- 25/068 - GREAT CHERTSEY ROAD - HARTINGTON ROAD - DAN MASON WAY
- 24/147 - A205 CLIFFORD AVENUE BY TANGIER ROAD (NEARSIDE TOUCAN)
- 24/004 - A205 UPPER RICHMOND ROAD WEST - A205 CLIFFORD AVENUE
- 24/215 - A205 UPPER RICHMOND ROAD BY DEANHILL ROAD BY GRAEMESDYKE AVENUE

Priority junctions that should also be incorporated in modelling scope are as follows:

- Sheen Lane/ Lower Richmond Road/ Mortlake High Street
- Any new/existing development access roads (either signalised or priority controlled)

If necessary, entry links should be extended so that all vehicles can enter the network and consideration should be given to whether the proposal might increase queuing. The links should be long enough so that a journey time marker can be placed beyond the back of the queue in both base and proposed models.

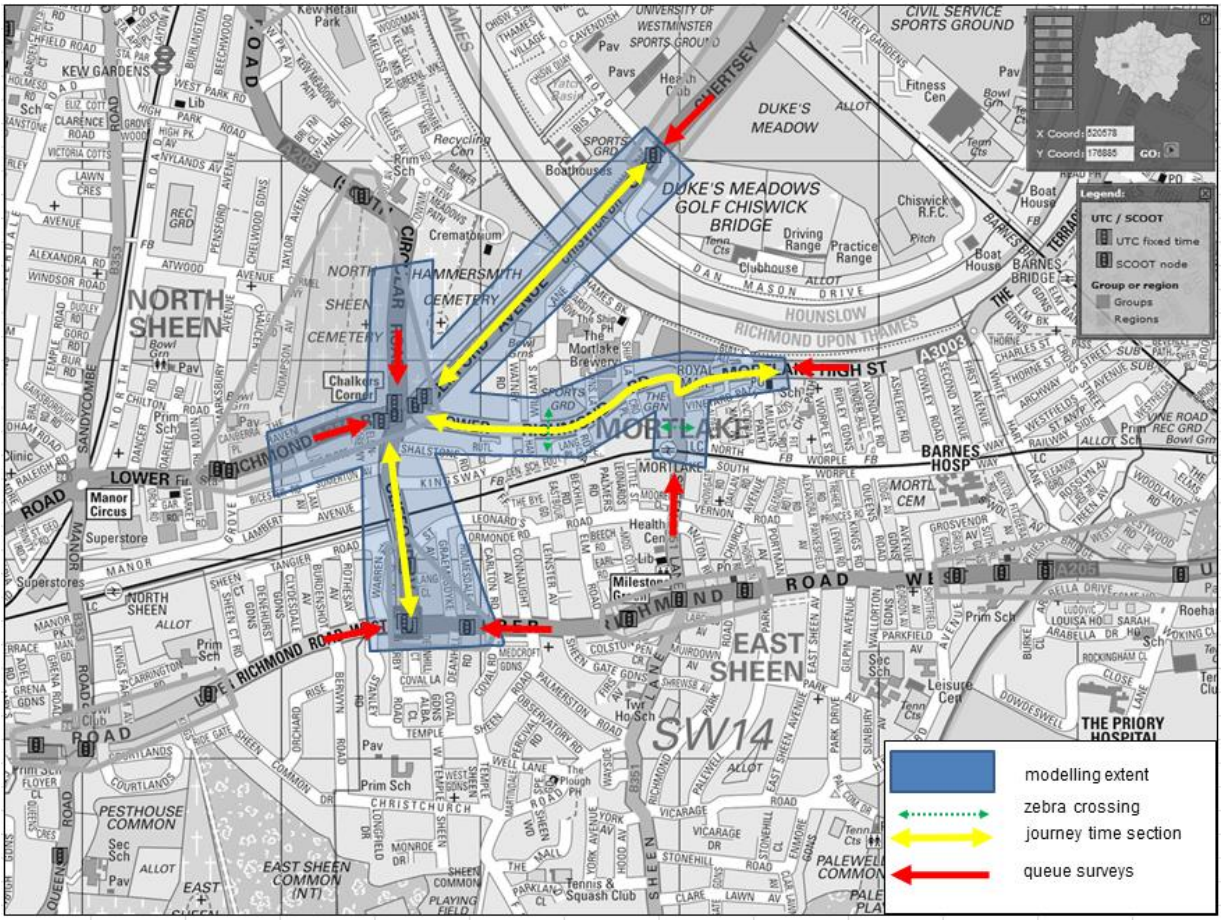
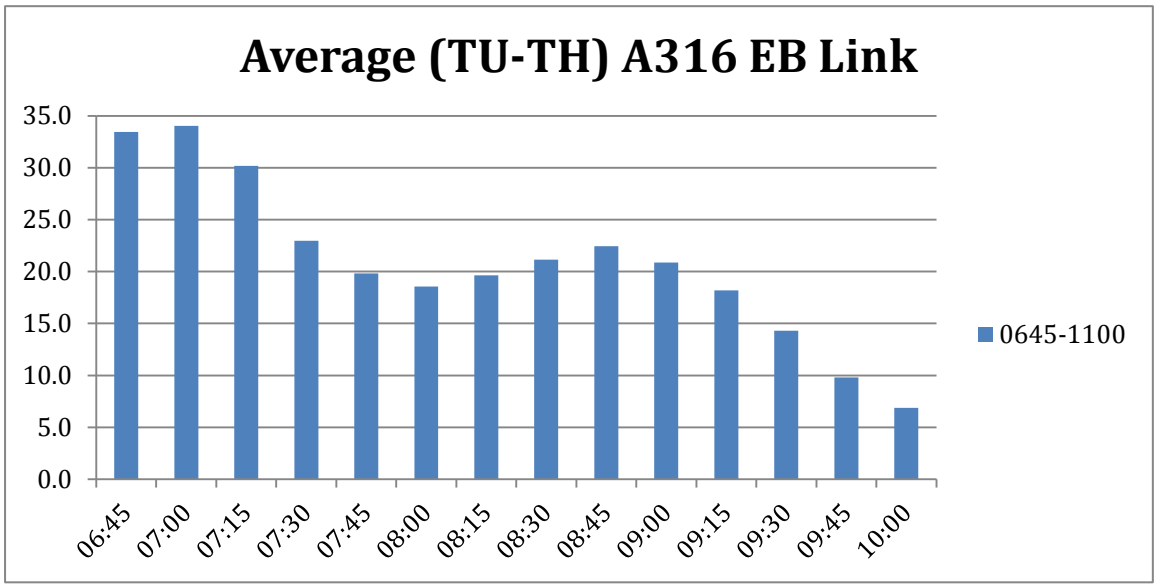


Figure 1: Study area

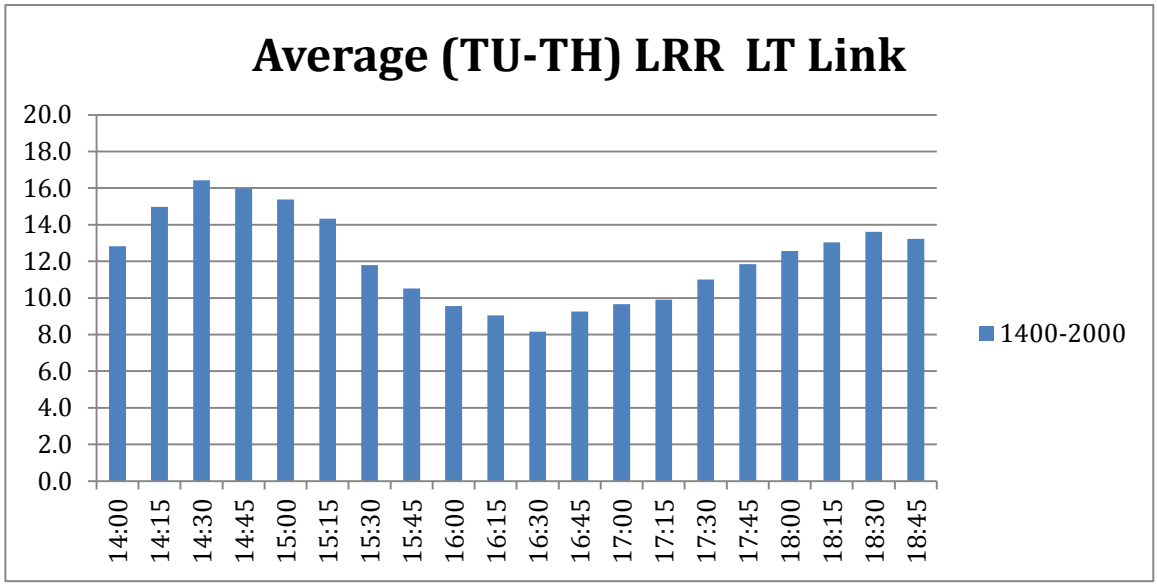
Peak Periods

The weekday morning and evening peak as well as one the school afternoon peak hour should be modelled. At present, based on current SCOOT link analysis (congestion outputs), the following simulation periods should be considered:

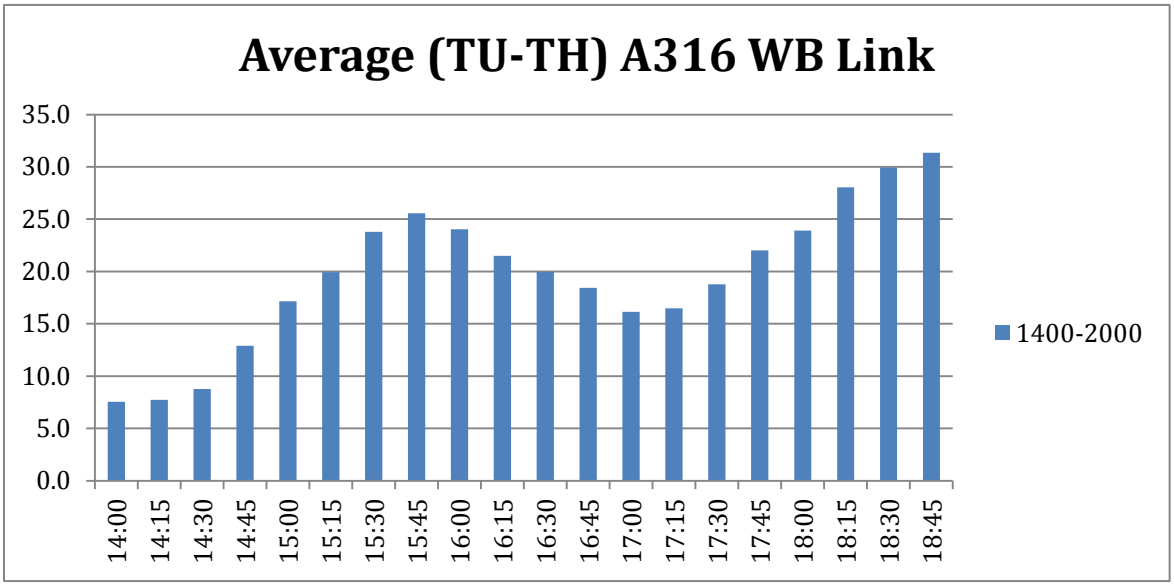
- AM Peak (1hr peak model) – please consider setting up queue and flow surveys between 06:30-10:00



- School Peak (1hr peak model) - please consider setting up queue and flow surveys between 14:00-16:00



- PM Peak (2hr peak model) – please consider setting up queue and flow surveys between 16:00-20:00



The peak hour(s) will be established based on peak period surveys, with the busiest network and development peak selected for testing.

Software Requirements

MAP standards are set up for either Aimsun or VISSIM models, thus these two would be preferable choices when it comes to software requirements. TfL does not insist on which version of microsimulation will be used for this exercise but recommends that the applicant will inform TfL about the version that is planned to use so TfL model file templates can be passed over to the applicant. This will ensure initial modelling parameters are set in accordance to TfL standards.

Calibration / Validation Criteria

As per MAP standards calibration and validation require following modelling outputs to be checked against onsite collected data;

1) Traffic Flows
2) Signal demand data (obtained from TfL signals directorate)
3) Queues (as specified in Figure 1)
4) Saturation flows (all signalised stop lines)
5) General traffic journey times
6) Public transport journey times (TfL iBus data or alternative)

Supporting SCOOT messages should be set to record green times/cycle times for the day of new surveys (date to be confirmed). Should the TfL system failed to record signal data for specified day,

a video surveying should be used to confirm green split and cycle time and reflect the peak hour signal timings' fluctuation. Alternately different date can be chosen to re-record the data if needed.

As part of model calibration and validation, on-site collection of saturation flow is expected to be collected for signalised stop lines. Onsite saturation flow measures can be replaced by RR67 values if observed conditions are not optimal for data collection.

As part of internal checks, saturation flow values should be reviewed for correctness and any unrealistic values should be excluded before the average is used in the model. It is accepted to use separate saturation flow values per peak should they prove different due to peak specific characteristics and/or conditions. Although for consistently it is preferable if average of two peaks collection is used.

In terms of details of microsimulation calibration/ validation criteria these should follow MAP requirements and be as follows

1) Turn volume validation 85% within GEH of 5 or less (all entry links into the network should show modelled flows within 5% of observed flows.
2) Saturation flow within 10%
3) ACHK Data within 10%
4) Journey time validation 85% within 15% or 1 min

Modelling Data

It is expected that the applicant will collect all relevant data to calibrate and validate microsimulation models according to MAP standards.

At present it is expected that the applicant will collect new survey data in 2020 including ATC, MCC, queue surveys etc. within proposed model extent (Figure 1). These will be checked against already provided data to see if the Hammersmith Bridge closure has material impact on validity of previously collected surveys. Should it be agreed that the "old" surveys are not fit for purpose, the modelling exercise will be carried out using "yet to be collected" 2020 surveys.

It is expected that impact of the level crossing (Mortlake Station) will also be captured in the during the simulation period. Both length and frequency of crossing barriers being down will be established through video surveying or details obtained from Network Rail (if possible).

Chalkers Corner junction is expected to be surveys as OD (origin-destination) rather than MCC.

The applicant is expected to gather bus journey times and dwell times for any routes within the scope of modelling. This can be either collected on site or using iBus data. Once bus route sections are identified the request for above data can be sent directly to iBus team - iBusCountdownDataTeam@tfl.gov.uk. It is expected that bus journey times will be collected on bus stop to bus stop basis with separate dwell time data obtained for each stop and of each individual route.

With respect to general traffic journey time data, it is TfL preference to obtain GPS based data as it provides far larger overall sample than ordinary floating car surveys.

Please contact TfL should you wish to seek clarification on survey spec.

