national highways

Lower Thames Crossing

7.7 Combined Modelling and Appraisal Report - Appendix A - Transport Data Package

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Lower Thames Crossing

7.7 Combined Modelling and Appraisal Report - Appendix A - Transport Data Package

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1 Executive summary

1.1.1 This report is the Transport Data Package (TDP), produced in support of the development of the:

a. Lower Thames Area Model (LTAM)

b. Lower Thames Crossing Development Phase operational assessments.

1.1.2 This TDP sets out:

a. why data is needed

b. what data was already available

c. where additional data was required to support the development of the models identified above and the process by which the data was acquired

d. the process by which the quality of this data was assured in producing the final volumetric dataset

e. details of the final trip dataset

f. details of the journey time dataset

g. details regarding any miscellaneous data collected.

1.1.3 Overall, and following careful assessment of the data, the TDP concludes that the collated traffic data are a suitable basis on which to calibrate and validate the LTAM.

2 Introduction

2.1 Purpose of document

2.1.1 The purpose of the Transport Data Package (TDP) is to provide a review of existing data sources, identify the need for additional data and report the initial analysis of the data, upon which the LTAM, and supporting operational assessments, were developed.

2.2 Structure of this report

2.2.1 This TDP has been developed and structured in accordance with the requirements of National Highways' Project Control Framework (PCF). Subsequent sections of this document are structured as follows:

a. Chapter 3 discusses the need for traffic data and provides a summary of the data collection approach

b. Chapter 4 provides a review of existing data sources considered to be within scope for the Lower Thames Crossing appraisal

c. Chapter 5 describes existing transport models and how data from those models could be used in the development of the LTAM

d. Chapter 6 provides an overview of any new data collection activities undertaken

e. Chapter 7 provides a summary of the overall volumetric dataset used for the development of the LTAM

f. Chapter 8 provides a summary of the overall trip record dataset used for the development of the LTAM

g. Chapter 9 provides a summary of the overall journey time dataset used for the development of the LTAM

h. Chapter 10 provides a detailed description of the data used in the development of operational models for the Lower Thames Crossing appraisal

i. Chapter 11 provides a description of the data storage methodology and how outputs were produced to inform model development activities

j. Chapter 12 provides the overall conclusion of the data collection exercise and comments on the viability of the collected dataset for use in developing the LTAM.

2.2.2 The associated executive summary, appendices and abbreviations/ glossary are also included as supporting text.

2.3 The Project

2.3.1 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel. The Project route is presented in Plate 2.1.

2.3.2 The A122 would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel entrances would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.

2.3.3 Junctions are proposed at the following locations:

a. New junction with the A2 to the south-east of Gravesend

b. Modified junction with the A13/A1089 in Thurrock

c. New junction with the M25 between junctions 29 and 30

2.3.4 To align with National Policy Statement for National Networks (Department for Transport, 2014) policy and to help the Project meet the Scheme Objectives, it is proposed that road user charges would be levied in line with the Dartford Crossing. Vehicles would be charged for using the new tunnel.

2.3.5 The Project route would be three lanes in both directions, except for:

a. link roads

b. stretches of the carriageway through junctions

c. the southbound carriageway from the M25 to the junction with the A13/A1089, which would be two lanes

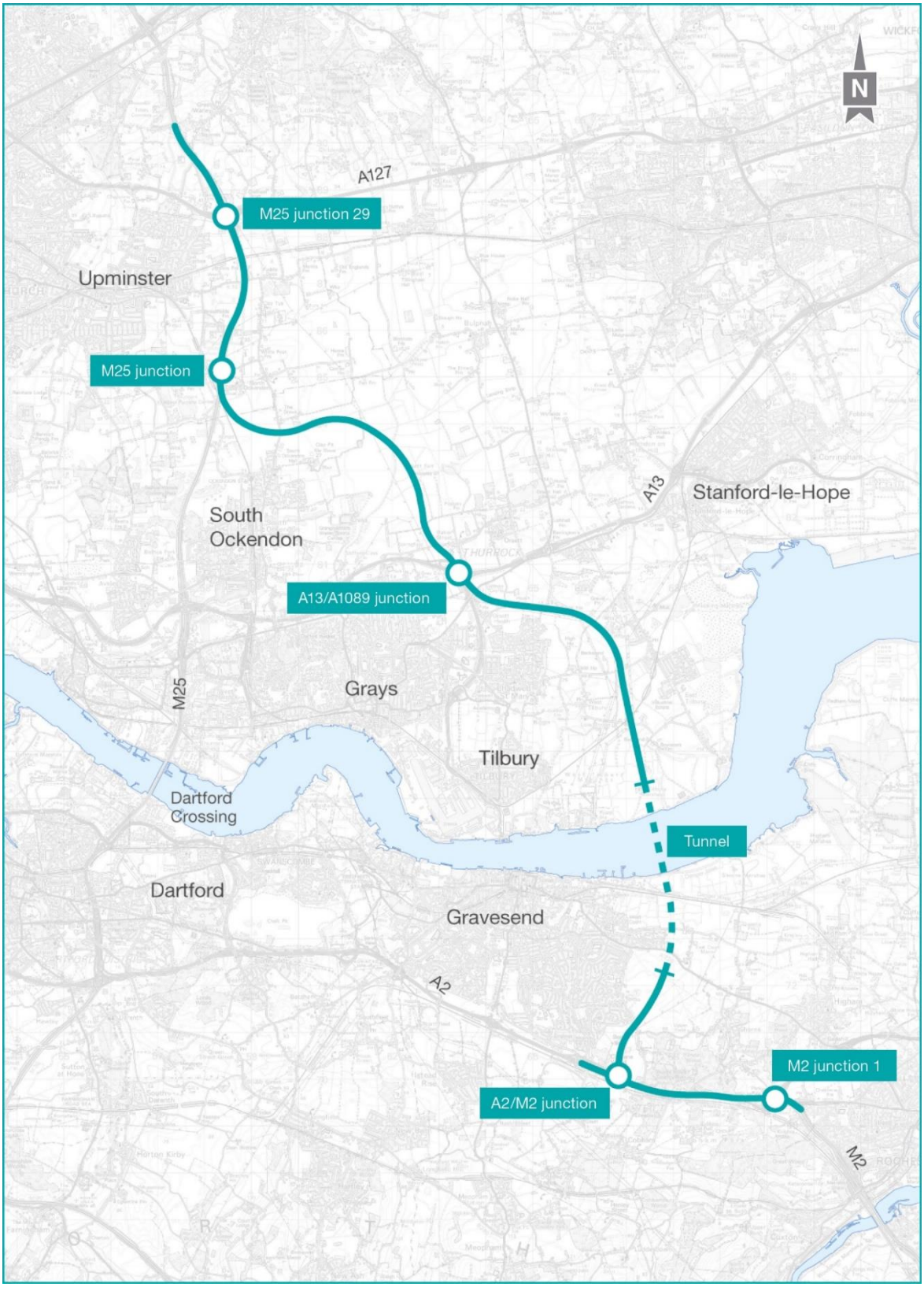
2.3.6 In common with most A-roads, the A122 would operate with no hard shoulder but would feature a 1m hard strip on either side of the carriageway. It would also feature technology including stopped vehicle and incident detection, lane control, variable speed limits and electronic signage and signalling. The A122 