Data to be collected on site

Collection on modelling data should be performed according to Traffic Modelling Guidelines (TMG) and include the following:

1) Traffic surveys- *as per TMG requirements*
2) Saturation flow measurements – *as per TMG requirements*
3) Journey time surveys - either according to Traffic Master database sections or "stopline to stopline" markers (see Figure 1 for details)
4) Signal data surveys (via TfL UTC SCOOT messages/ manual on site collection for non-UTC sites)
5) Queue surveys - *as per TMG requirements*
6) Parking and loading – optional should it affect capacity and traffic progression
7) Speed limits - as per site observation/ limit
8) Pedestrian flows – for zebra crossings (mandatory) or/and signalised pedestrian crossing operating outside of UTC system (optional)

It is expected that PT (Public Transport) will be entered separately from the rest of the traffic composition. This will allow more accurate analysis of the future year scenarios given vital role of buses in the area. Decision about incorporating cyclists/motorcycles will be made once new surveys are completed based on combination of factors i.e. total cycle flows and/or their % ratio in overall vehicle composition.

Signal Data Coding

Consultant is expected to obtain relevant signal data for the junctions listed within study area. That includes UTC Plans and SCOOT/ UTC Timetable for the date of surveys as well as possible retrospective Astrid data and ACHK) Should the scope of modelling include any sites that aren't UTC, onsite collection is required to establish following (where applicable): demand dependency, extended blackout or flashing-amber usage as well as average green, stage sequence, cycle time

If agreed with the TfL representative additional SCOOT messages (different days) may need to be recorded to confirm on cycle and green split.

Depending on modelling scenario the applicant can use "Anyplan VAP" files or UTC SCOOT to develop microsimulation models.

For purpose of this exercise, in design scenario models, it is expected that the signal timings and method of control of each individual junction is to be kept as currently coded unless network

performance deteriorate significantly or design changes force signal operation amendments- these should ideally be discussed with TfL Auditor prior amendments in microsimulation models.

Any new / revised signal operation that includes new phases, revised stage arrangements or/ and changes to intergreens are to be coded in LinSig first and agreed before coding in microsimulation models.

Vehicle types to be modelled

1) Car
2) HGV
3) Taxi
4) Motorbikes
5) Cyclists
6) Pedestrians

All models should include Cars/LGV, HGV, MGV, and Taxis, and possibly Cyclists/ Motorbikes and Pedestrians. All bus routes should also be modelled as separate type.

Alternatively "Cyclist/ Motorbike" inputs could be incorporated within Cars/ LGV using PCU factor should survey results concluded its volumetric impact is minimal. This will be determined through discussion with TfL once vehicle composition statistics per approach per signalised junction is presented to the auditor.

It is accepted that committed and proposed dev flows may be grouped into separate types and assigned using bespoke routings.

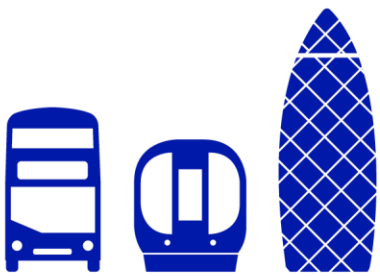
It is expected that vehicle behaviour and link types will be kept as per provided microsimulation template and used accordingly to on site characteristics.

If cyclist modelling is required, there may be a need for additional behaviour/s relating to the accurate modelling and interaction of vehicles and cyclists – this will need to be assessed when more is understood regarding the local network. On occasion a further additional behaviour may be needed if more aggressive merging happens anywhere within the local network.

Additional Modelling

As discussed it is expected that LinSig models will be used to develop signal strategy and tests of new signals/ revised operation before it get transferred into microsimulation models.

The performance analysis will be done using microsimulation model for the area as described in Figure 1. All models should be future-proofed using "Opening year" flow predictions.



Proposed Modelling

At this stage in time it is expected that models will be built to reflect current most up to date trip generation scenarios from the site. Any background flow patterns with possible global factors that being used on entry links to capture the corridor-wide growth from developments outside of the study area that were agreed in the previous modelling exercise will need to be reviewed in light of revised survey date. That also applies to all other committed development trips that are assigned within modelling boundary – it means reviewing and agreeing list of committed developments as used in planning application documents.

All future year modelling assumptions and methodologies including Future Year, Do Nothing and Do Something will need to be agreed and signed off at the Stage 4 meeting (latest) to ensure that any Future Year modelling is developed based on widely accepted modelling principles

When it comes to the Stage Brewery (SB) demand flows, as long as demand and distribution as provided in submitted TA is agreed with TfL Case Officer, this should be applied in proposed scenario modelling. Same applies to predicted servicing and delivery trips and routing.

It is expected that consultant will summarise all above agreements as part of modelling technical note.

The network performance analysis will need to focus on predicted impact of the scheme on bus, cycle (to be confirmed), pedestrian (ped wait time) and general traffic according to Scheme Impact Report (SIR) requirements. This should be summarised in a short technical note.

Any new signalised junction designs should be accompanied by LinSig models with measured new intergreen matrices, phase mins, method of control and proposed phase delays (if applicable).

Any changes to signal operational that do not require physical changes should also be recorded and corresponding signal update sheets to be provided.

Future year scenario models will be expected to be built to maintain TfL modelling standards including saturation flow calibration and flow distribution checks. Model submissions should include all validation and calibration data as well as supporting technical note describing any modelling assumptions and caveats including those carried over to proposed modelling.

All models should also be available for checks and submitted in advance in accordance to MAP. Should consultant have any questions please refer to TfL Modelling & MAP guidelines for more information.

Any LinSig signal development work will be carried out in version 3.2 of the software.

Seed Runs

A minimum of 20 random seed runs will be required for model validation and comparison between base and proposed model runs. However, the number may be increased if required, i.e. if discrepancy between seed runs has been observed.

Documentation

The following guidance documents will be used for assistance in model building, calibration and validation.

1) TfL Modelling Guidelines Version 3.0
2) VISSIM Saturation Flow Tool v1.03 - User Guide
3) SQA-0685 - MAP Engineer Guide for DE, CE & MAE
4) Software Manuals

Programme

In order to ensure smooth modelling audit process the consultant is asked to provide modelling programme with expected modelling submission dates according to TfL response times as listed in MAP documents. Once received the timescales will be subject to discussion to ensure that the resources can be secured in advance and proposed programme is achievable considering proposed modelling expectations.

Working Relationship

Any meetings between modeller and auditor will need to be agreed, e.g. frequency, location, time of the meetings as and when required, as the project progresses.

Contact Details

Michal Miklasz - Spatial Planning/ Network Performance Modelling Liaison, Spatial Planning
Matthew Lloyd – Principal Network Manager (South) – Network Performance Delivery, Surface Transport
Rachel Taylor -Principal Network Manager (North West) – Network Performance Delivery, Surface Transport

Contact

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Phone 0203 054 5525

Appendix I TN036 Stantec Response to TfL Modelling Report

TECHNICAL NOTE

Job Name:	Stag Brewery, Mortlake
Job No:	38262 (draft final)
Note No:	036
Date:	20th April 2020
Prepared by:	George Daugherty and Siddharth Iyer
Reviewed by:	Peter Wadey and Greg Callaghan
Subject:	**Response to the TfL Modelling Expectation Report (11th March 2020)**

Introduction

This note provides a response to the Modelling Expectations Document (MED) issued by TfL on the 17th March 2020. The MED sets out the scope for the traffic modelling, TfL deem necessary to assess the highway impacts and mitigation being proposed by the redevelopment of the Stag Brewery site in Mortlake.

We understand TfL guidelines state that the extent of the modelled area should include all junctions close to the development that have a dependency on each other. The MED therefore recommends the modelled area is extended beyond Chalkers Corner to include adjacent junctions on the A205 South Circular and A316.

The following makes a case for the scope to be revised in line with the previous planning application for the site. This is predominantly based on the level of development trips forecast and their likely impact on the wider network but also additional external factors. These factors include the temporary closure of Hammersmith Bridge and the impact the COVID-19 lockdown is having on the opportunity undertake traffic surveys. These two factors limit model development to data collected in 2016 and 2017 which were not specified to develop a VISSIM model for the area. This potentially compromises the integrity of the model defined by the MED so a more compact model is proposed to provide a more accurate assessment of the highway mitigation proposed at Chalkers Corner and on A3003 Lower Richmond Road.

Following the closure of Hammersmith Bridge in April 2019, traffic surveys were undertaken at, and on the approaches to the Chalkers Corner junction. These surveys were undertaken to understand the impact the bridge closure on traffic flows through Chalkers Corner and so were limited in the data they collected. There is however an opportunity to use this data to develop a post-bridge closure model of Chalkers Corner and the challenges involved are discussed in the final section of this note.

Background

Pre-Planning

The development of highway proposals to mitigate the impacts of the development required extensive traffic surveys and traffic modelling assessments. These assessments included:

- **Strategic Road Network**. The South London Highway Assignment Model (SoLHaM) was re-calibrated/ validated for the base year and 2031 future year models. Agreed development trips were assigned to the 2031 future year models which indicated that the only junction likely to be significant impacted was the Chalkers Corner junction. Highway mitigation was therefore focused on this junction.
- **Chalkers Corner**. LinSig models (LMAP compliant) were developed as part of the Transport Assessment to demonstrate the scheme proposals for Chalkers Corner would mitigate development trips.
- **Mortlake Roundabout** (Lower Richmond Road j/w Sheen Lane and Mortlake High Street). This was modelled in ARCADY with the results concluding the junction would benefit from an additional left turn flare lane along the north side (eastbound movement) of Lower Richmond Road.
- **Sheen Lane j/w Upper Richmond Road**. This was modelled in LinSig but no mitigation proposed.

In addition, a preliminary VISSIM model was developed for Chalkers Corner and the Lower Richmond Road/ Mortlake High Street corridor including the Mortlake Roundabout and the Sheen Lane Level Crossing. This model was developed for public consultation purposes to give an indication of the likely changes to traffic queues on the approach to Chalkers Corners. While TfL data sets were used to ensure the model provided a good representation of traffic conditions after the implementation of the Chalkers Corner scheme it was not taken through TfL's MAP.

The Chalkers Corner scheme realigned Lower Richmond Road north-eastwards towards Chiswick Bridge to lengthen the internal reservoir (see Drawing Number: 38262/5501/51E). The LinSig assessment established that this provided the additional capacity required to accommodate car trips generated by the development but also improve the crossing facilities for pedestrians and cyclists. Through discussions with TfL it was agreed that a standalone LinSig assessment[1] (via LMAP) for the junction would be acceptable for the purposes of planning for the following reasons.

- The SoLHAM assessment indicated that development trips would have only a minor impact on the wider highway network (see TN03 – SoLHAM Forecast Assessment).
- Following planning approval, the scheme would be subject to a full VMAP as part of the Works and Scheme Notification processes required by the Traffic Management Act 2004 (TMAN).

Post-Planning

Following rejection of the Chalkers Corner scheme at Planning Committee in January, the scheme was revised to respond to the reasons for refusal. This resulted in a highway layout that retained the existing alignment of Lower Richmond Road but added a left turn flare, ensuring the proposals remained within the highway boundary (see Drawing Number: 38262/5501/138). This layout reflected an option developed by TfL as part of proposals for a Quietway cycle route along the A316.

This updated road layout was tested using LinSig by revising the approved Stage 3 LMAP models but due to limitations of the LinSig software the assessment proved inconclusive in assessing the benefits. Part of this included the need to understand how bus journey times along Lower Richmond Road would be affected.

To provide a more accurate assessment of the left turn flare and how it could improve the operation of the internal reservoir, a preliminary VISSIM model was developed. The base model used the traffic signal timings and saturation flows from the approved Stage 3 LinSig model. The base models where only partially calibrated/ validated but the proposed models suggested the updated scheme would have a positive impact on the operation of the junction. It should be noted that the proposed models used a revised trip generation but same distribution analysis to reflect an enlarged development with more affordable housing and less car parking. The net effect of the enlarged scheme was to reduce the overall number of car trips generated by the development and this is currently being reviewed by TfL.

The findings of this outline modelling assessment and revised trip generations are described in Technical Note 34. A summary of the trip generation and distribution is provided in Appendix A of this note but which is still to be agreed with TfL.

Data Collection

As part of the Pre- and Post-Planning stages traffic surveys were undertaken. These are summarised in Table 1 and
Figure 1. Some locations indicate 'no data' which will be discussed further in later sections that assess the feasibility of developing a VISSIM model using existing data sets.

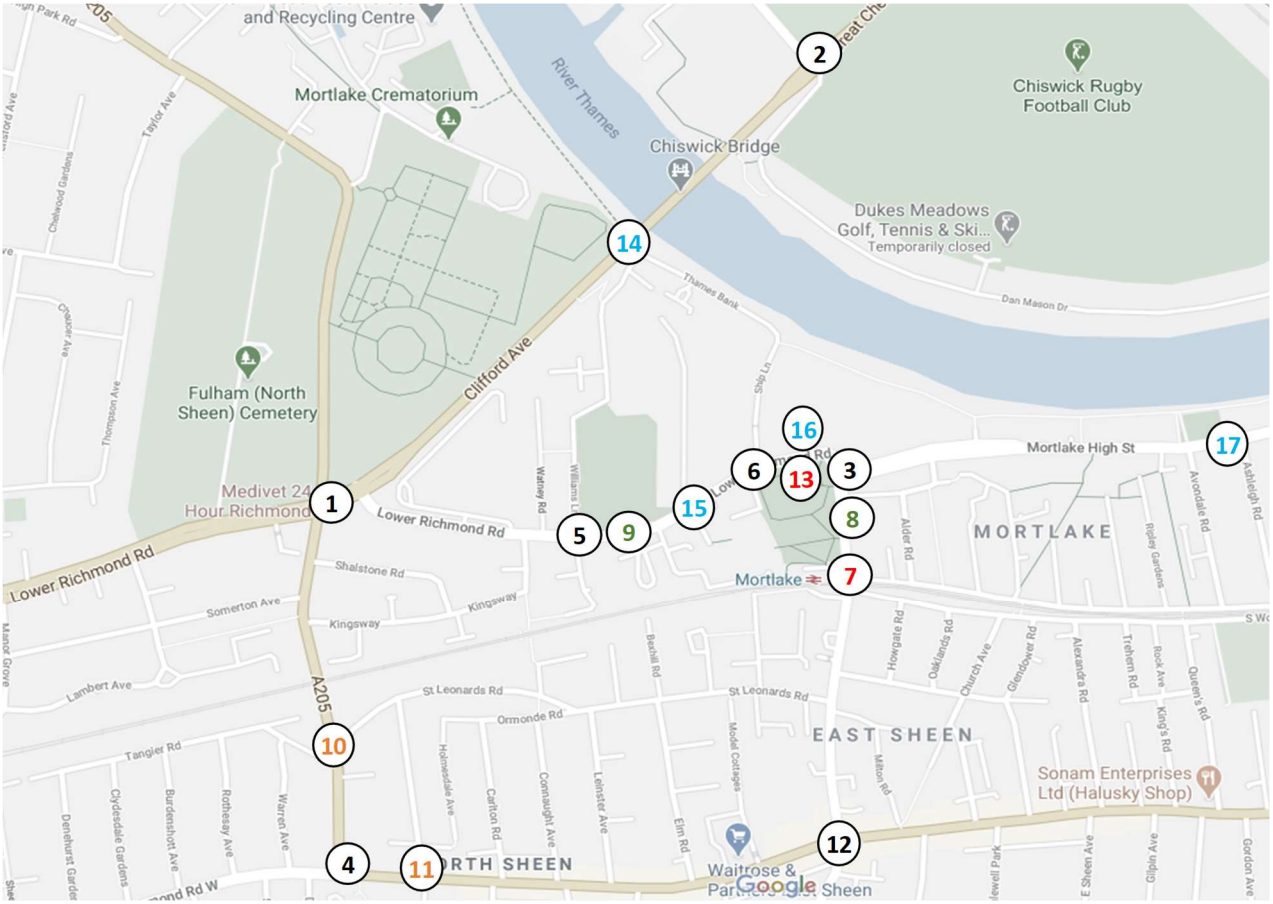
Table 1: Summary of traffic data collection

No.	Location	Description Survey
1	Chalkers Corner junction	CTC (Jun-16, Jun-17, Sept-17, June-19) Queue Length (Jun-16)
2	A316 Great Chertsey Road j/w Hartington Road	No data
3	Mortlake roundabout	CTC (Jun-16, Jun-17) Queue Length (Jun-16, Jun-17)

[1] This used survey data collected in September 2017

No.	Location	Description Survey
4	A205 Upper Richmond Rd j/w Clifford Avenue (South)	CTC (Sept-17)
5	Lower Richmond Road j/w Williams Lane	No data
6	Lower Richmond Road j/w Ship Lane	CTC (Jun-17)
7	Sheen Lane Level Crossing	CTC (Jun-16) Queue Length (Jun-16) Downtime (Jun-17)
8	Sheen Lane Zebra Crossing	Pedestrian crossings (Jun-17)
9	Lower Richmond Road Zebra Crossing	No data
10	A205 Clifford Avenue (South) Toucan Crossing	No data
11	A205 Upper Richmond Road Puffin Crossing	No data
12	A205 Upper Richmond Road j/w Sheen Lane	CTC (Jun-16, Jun-17, Sept-17)
13	Lower Richmond Road (Puffin)	No data
14	A316 Clifford Avenue (North)	ATC (Jun-17, Jun-19)
15	Lower Richmond Road	ATC (Jun-17)
16	Lower Richmond Road	ATC (Jun-17)
17	Mortlake High Street	ATC (Jun-16, Jun-17)

Figure 1: Traffic data collection sites



Modelling Expectation Document

To confirm the benefits suggested by the preliminary VISSIM assessment, the scheme now needs to progress through TfL's MAP and as a precursor to the MAP Stage 1 meeting, a Modelling Expectation Document (MED) has been issued by TfL.

The MED sets out the requirements of a VISSIM model to assess the impact of the development and that the model extents should include a wider network of junctions including:

- A316 Lower Richmond Road j/w A205 Clifford Avenue and A205 Mortlake Road (Chalkers Corner)

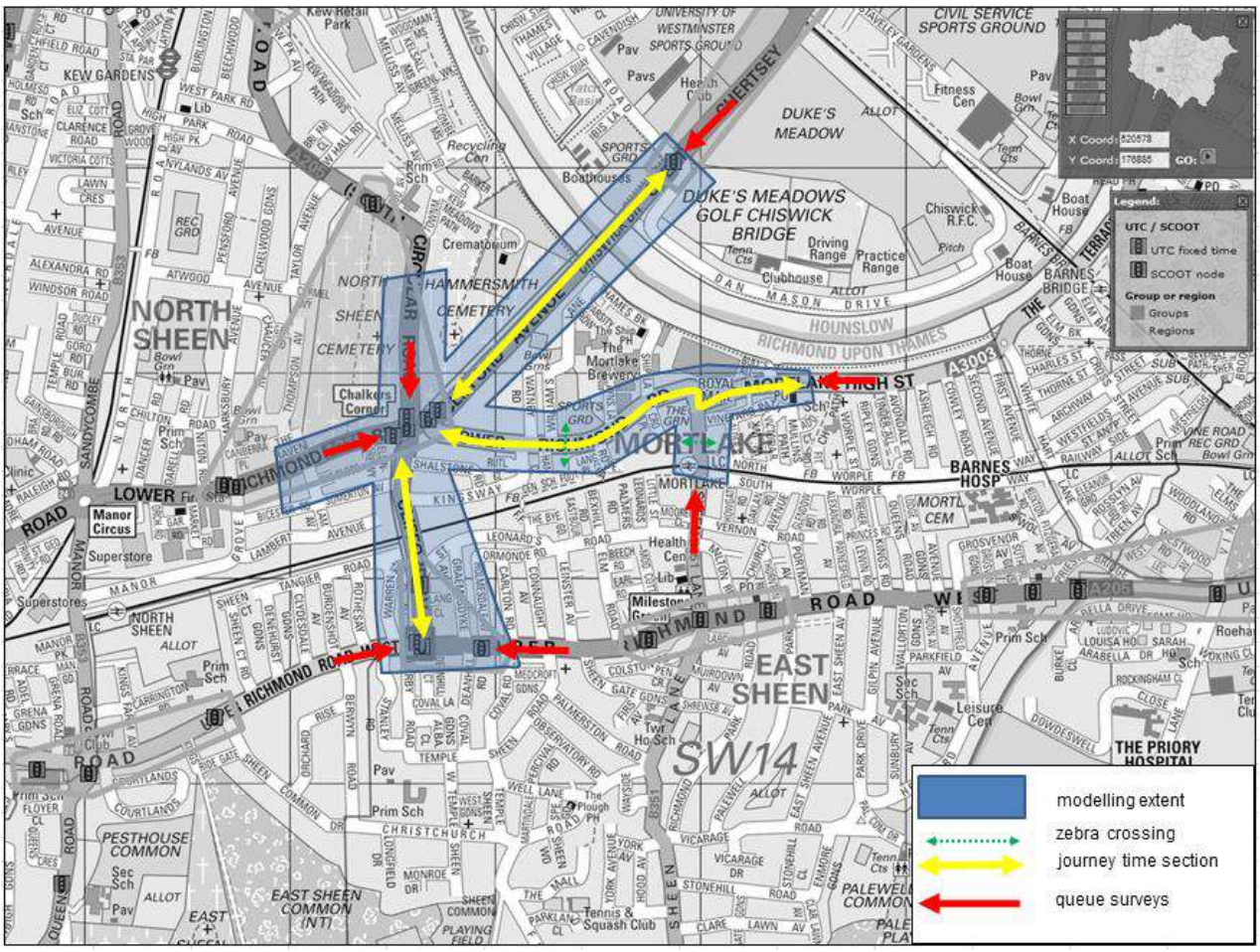
- A316 Clifford Avenue j/w A3003 Lower Richmond Road (Chalkers Corner)
- A316 Great Chertsey Road j/w Hartington Road and Dan Mason Way
- A205 Clifford Avenue (South) by Tangier Road (nearside Toucan)
- A205 Upper Richmond Road j/w A205 Clifford Avenue
- A205 Upper Richmond Road by Deanhill Road and Graemedyke Avenue (Puffin Crossing)

Priority junctions that should also be incorporated are:

- Sheen Lane j/w Lower Richmond Road and Mortlake High Street (Mortlake Roundabout)
- Any new/ existing development access roads (either signalised or priority controlled)

The proposed study area is provided in Figure 2 taken from the MED report.

Figure 2: MED Study Area



Furthermore, the MED states '*If necessary, entry links should be extended so that all vehicles can enter the network and consideration should be given to whether the proposal might increase queuing. The links should be long enough so that a journey time marker can be placed beyond the back of the queue in both base and proposed models.*'

Response to the MED

Model extent

The justification for including the above junctions is not clear but the MED states it is based on discussions with TfL Network Performance team that confirm the '*study area must include SCOOT region R278 (Chalkers Corner) as well as R578 (Clifton Avenue/ Upper Richmond Road) and partially R620 (A316 Chertsey Road)'*.

The following sets out why it is felt the model extents should be reduced to cover only Chalkers Corner junction and its immediate approaches from A205 Mortlake Road, A316 Clifford Avenue (North), Lower Richmond Road, A205 Clifford Avenue (South) and A316 Lower Richmond Road. This will include the Lower Richmond Road junctions with Ship Lane, Williams Lane, the Mortlake roundabout and the new development accesses.

Development trip impacts

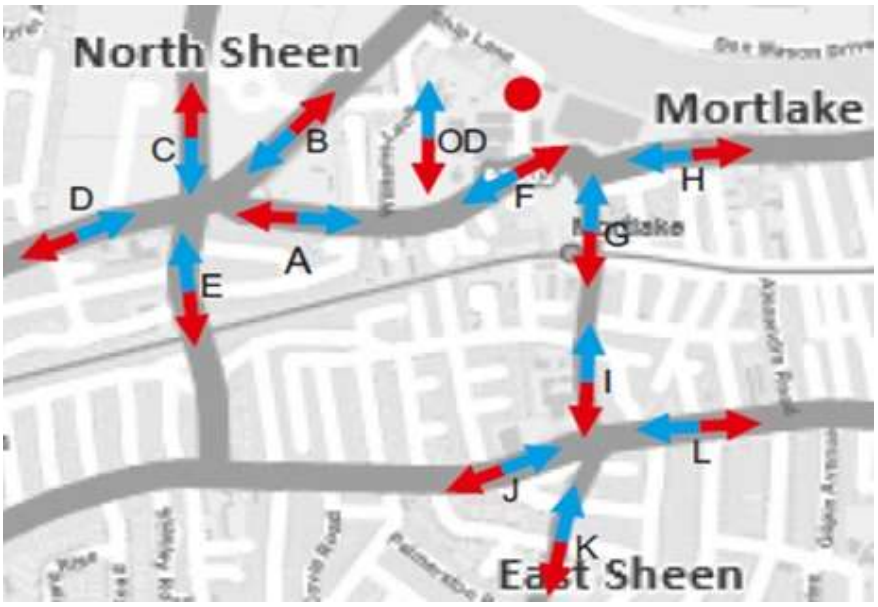
Overview

The car trips generated by the development were approved by TfL as part of the previous Transport Assessment, however these have subsequently been revised to reflect an enlarged development with more affordable housing and less car parking. TfL are currently reviewing the updated trip generation as set out in Technical Note 34, but the expectation is that the number of development car trips will be lower than those previously reported.

To understand how these car trips potentially impact the local highway network, the trips have been distributed based on the origin and destination of those generated by Zone 58139 within the approved HAM model [This needs to be confirmed/ referenced]. The percentage split of trips across the highway network is summarised in Table 1.

Table 2: Percentage trip distribution across local junctions

Junction Arm	Development Trip %			
	AM		PM	
A	53	44	42	58
B	16	11	8	33
C	5	11	8	8
D	26	22	17	17
E	5	0	8	0
F	47	56	58	42
G	16	22	17	8
H	32	33	42	33
I	16	22	17	8
J	0	0	0	0
K	11	11	8	8
L	5	11	8	0



Trip distribution figures for the enlarged development can be found in Appendix A and to understand how these trips could impact on the local highway network the following provides a comparison with existing flows at junctions included in the MED.

A316 Great Chertsey Road j/w Hartington Road and Dan Mason Way

The percent of development trips passing through this junction (i.e. arrow B) in the northbound direction (red) is 16% (AM) and 8% (PM) and in the southbound direction (blue) 11% (AM) and 33% (PM). This reflects tidal commuter flows and based on current but unconfirmed development trips, would result in an increase of between 9 to 27 car trips in the peak hour.

An ATC survey undertaken in 2017 shows the peak hourly traffic flows along this section of the A316 Great Chertsey Road ranges from 965 to 1,417vehicles per hour giving a 0.7% to 2.3% increase in traffic as a result of the development (Table 3).

Table 3: Comparison of development trips with peak hour flows on the A316 Great Chertsey Road

Direction	Key	Peak	Development Trips		Traffic Flow (veh/hr) (average)	(st.dev)	% increase
Northbound		AM	16%	19 veh/hr	1,417	83	1.3%
		PM	8%	9 veh/hr	1,285	83	0.7%
Southbound		AM	11%	15 veh/hr	965	57	1.6%
		PM	33%	27 veh/hr	1,185	43	2.3%

When these 'Development Trips' are compared with the 'Traffic Flow' standard deviation for peak hour traffic flows along the A316, it is clear the increase is well within normal day to day variability.

For this reason, the A316 Great Chertsey Road j/w Hartington Road and Dan Mason Way should not be included in the modelled network.

A205 Upper Richmond Road j/w A205 Clifford Avenue (South)

As part of the A205 South Circular, this congested junction suffers exit blocking as a result of traffic queuing back from Chalkers Corner. Google traffic suggests this can result in a queue extending back along A205 Upper Richmond Road and through the junction with Sheen Lane. As suggested previously, this situation is likely to have worsened considerably since the closure of Hammersmith Bridge and that the scope to improve the operation of the junction is very limited.

Trips generated by the development and forecast to travel through this junction are low. Arrows E and J in Table 2 suggests no development trips approach the junction from the east (J) and that only 5% (AM) to 8% (PM) approach the junction from the north (A205 Clifford Avenue) and west (A305 Upper Richmond Road). Based on current development trip estimates, this would add 6 and 10 car trips to the AM and PM peak hours respectively making the right turn from Clifford Avenue into Upper Richmond Road and visa versa. This is summarised in Figure 3 and Figure 4 where the Green and Yellow boxes show the distribution of development trips (number and percentage) with the peak hourly flow shown in red text.

A classified vehicle turning count undertaken in September 2017 indicates the peak hourly flow on this approach is 733 vehicles per hour in the AM peak and 826 vehicles per hour in the PM peak giving respective increases in trips as a result of the development of 0.8% and 1.2%. This again is well within the daily variability of traffic flows along the South Circular.

For these reasons, the A205 Upper Richmond Road j/w A205 Clifford Avenue (South) should not be included within the modelled network.

Figure 3: Upper Richmond Road j/w Clifford Avenue (AM development trip distribution)

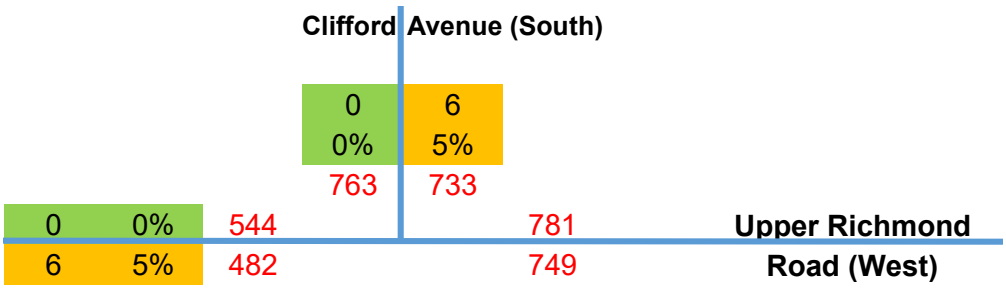
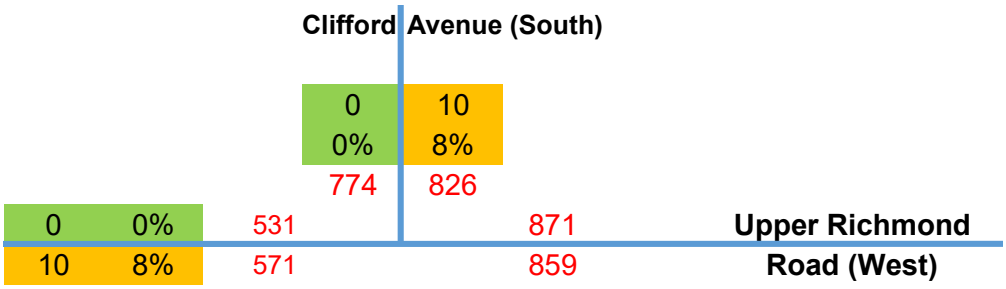


Figure 4: Upper Richmond Road j/w Sheen Lane (PM development trip distribution)



A205 Upper Richmond Road j/w Sheen Lane

Although this junction is not included in the MED the same issues described above for the Upper Richmond Road j/w Clifford Avenue (South) apply. As shown in Figure 5 and Figure 6 the development trips are slightly higher at this junction but they are still only a small proportion of the peak hourly flows approaching the junction from the A205 Upper Richmond Road.

- Sheen Lane (North) AM – +12.3% on the southbound flow
- Sheen Lane (North) PM - +8.1% on southbound flow
- Upper Richmond Road (AM) - +3.4% on the westbound flow
- Upper Richmond Road (PM) - 0% on the westbound flow
- Sheen Lane (South) AM – +7.8% on the southbound flow
- Sheen Lane (South) PM - +4.1% on southbound flow

While the flows on the Sheen Lane approaches increase by up to 12% those on the strategic road network are much lower (0 to 3.4%) are likely to be within normal day to day variability.

For this reason, the A205 Upper Richmond Road j/w Sheen Lane should not be included within the modelled network.

Figure 5: Upper Richmond Road j/w Sheen Lane (AM development trip distribution)

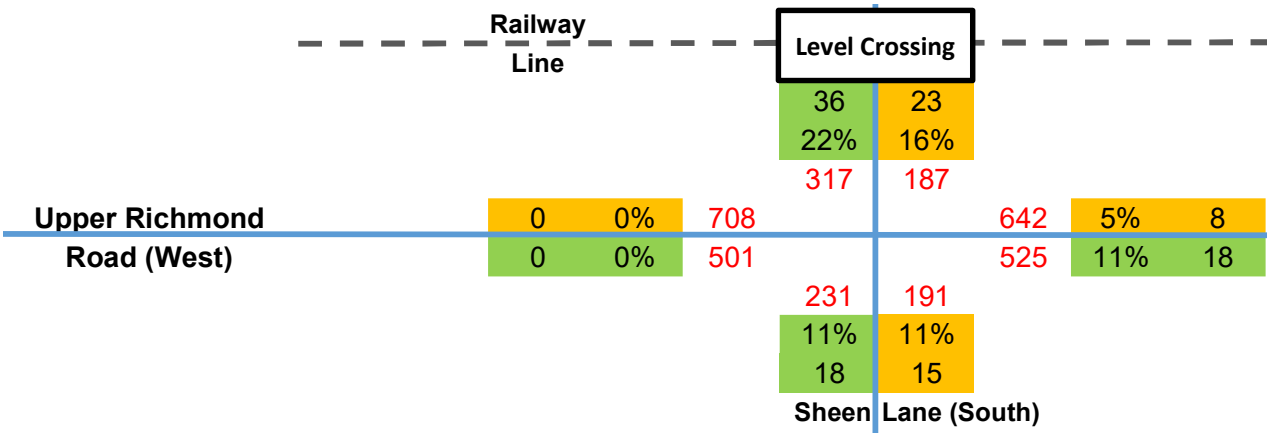
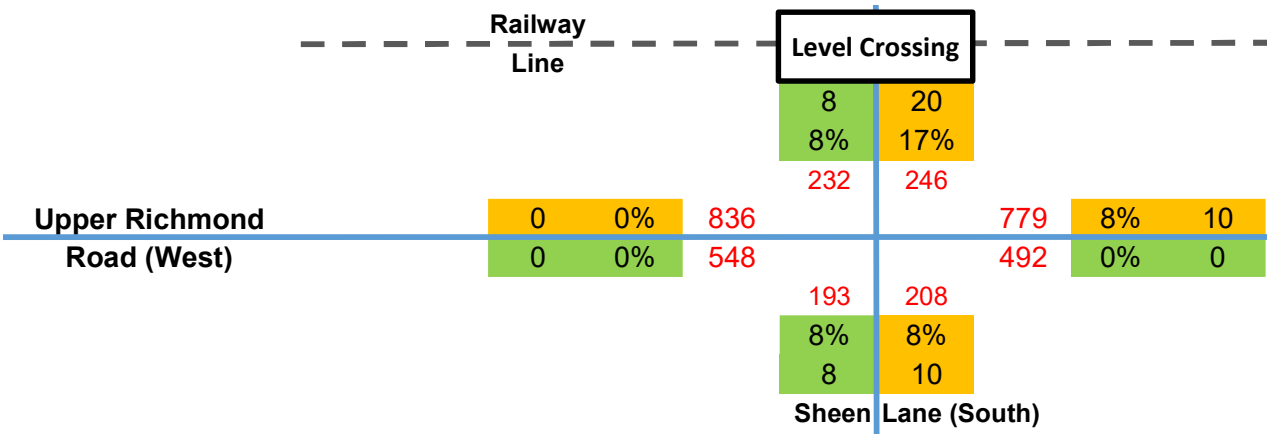


Figure 6: Upper Richmond Road j/w Sheen Lane (PM development trip distribution)



Congestion on the A205 South Circular

'Typical' google traffic outputs indicate that at peak times, traffic queues build up from Chalkers Corner and block back through adjacent junctions including the A205 Clifford Avenue j/w A205 Upper Richmond Road and the A205 Upper Richmond Road j/w Sheen Lane. The extent of queuing currently shown by google traffic is however likely to be heavily influenced by the closure of Hammersmith Bridge in April 2019 with reassigned traffic increasing demand for these routes and congestion along them.

With these junctions fully saturated and opportunity to increase highway capacity highly constrained by the highway boundary, a traffic modelling assessment that includes the A205 Upper Richmond Road would provide little insight into what is a wider traffic management issue. More importantly, the following section indicates that the number of development trips at these junctions is very low, with the increase well within the day to day variability of traffic flows along the South Circular.

Traffic Survey Data Limitations

A summary of the traffic data collected in 2016 and 2017 before the Hammersmith Bridge was closed is provided in Table 1. This showed that Classified Turning Counts (CTC) where undertaken for all junctions defined by the MED except for the A316 Great Chertsey Road j/w Hartington Road and Dan Mason Way. The remaining junctions were surveyed at various times in June 2106, June 2017 and September 2017.

To understand if the data is sufficient and consistent enough to develop a reliable model as defined by the MED, the flows where compared between junctions to see how well they matched. The closer the match, to more likely the survey data could be used to develop a balanced network and so comply with the calibration and validation requirements of VMAP.

To assess the compatibility of the 2016/ 2017 data and understand the optimum use, two scenarios have been defined (Table 4).

Table 4: Classified Turning Count scenarios for 2016/ 17 data

Scenario	Traffic Survey dates			
	Chalkers Corner	Mortlake Roundabout	A205 Upper Richmond Road j/w Sheen Lane	A205 Upper Richmond Road j/w Clifford Ave
Scenario 1	Sep-17	Jun-16	Sep-17	Sep-17
Scenario 2	Sep-17	Jun-17	Sep-17	Sep-17

Appendix B provides a network diagram showing how closely traffic flows between adjacent junction's match. This has been done for the development peaks of 0800-0900 hrs to cover the AM peak and 1700-1800 hrs for the PM peak.

The only difference between Scenario 1 and Scenario 2 is the data collected for the Mortlake roundabout. A comparison with the adjacent junctions at Chalkers Corner and the Upper Richmond Road j/w Sheen Lane indicates Scenario 1 has the best matched data.

For both Scenarios, the matching of traffic flows on Clifford Avenue (South) between Chalkers Corner and the junction with Upper Richmond Road indicate good correlation with some of the difference probably explained by traffic exiting St. Leonards Road.

The main issue occurs between traffic flows on A205 Upper Richmond Road between the junctions with Clifford Avenue (South) and Sheen Lane. A comparison of traffic flows indicates a substantial difference in both directions but particularly westbound where the hourly flows differs by 244 in the AM and 313 in the PM. This discrepancy would make it difficult validate the A205 Upper Richmond Road section of the model proposed by the MED. It is thought that this discrepancy is partly due to traffic routing through roads to the south of Upper Richmond Road, creating increased levels of uncertainty in the movement of traffic along this section of the South Circular.

For this reason, this section of the A205 Upper Richmond Road should not be included within the modelled network.

2017 VISSIM model requirements

Overview

To develop a VISSIM model in line with VMAP for the area defined in the MED raises further challenges to those already discussed. The following table sets out the data requirements for Stage 2 and 3 of the VMAP process and provides an indication of availability and suitability based on the above assessments. Where data is not available potential sources for the data are suggested.

Table 5: Data requirements to develop a 2017 VISSIM model for the above network

No.	Junction	Stage 2 (Calibration)					Stage 3 (Validation)	
		CTC	Sat. Flow	Signal Data	Ped. Flow	Level Crossing	Queue Lengths	Journey Times (5)
1	Chalkers Corner	✓ Sept-17	✓ (4)	✓ (2)	✓	n/a	✓ Jun-16	✘
2	A316 Clifford Avenue j/w Harington Road	✘	✘	✘	✘ (1)	n/a	✘	n/a
3	Mortlake Roundabout	✓ Jun-17	n/a	n/a	n/a	n/a	✓ Jun-17	n/a
4	A205 Upper Richmond Road j/w Clifford Avenue	✓ Sep-17	✘ (3)	✘ (2)	✘ (1)	n/a	✘	n/a
5	Williams Lane j/w Hanson Close	✘	n/a	n/a	n/a	n/a	✘	n/a
6	Lower Richmond Road j/w Ship Lane	✓ Jun-17	n/a	n/a	n/a	n/a	✘	n/a
7	Sheen Lane Level Crossing	n/a	n/a	n/a	✘	✓ Jun-17	✓ Jun-17	n/a
8	Sheen Lane Zebra crossing	n/a	n/a	n/a	✘	n/a		n/a
9	Lower Richmond Road Zebra crossing	n/a	n/a	n/a	✘	n/a	n/a	n/a
10	A205 Clifford Avenue/ Tangier Road Toucan crossing	n/a	n/a	✘ (2)	✘ (1)	n/a	n/a	n/a

No.	Junction	Stage 2 (Calibration)				Stage 3 (Validation)		
		CTC	Sat. Flow	Signal Data	Ped. Flow	Level Crossing	Queue Lengths	Journey Times (5)
11	A205 Upper Richmond Road/ Graemesdyke Road Puffin Crossing	n/a	n/a	✘ (2)	✘ (1)	n/a	n/a	n/a
12	A205 Upper Richmond Road j/w Sheen Lane	✓ Sep-17	✓ Sep-17	✘ (2)	✘ (1)	n/a	✘	n/a
13	Lower Richmond Road Puffin crossing	n/a	n/a	n/a	✘	n/a	n/a	n/a

Notes:

✓ available ✘ required from TfL/ Third Party

1. TfL ACHK data to provide demand dependency data for the crossings. Needs a request to TfL for data backdated to date of survey (13/09/2017).
2. TfL SCOOT logs. Unlikely to be available for the junctions required given the time that has passes since the survey. As an alternative ASTRID data (3 month average stage lengths) to be requested from TfL.
3. RR67 Saturation Flows to be used. Alternatively, TfL to provide from any approved LinSig model developed as part of the A205 corridor models.
4. Measured Saturation Flows for Chalkers Corner (September 2017) and used in approved LMAP models.
5. No journey time data is available or collected for 2017.

Summary

Based on the availability of data the following junctions should be excluded from the model extents.

- **A316 Clifford Avenue j/w Harington Road**. This backs up the previous assessment that any increase in development trips through the junction would be insignificant.
- **A205 Upper Richmond Road j/w Clifford Avenue (South)**. Only a CTC survey for this junction is available with no saturation flow, signal timing, demand dependency or queue length data.

There are other minor junctions and controlled pedestrian crossings that do not have any data but assumptions can be made within the model to incorporate minor junctions such as Williams Lane and Ship Lane while data from TfL may be available for the controlled pedestrian crossings.

Validation of the models is highly dependent on getting TrafficMaster and iBus data. If TfL is unable to provide TrafficMaster data then this will be purchased from Basemap or TeletracNavman but the availability of data for September 2017 will need to be checked.

The iBus data would be dependent on TfL providing this information for June 2017 and for the agreed routes. Once the modelling extent has been agreed and through our discussions with TfL we will ensure the Traffic Master and iBus timing points correlate as closely as possible.

Conclusion

The above assessment has informed our view of which junctions can be reliably modelled in VISSIM and in turn provide a response to the MED. The conclusion is that the model extents should include Chalkers Corner and all approach routes with the A3003 Lower Richmond Road extended back along the development frontage into Mortlake High Street to incorporate all the development access points. The adjacent junctions on the A316 (Hartington Road) and A205 (Upper Richmond Road) should be excluded. See Figure 7.

While the impact of development trips on the Upper Richmond Road j/w Clifford Avenue (South) has been shown to be small, there is some justification (for base model validation purposes) to include this junction as a controlled point for traffic entering and exiting the Clifford Avenue (South) link.

This conclusion is based on the likely '*development trips impacts*', '*congestion levels on the A205 Upper Richmond Road*' and '*traffic survey data limitations*' including '*VISSIM model requirements*' for Stage 2 and 3 of the VMAP process.

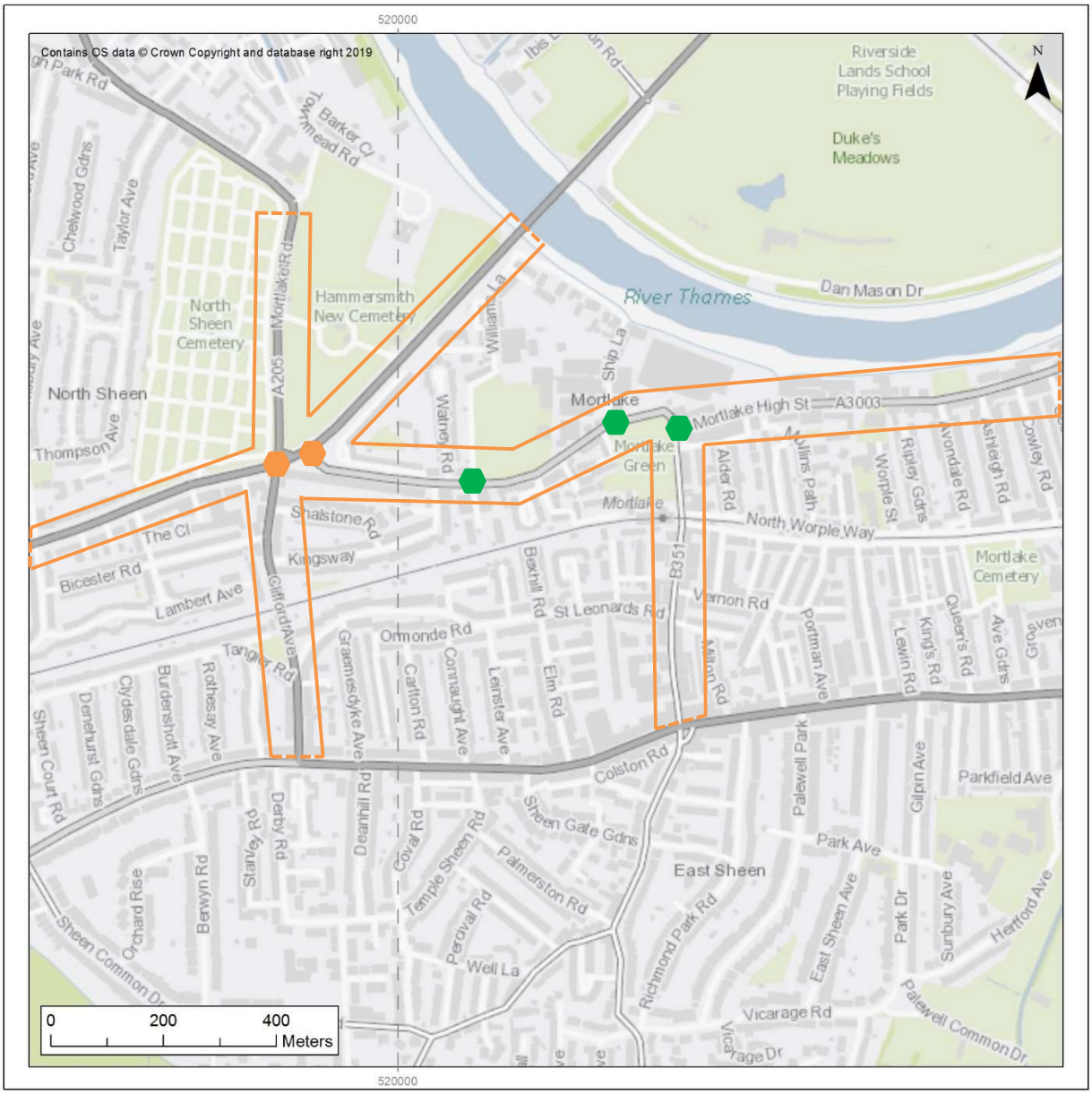
The following table provides a summary response to the sections in the MED.

Table 6: Summary response to the MED

MED Section	Response
Study Area	As shown in Figure 7 for the reasons set out in this note
Peak Hours	CTC data covers 7-10am and 4-7pm so there is limited scope to include the school peak 3-4pm
Software Requirements	VISSIM (version 2020) will be used.
Calibration/ Validation Criteria	▪ There is insufficient queue length data for validation purposes so validation will need to be carried out on bus and general journey times over agreed links (tbc). ▪ Saturation flows are available for Chalkers Corner but not for the A316 Clifford Avenue (North) j/w Hartington Road and the A205 Upper Richmond Road j/w Clifford Road (South). In part, this is the reason for these junctions being excluded from the model extents.
Modelling Data	▪ See caveats set out above regarding the Hammersmith Bridge closure and the COVID-19 lockdown and its impact on new traffic surveys. The modelling approach has therefore been based on existing data sets complimented by third party data. In part, this is the reason for model extents being revised. ▪ Separate requests will be made to TfL for TrafficMaster data and iBus data. Should TrafficMaster data not be available then this will be purchased from Basemap or TeletracNavman but this is dependent on availability.
Data to be collected on Site	As above. Data sources for the models will rely on existing data sets.
Signal Data Coding	Relevant signal data will be requested but it should be noted that SCOOT log are unlikely to be available given the time that has passed since the surveys where undertaken.
Vehicle types to be modelled	Agreed
Additional Modelling	Agreed for those junctions within the revised model extents
Proposed Modelling	To be agreed and confirmed at MAP Stage 4
Seed Runs	Agreed
Programme	Agreed. This will be provided once the MAP Stage 1 has been completed.

It is proposed a 2017 VISSIM model of the local highway is produced excluding the A205 Upper Richmond Road and the A316 Clifford Avenue j/w Hartington Road. The extent of the model is shown in Figure 7 and will include the length of Lower Richmond Road and Mortlake High Street from Chalkers Corner to the White Hart Lane roundabout. For the reasons given, the model should exclude the A205 Upper Richmond Road but we would welcome the opportunity to discuss this further with TfL to ensure a workable solution is found and can be agreed as part of the MAP Stage 1.

Figure 7: Revised model extents based on 2016/ 2017 data



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23/04/2020

2019 VISSIM Model (To be discussed further with TfL)

Background

Following the closure of the Hammersmith Bridge in April 2019 the client team wanted to understand the impact this was having on Chalkers Corner and traffic flows along Lower Richmond Road. Traffic surveys where commissioned in June/ July 2019 that included a Classified Turning Count at Chalker Corner and a classified vehicle counts (ACT) on A316 Clifford Avenue (North) just south of Chiswick Bridge, Mortlake High Street and Lower Richmond Road.

To understand if this data could be used to develop a post Hammersmith bridge model for the model extents described above, two further traffic flow comparison scenarios where defined. See Table 7 and the Figure provided in Appendix B.

Table 7: Classified Turning Count scenarios for 2016/ 17 data

Scenario	Traffic Survey dates			
	Chalkers Corner	Mortlake Roundabout	A205 Upper Richmond Road j/w Sheen Lane	A205 Upper Richmond Road j/w Clifford Ave
Scenario 3	Jul-19	Jun-16	Sep-17	Sep-17
Scenario 4	Jul-19	Jun-17	Sep-17	Sep-17

The comparison indicated survey data collected in 2019 for Chalkers Corner was not compatible with wider data collected in 2017. The difference between peak hour flows between Chalkers Corner and adjacent junctions on A205 Clifford Avenue (South) and Mortlake roundabout were consistently over 100 vehicles with values over 200 vehicles in some cases. This is not surprising given the extend of traffic reassignment likely to have been caused by the closure of a key river crossing.

Proposal

A 2019 “Chalkers Corner only” VISSIM could be produced if the following additional information was available.

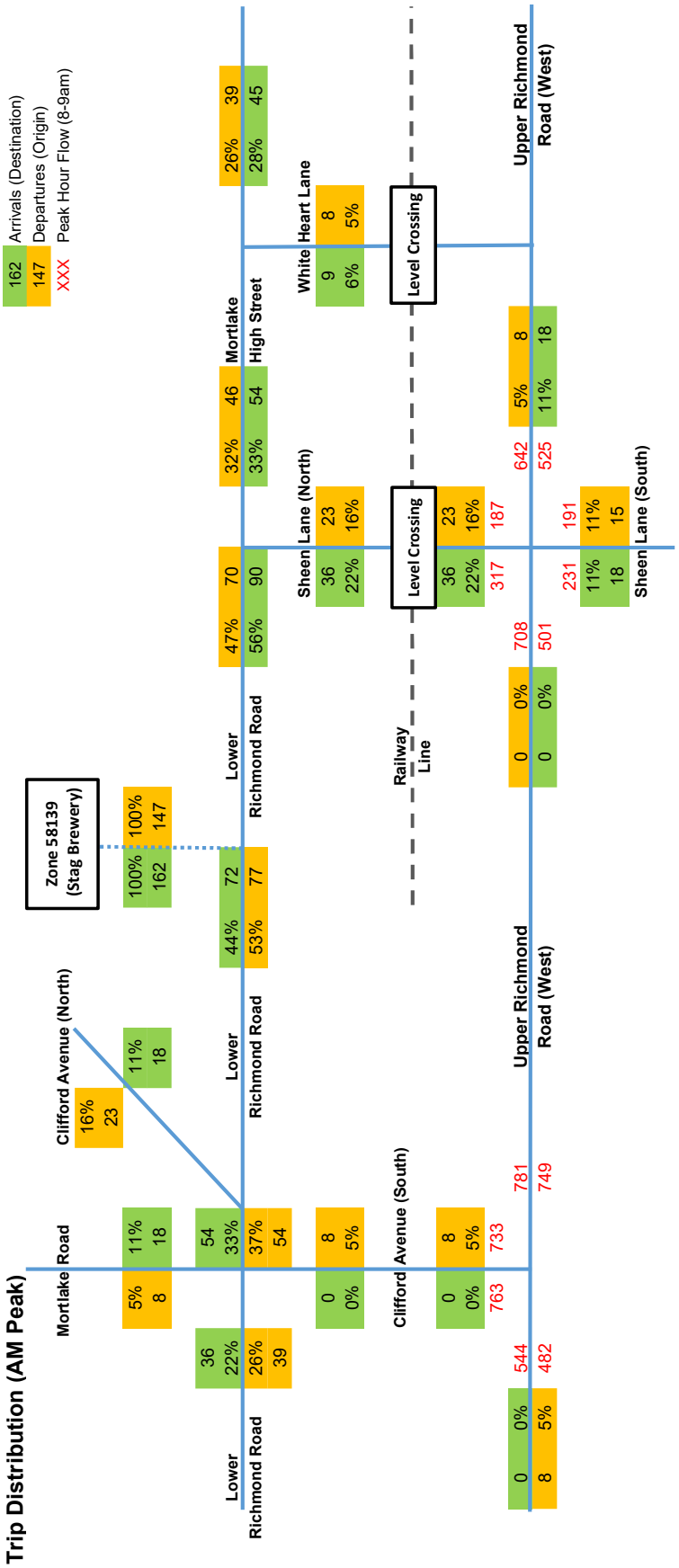
- Saturation flow data from previously approved LinSig models could be used to calibrate stop lines in VISSIM but this will need to be agreed with TfL.
- In the absence of SCOOT logs, 3-month average stage lengths from the ASTRID database could support model calibration but would need be provided by TfL.
- As no queue length data was collected in 2019, base model validation will therefore depend on the availability of TrafficMaster data from either TfL or Basemap.
- Similarly, with iBus data this would need to be provided by TfL for the agreed routes through the junction. Origin and destination bus stops for each route will also need to be agreed to support the data request.
- ACHK data to provide demand dependency information at Chalkers Corner backdated to 02/07/2019 (the date of the survey).
- Traffic flows – input from observed MCC

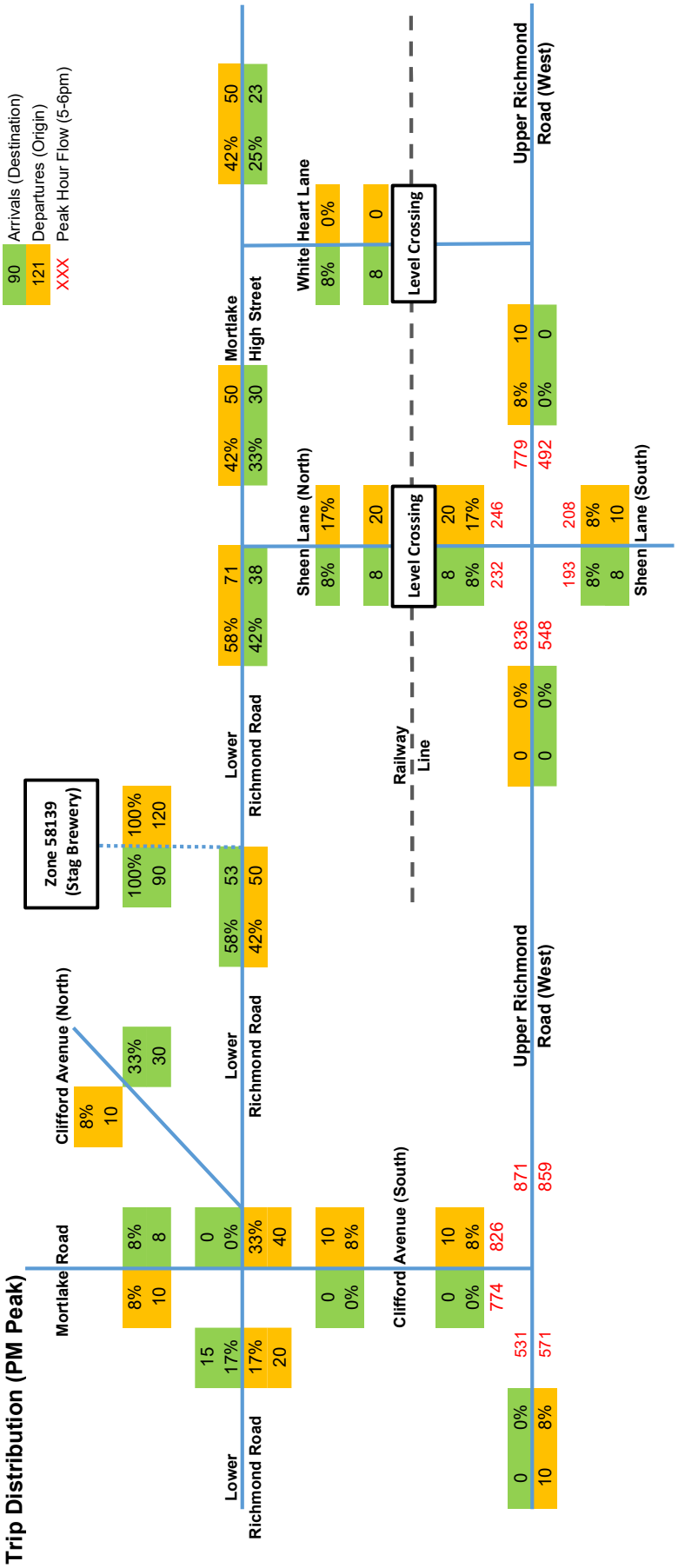
In addition, it may also be possible to produce a validated (with caveats) a LinSig model for the 2019 flows. The video footage can be utilised where possible to collect Degree of Saturation data in order to calibrate/validate the LinSig model. Similar to VISSIM, some signal data may be required from TfL.

Conclusion

It may be possible to develop a 2019 VISSIM model of Chalkers Corner reflecting a post Hammersmith Bridge closure scenario but the data available is limited which will impact on the reliability of the model. Any decision to progress this element of work will therefore need further discussions with TfL to ensure the development of a 2019 model has sufficient benefits to the approval process.

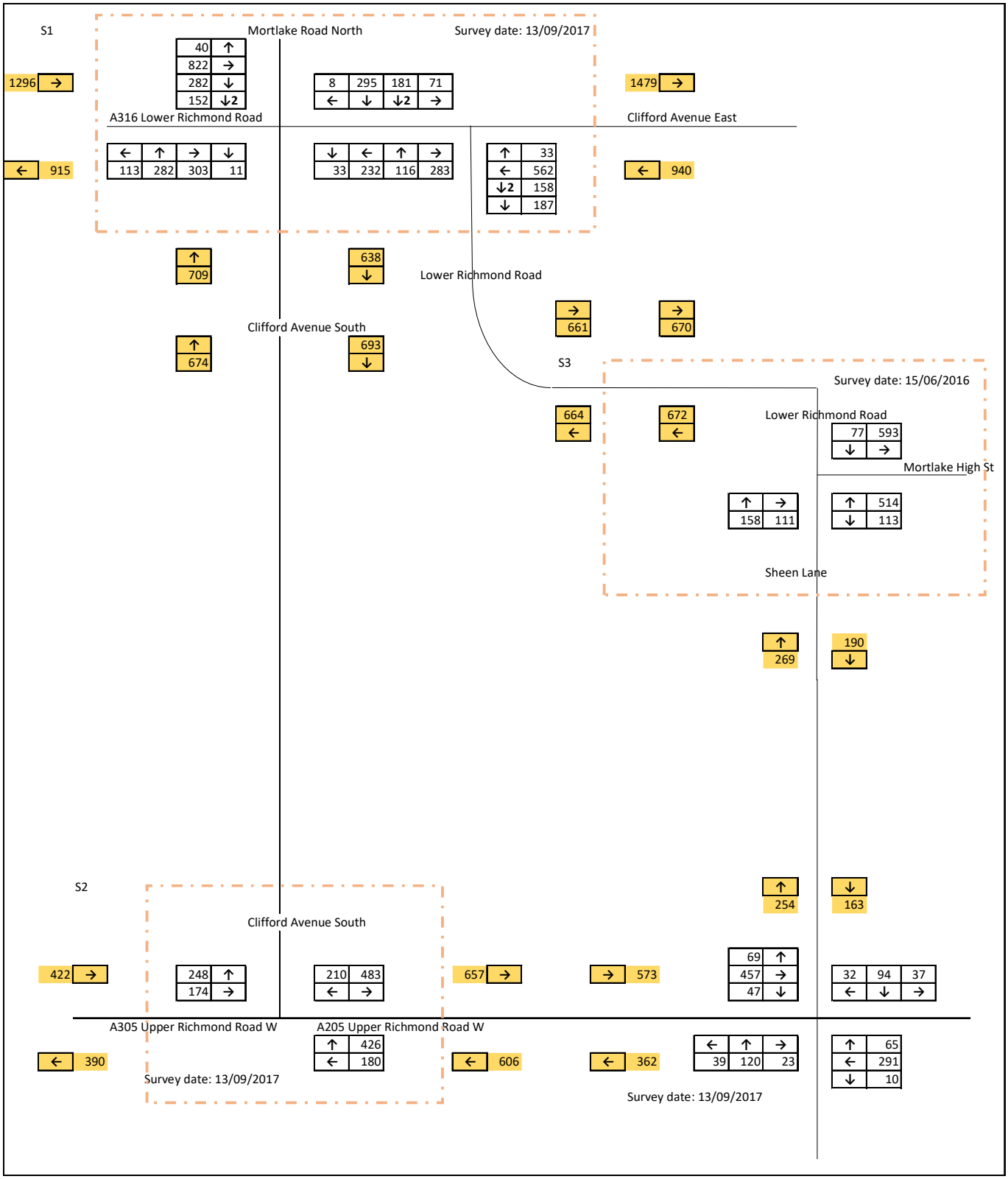
Appendix A: Trip Distribution Figures (AM and PM)



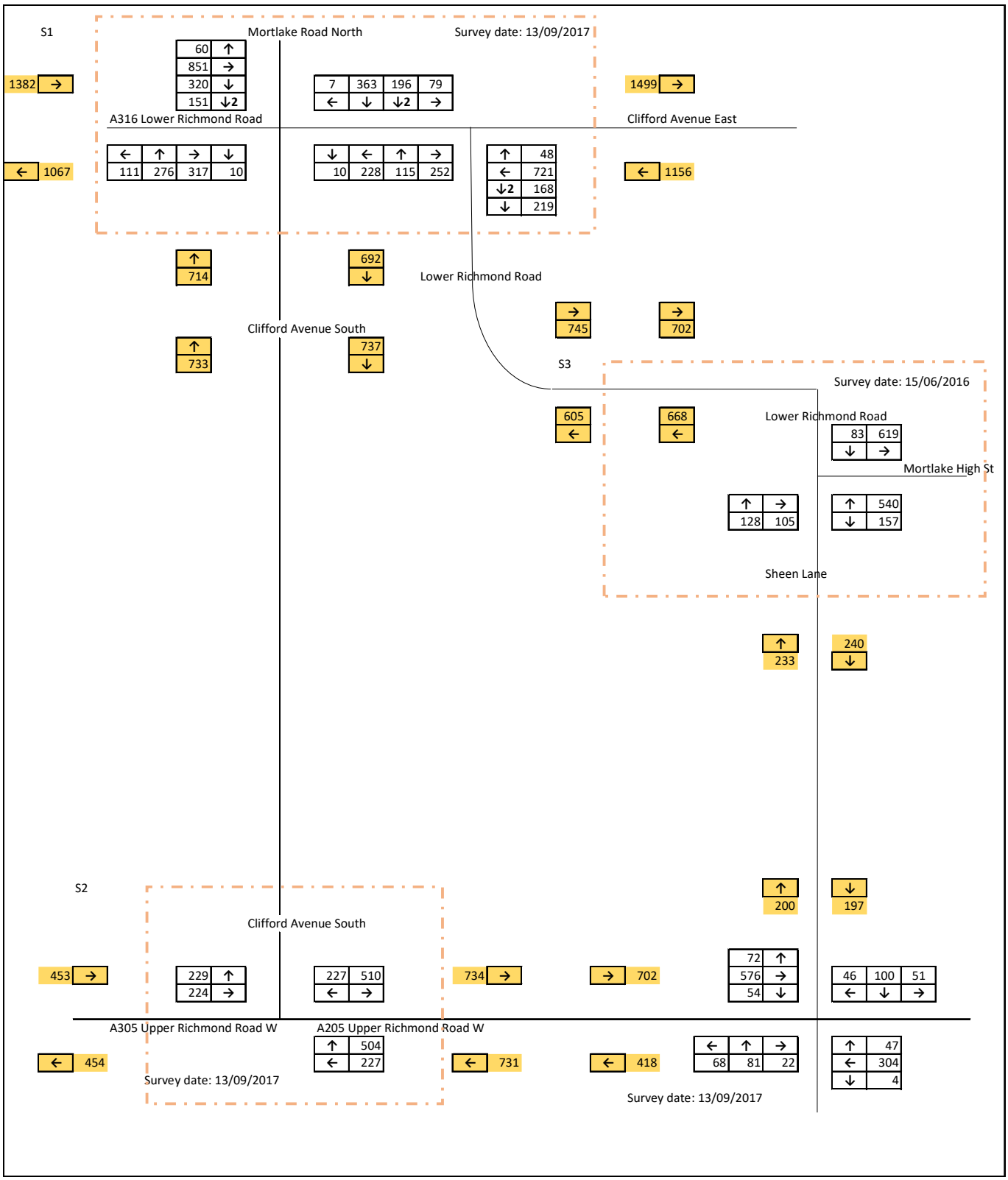

Trip Distribution (PM Peak)
Arrivals (Destination)
Departures (Origin)
XXX Peak Hour Flow (5-6pm)
90
121
Zone 58139 (Stag Brewery)
100% 120
100% 90
Clifford Avenue (North)
8% 10
33% 30
Mortlake Road
8% 10
8% 8
15 17%
17% 20
Lower Richmond Road
58% 53
42% 50
0 0%
33% 40
58% 71
42% 38
42% 50
33% 30
42% 50
25% 23
Mortlake High Street
Railway Line
Clifford Avenue (South)
0 0%
10 8%
0 0%
10 8%
0 0%
10 8%
774
826
531
571
871
859
Upper Richmond Road (West)
0 0%
0 0%
0 0%
10 8%
836
548
White Heart Lane
8% 0%
8 0
Level Crossing
Sheen Lane (North)
8% 17%
8 20
Level Crossing
8 20
8% 17%
232
246
779
492
Upper Richmond Road (West)
8% 10
0% 0
208
193
Sheen Lane (South)
8% 8%
8 10

Appendix B: Traffic Flow Comparison

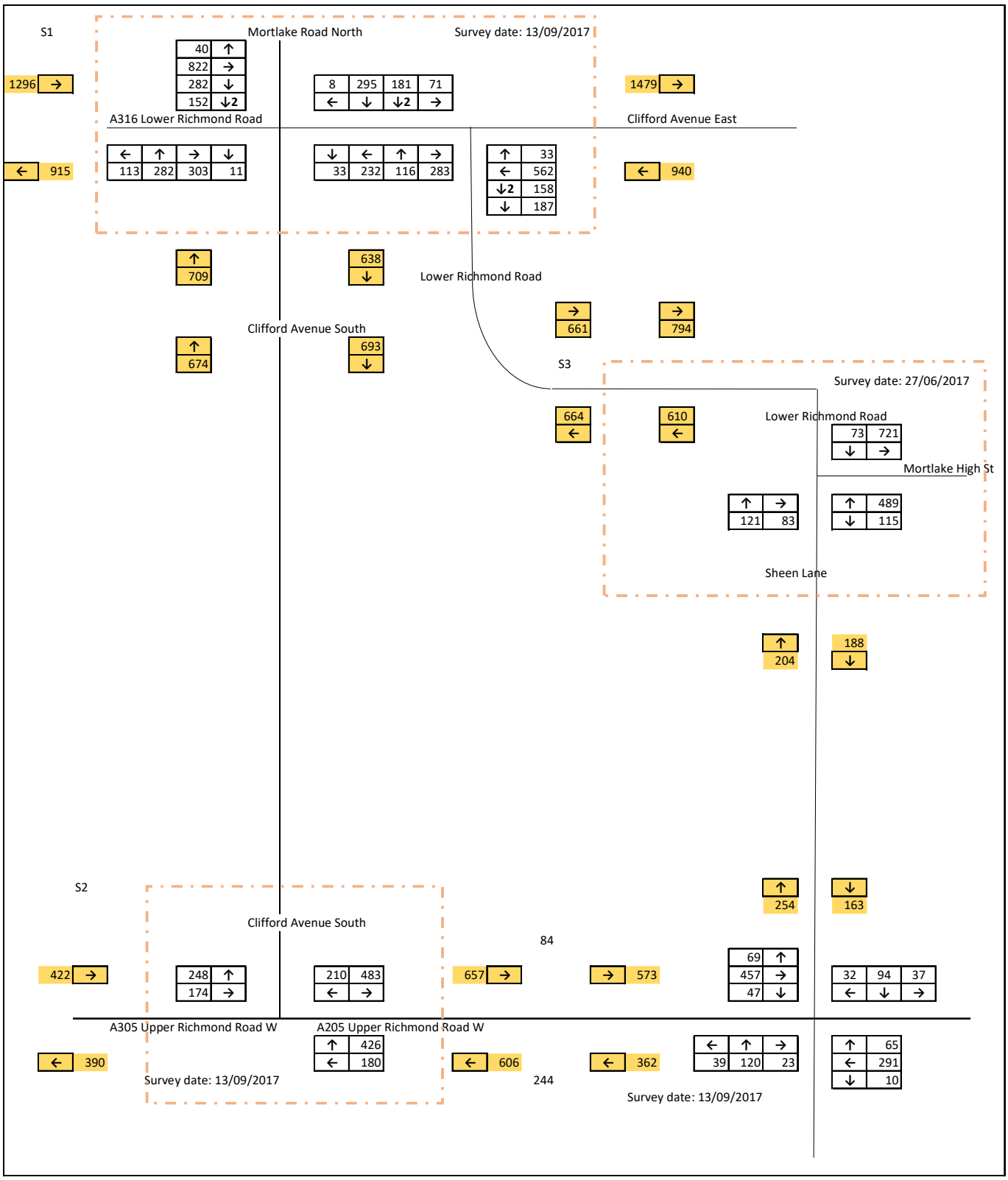
Scenario 1 (0800-0900hrs)



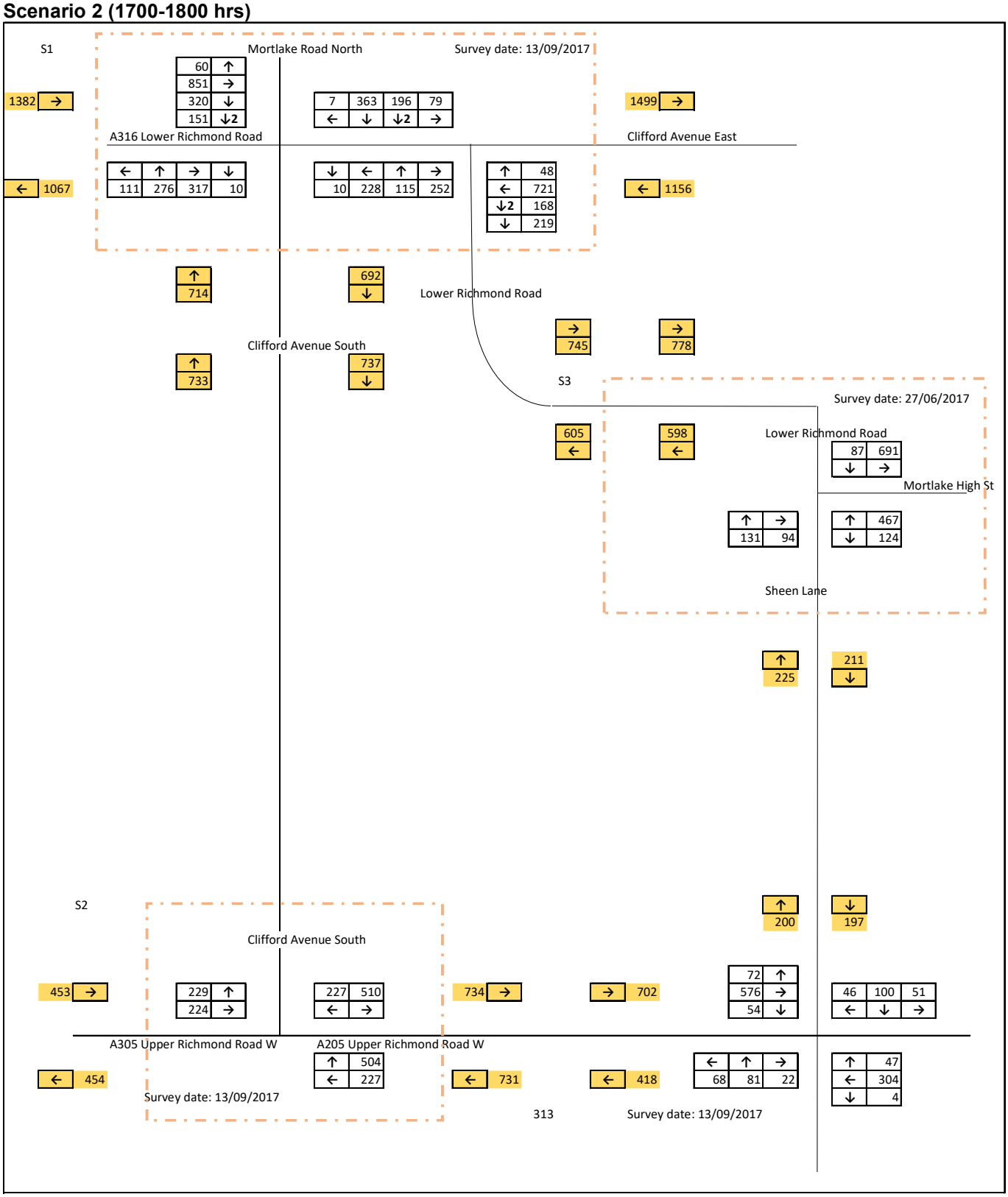
Scenario 1 (1700-1800 hrs)



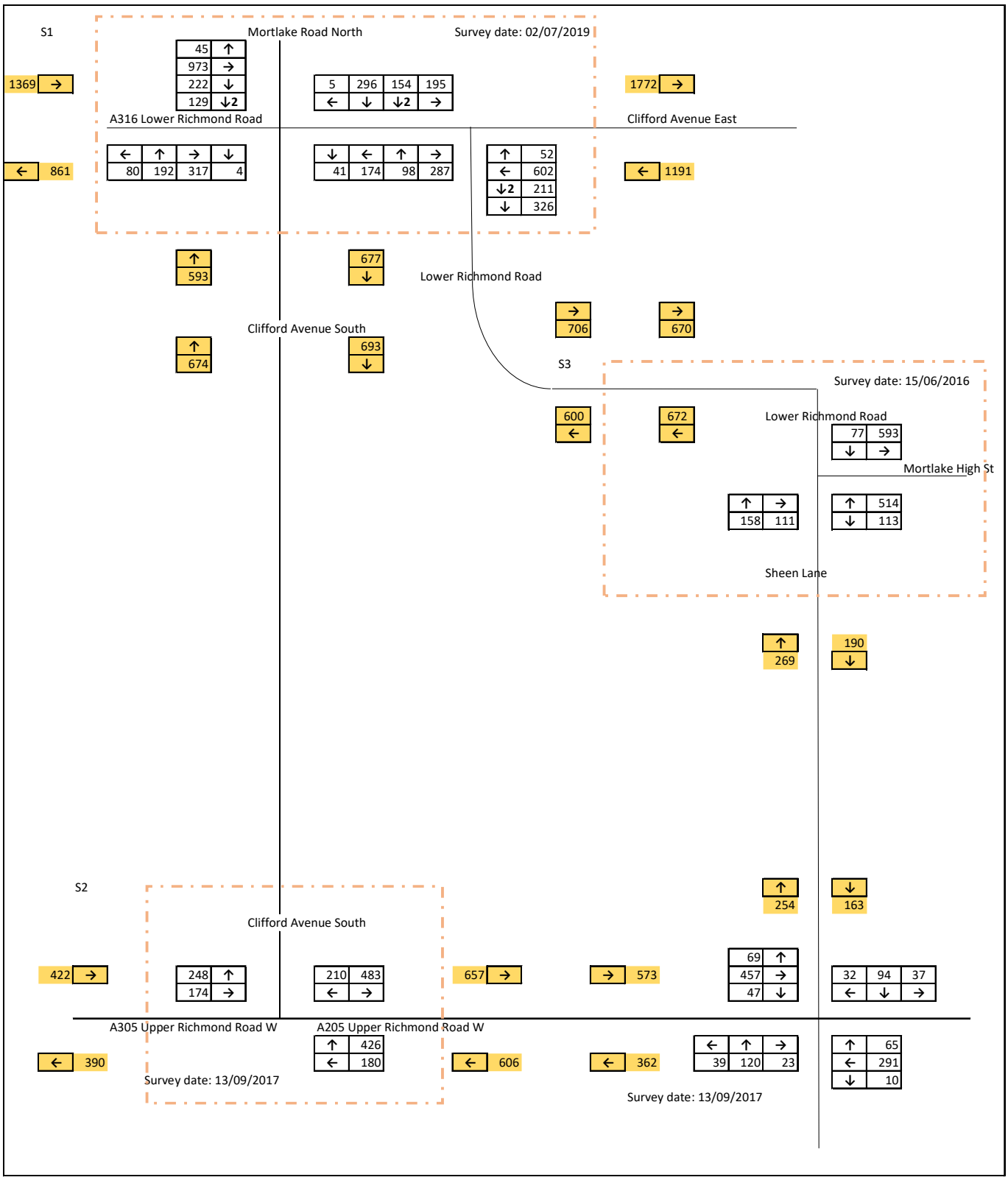
Scenario 2 (0800-0900 hrs)



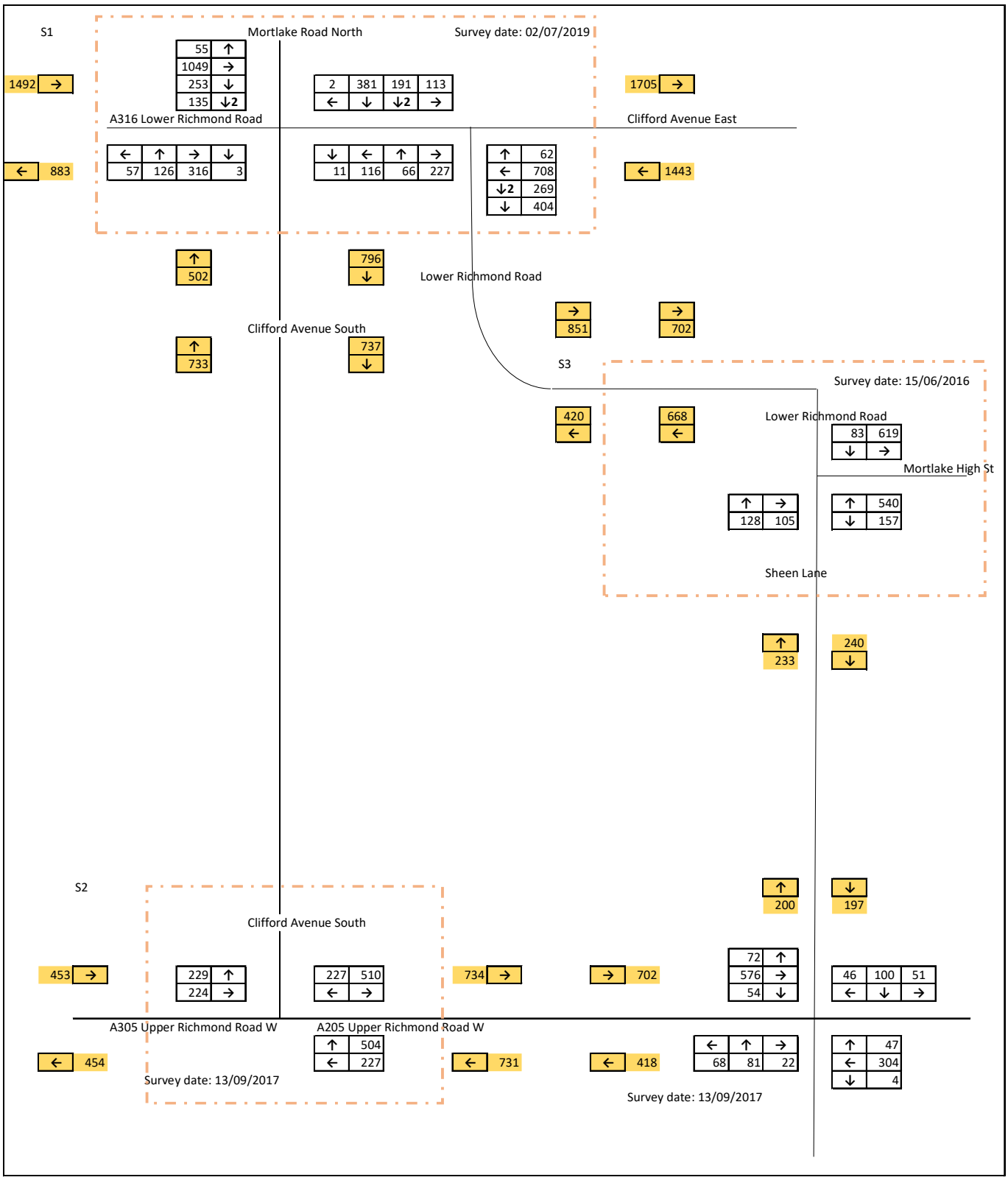
Scenario 2 (1700-1800 hrs)



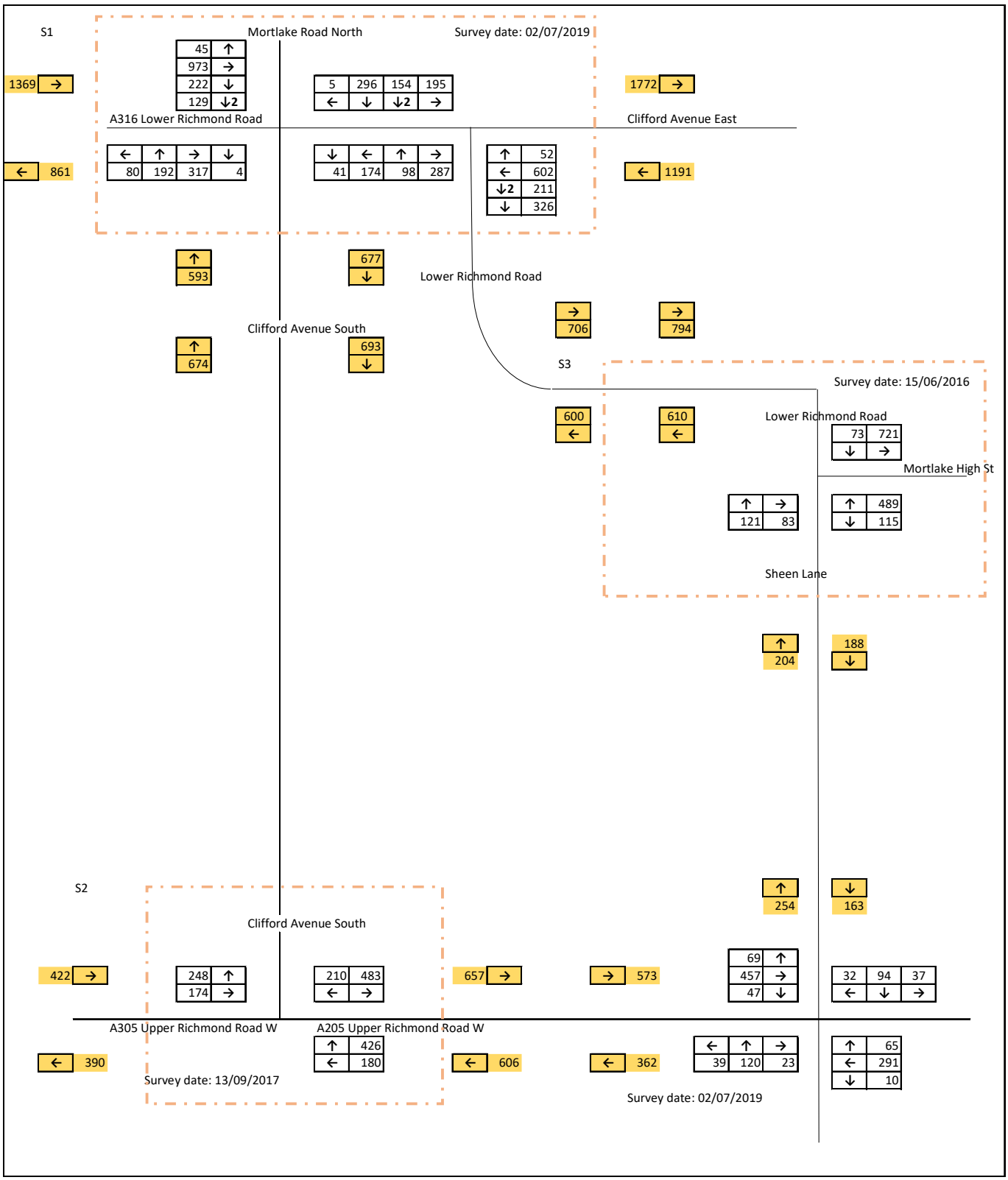
Scenario 3 (0800-0900 hrs)



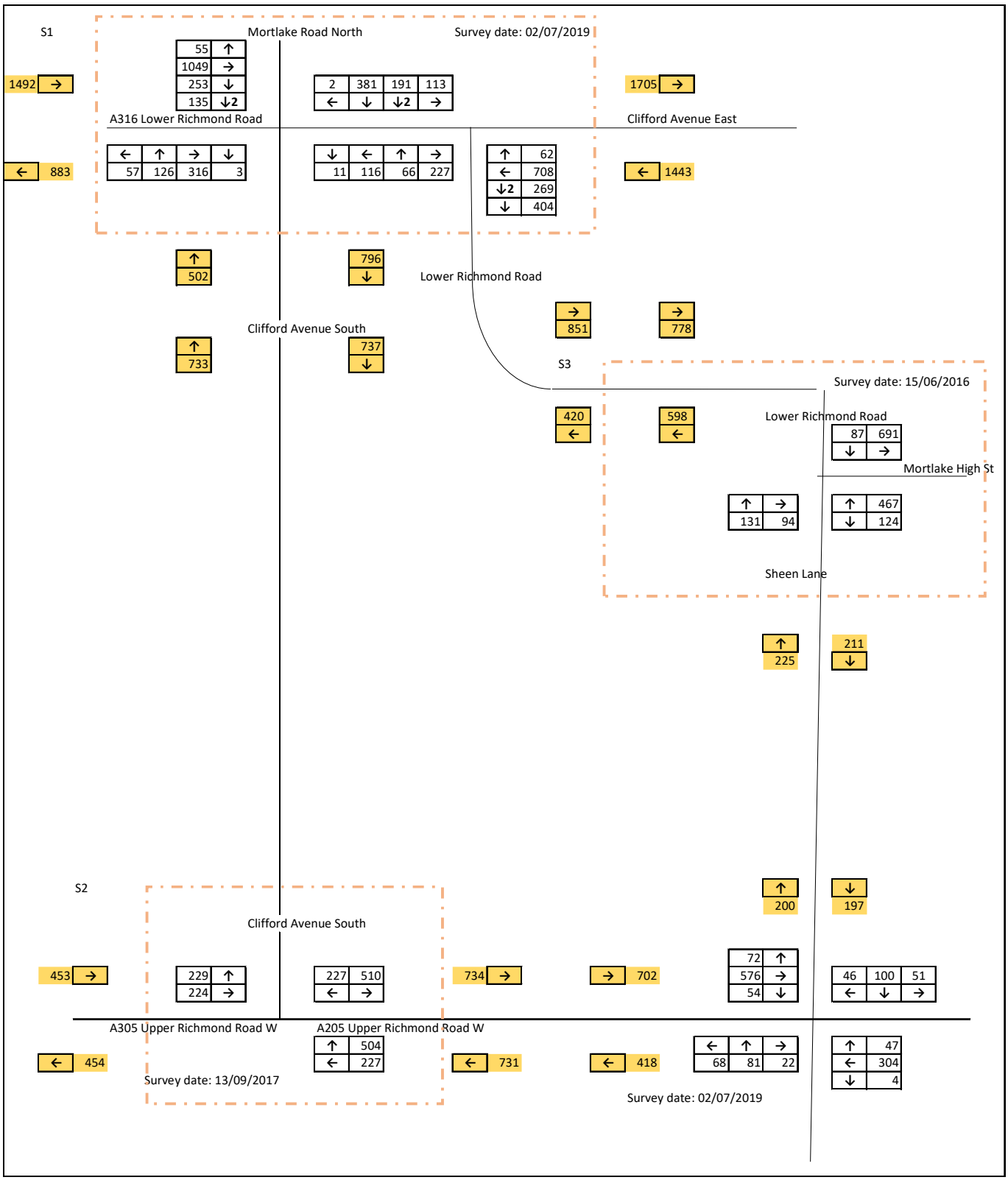
Scenario 3 (1700-1800 hrs)



Scenario 4 (0800-0900 hrs)



Scenario 4 (1700-1800 hrs)



DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
38262/5514/TN036	-	20.04.20	G. Daugherty	P. Wadey		G. Callaghan

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Appendix J Further Correspondence with TfL

Hi Sid,

Please see below feedback as promised.
Let me know your thoughts.

Thanks
Michal

Michal Miklasz
TfL Planning/ Network Performance Modelling Liaison
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Sent: 05 May 2020 10:06
To: Miklasz Michal
Cc: Daugherty, George; Wadey, Peter
Subject: Re: Stag Brewery - Modelling Expectations Meeting

Hi Michal,

Thanks for your time on Friday. As discussed in our meeting, this email will hopefully list out additional data required to undertake the modelling scope stated in the MED by TfL as part of the planning application for redevelopment of Stag Brewery.

A summary of the requirements is provided in table below with each data set discussed in further detail within this email:

Site No.	Site Name	Data Required for modelling				
		Traffic Survey MCC	SCOOT logs	ASTRID stage lengths	ACHK Data	Saturation Flows
25/068	GREAT CHERTSEY ROAD - HARTINGTON ROAD - DAN MASON WAY	✓	✓	✓	✓	✓
25/147	A205 CLIFFORD AVENUE BY TANGIER ROAD (NEARSIDE TOUCAN)	✗	✓	✗	✓	✗
24/004	A205 UPPER RICHMOND ROAD WEST - A205 CLIFFORD AVENUE	✗	✓	✓	✓	✓
24/215	A205 UPPER RICHMOND ROAD BY DEANHILL ROAD BY GRAEMESDYKE AVENUE	✗	✓	✗	✓	✗

Traffic Survey MCCs

As discussed in our meeting and also detailed in 'TN036 - Response to the TfL MED (draft final)', we agreed to use September 2017 MCCs for Chalkers Corner Junction as well as 24/004 Upper Richmond Road/Clifford Avenue Junction. June 2016 or 2017 flows for Mortlake High St/Sheen Ln roundabout will be used to develop the models by choosing the

more compatible data in terms of traffic flow balancing between the junctions. Some flow balancing may be required by adding Ship Lane/Lower Richmond road and/or Hanson Close/Lower Richmond Road side road junctions. Please let us know if you disagree and also suggest an alternative methodology if you have one in mind.- Correct but with consideration to flow data for 25/068 as well (as described below)

However, we do not hold any data for 25/068 Great Chersey Road-Hartington Road Junction. We are happy to approach Asset Management at TfL and check if TfL hold any MCCs for that junction, albeit this could be from the different time period altogether. If available, it would be useful to check if the data is compatible in terms of flow consistency on the A316 Great Chertsey Road between 25/068 and Chalkers Corner Junction. Are you able to check for us if TfL have any MCCs for 25/068 and if so share the information with us so we can conduct a flow check?. Alternatively, if there is a significant discrepancy in flows, this junction can be modelled using the flows arriving/leaving Chalkers Corner junction with no traffic added onto Hartington Road. As SCOOT logs/ASTRID data will not be from September 2017 manual adjustments to stage length can be made (with MAE's agreement) to ensure the best possible representation of site conditions for this junction.- more as FYI, as you already have requested data via PCAM for 25/068 as well as remaining ped crossing. Happy with the approach in principle but as pointed out any further discussions (as I imagine they will be few unexpected turn of events with flow balancing, signal strategies etc.) will need to be cleared off with auditor.

SCOOT logs

SCOOT logs (M16 messages) and/or ASTRID data (historic stage lengths) to be requested from TfL for 25/068, 25/147, 24/004 and 24/215. It is understood that the SCOOT logs need to logged in advance and therefore any logs recorded now may not necessarily provide the typical stage lengths due to the impact of COVID-19. It would be useful to have both M16 messages as well as ASTRID data for 25/068 and 24/004 in case some manual adjustments need to be made to the stage lengths to achieve validation, this could well be the case as discussed in our meeting given the different time periods data sets are being collated from.- will provide Astrid for junctions as requested but given time-lapse this is likely to be trend based of 3hr average. So you have MCC for 24/004 but you never requested signal data for back in Sept 2017?

We have the SCOOT logs and ACHK data for Chalkers Corner junction (September 2017) from previously undertaken LMAP modelling for Stag Brewery so will use them for consistency as MCC for Chalkers Corner was observed on same day. – great!

Timings Sheets, Controller Specifications and UTC Plans

Required for 25/068, 25/147, 24/004 and 24/215. Unless the timing sheet for 24/011 & 24/199 (Chalkers Corner) has changed since the LinSig model was last developed and approved in 2017/18 we are happy to use what we have. This includes UTC plan, ACHK data and timing sheet from previously undertaken LinSig modelling.- again FYI as the request was already issued. Not sure if Chalkers Cnr should be changed as your modelled year would

ultimately be Sep 2017 (correct?) so as long s your signals were requested around the same time, this should suffice. Please confirm

ACHK data

ACHK data to be requested from TfL for 25/068, 25/147, 24/004 and 24/215. These will need to be from 13 September 2017 (same day as MCC for Chalkers Corner and Upper Richmond Road/Clifford Avenue Junctions).- should be able to provide you those by end of this week

Time periods (Stantec to model AM and PM peaks for below stated times as these reflect the development peak hours):

- AM Peak - 0800 to 0900
- PM Peak - 1700 to 1800

As stated in TN036 (Stantec's response to MED) CTC data covers 7-10am and 4-7pm so there is limited scope to include the school peak 3-4pm.- need to speak to Lucy Simpson to get confirmation on inclusion of school trips

Saturation Flows

We are happy to contact TfL and enquire if there are any existing LinSig models for 25/068 and 24/004. Can you confirm if it is the Modelling Team at TfL that we need to directly contact for any available LinSigs or Saturation Flows used in the existing corridor models (A316 model for 25/068 and A205 model for 24/004)? Alternatively, if this is something you are able to find out internally and provide us directly, perhaps you could include the costs (if any) along with the quote for the audit?- that was already actioned when you contacted PCAM. Re alternative approach, I would imagine in terms of added costs, this needs to be passed over to PCAM who are in charge of financial side of the audit

If observed Sat Flow data is unavailable for above mentioned junctions, Stantec suggest using RR67 sat flows as the 2 junctions in question are at the periphery of the model extent.- agree

Queue Lengths

Queue lengths surveys were not undertaken when the September 2017 MCCs were observed. This was because the previously agreed approach was to model Chalkers Corner in LinSig and to validate on DoS rather than using queue length data. Therefore, it is not possible to undertake a base model queue comparison. Comparison of Base (modelled) vs Forecast (modelled) Scenarios will be included in forecast note. – could you please confirmed what is the latest with video surveys and whether this can be requested from survey company?

ibus data

ibus data will be requested from TfL to input bus dwell times into Vissim model and undertake bus journey time validation. Stantec are happy to contact TfL directly and we will

send our request to iBusCountdownDataTeam@tfl.gov.uk but if you could provide a named contact in the Bus Client Team it would help speed things up.

The following table shows the start and end stops for each bus route that will be included in the Vissim model. It is assumed that bus journey time validation will only be undertaken for routes that have more than 1 intermediate stop. Please confirm otherwise. Please include routes 33, 337, 493 and R68. Their stops are likely to be within distance covered by external link extent and first three will support validation of Upper Richmond Road approaches 24/004. 969 can be excluded as infrequent service

Bus Route & Direction	**Start Stop**	**End Stop**
190 towards Richmond	Staveley Road Stop Y	Mortlake Road Stop G
190 towards Hammersmith	Mortlake Road Stop B	Staveley Road Stop R
533 towards Hammersmith Bus Station	Avondale Road Stop Q	Staveley Road Stop R
533 towards Castlenau	Staveley Road Stop Y	Sheen Lane / Mortlake Station Stop A
419 towards Roehampton	Mortlake Road Stop B	Sheen Lane / Mortlake Station Stop A
419 towards Richmond	Avondale Road Stop Q	Mortlake Road Stop G
R68 EB	Mortlake Road Stop B	Chalkers Corner Stop C
R68 WB	Chalkers Corner Stop F	Mortlake Road Stop G
969 EB	Mortlake Station Stop E	Sheen Lane / Mortlake Station Stop A
969 WB	Avondale Road Stop Q	Mortlake Station Stop F
33 EB	Berwyn Road Stop T	Graemesdyke Avenue Stop U
33 WB	Temple Sheen Road Stop X	Berwyn Road Stop Y
337 EB	Berwyn Road Stop T	Graemesdyke Avenue Stop U
337 WB	Temple Sheen Road Stop X	Berwyn Road Stop Y
493 EB	Berwyn Road Stop T	Graemesdyke Avenue Stop U
493 WB	Temple Sheen Road Stop X	Berwyn Road Stop Y
969 EB	Berwyn Road Stop T	Graemesdyke Avenue Stop U

969 WB	Temple Sheen Road Stop X	Berwyn Road Stop Y

OD Matrix (Static routing assignment)

LinSig matrix estimation tool will be used following a flow balancing exercise to develop a robust matrix that will be fed into the Vissim as routing proportions. Vehicle input will be based on site observed MCCs. Plus ensure that OD for Chalkers is not being compromised by LinSig matrix as don't wish to see too many u-turners between Clifford Av and LRR (unless there is evidence of those happening back in 2017)

Zebra crossings

The TfL MED includes two zebra crossings, one on Lower Richmond Road East of Hanson Close/LRR junction and the other just south of Mortlake High St/Sheen Lane roundabout. Unfortunately, no pedestrian data is available for these crossings. Can TfL provide anything for this? If not, Stantec suggest these be excluded from the MED or some engineering judgement be applied when it comes to calibration/validation of the models? i.e. add pedestrians to validate journey time (if required) if modelled JT is quicker than observed. Please let us know your thoughts? Agreed although needs to be thought through if any of these zebras are being converted to signals or new zebras are being introduced, how this will be reflect in proposed modelling. Please let me know your thoughts how you planning to approach these scenarios (if they form part of highway proposal for this app)

TfL template file and version

Can you confirm what version of Vissim would you like the models to be developed in? And kindly provide us with the TfL template file for the same. We are able to develop the model in the latest version (v2020).- have no preference. Will leave it to yourself and auditor to make conclude

LinSigs

Previously approved Chalkers Corner LinSig will be used to support development of the Stage 2b Vissim model. Skeleton LinSigs will be developed for 25/068 and 24/004 with manual adjustments being made to the latter junctions when it comes to Proposed Vissim modelling. Approved Base LinSig can be used for Chalkers Corner to derive proposed timings. Agree in principle but need to mention that any adjustment to proposed signal strategy will need approval of NP Engineer – that applies to any signal including Chalkers Cnr

Summary

Hope the above provides an accurate summary our conversation on Friday. Based on your replies to above, George and/or myself are happy to update the MED to include what we agree here. If you can please provide us with a word version of the document we will update the document with tracked changes so any departures from the original document are clearly shown. We will need a couple of days to do this but if we receive it tomorrow we should be able to get this back to you by the end of the week to review/agree. – will do

As you already know, we need to collate this data, develop the models and assess the mitigation in a relatively short period of time. We will provide an outline programme that tries to balance the standard MAP reporting durations with our clients programme. We would therefore be grateful if you are able to expedite any of the above data requests via the TfL departments. Our main concern is ibus data so any help from your side on getting this over to us as soon as possible will be greatly appreciated. I would hope that PCAM team will be able to assist you with iBus data. if not please let me know and will do my best

Please give us your views on the above at your earliest convenience so we can proceed with placing the requests with different departments within TfL. We would ideally like to send the requests out as soon as possible.

I hope I have included everything we discussed on Friday but if you feel I have missed something or have any other questions please do not hesitate to contact myself or George.

Look forward to your response.

Regards,
Sid

From: Daugherty, George <george.daugherty@stantec.com>
Sent: 23 April 2020 19:27
To: Miklasz Michal <MichalMiklasz@tfl.gov.uk>
Cc: Taylor Rachel (ST) <Rachel.Taylor@tfl.gov.uk>; Lloyd Matthew (ST) <Matthew.Lloyd@tfl.gov.uk>; Simpson Lucy <LucySimpson@tfl.gov.uk>; Wadey, Peter <Peter.Wadey@stantec.com>; Callaghan, Greg <greg.callaghan@stantec.com>; Iyer, Siddharth <siddharth.iyer@stantec.com>
Subject: RE: Stag Brewery - Modelling Expectations Meeting

Hi Michal,

Firstly, apologies for the delay sending this response to the Modelling Expectation Document for the Stag Brewery development. It has taken us longer than anticipated to pull together all the relevant data and traffic modelling to bring it together what I hope will be viewed as a constructive response.

We are keen to ensure our modelling provides a reliable assessment of the development and proposed mitigation under what are exceptional times. Hopefully the response sets out an acceptable approach to navigating the issues created by the Hammersmith Bridge closure and COVID-19 lockdown but should any further clarification be required, please let me know.

If it would help, I'm happy to go through the document tomorrow to explain our thought processes before you start your review. I realise it is short notice but if convenient, please let me know what time works and I will set up the call.

Best. George

George Daugherty
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From: Miklasz Michal <MichalMiklasz@tfl.gov.uk>
Sent: 17 March 2020 16:26
To: George Daugherty <GDaugherty@peterbrett.com>; Wadey, Peter <Peter.Wadey@stantec.com>; Callaghan, Greg <greg.callaghan@stantec.com>
Cc: Taylor Rachel (ST) <Rachel.Taylor@tfl.gov.uk>; Lloyd Matthew (ST) <Matthew.Lloyd@tfl.gov.uk>; Simpson Lucy <LucySimpson@tfl.gov.uk>
Subject: RE: Stag Brewery - Modelling Expectations Meeting

Hi all,

Following up our meeting last week please find attached modelling expectation document for Stag Brewery covering existing scenarios assessment including modelling scope and methodology (principles behind future year assessment will be covered inn details as part of MAP Stage 4).

As mentioned the decision about what flow scenarios should be used for this scheme will be decided upon assessment of new survey which includes Hammersmith Bridge closure.
Obviously we have to take into consideration recent and future developments around global pandemic but for now please let me know if you have any other comments with relation to attached

Regards,
Michal

Michal Miklasz
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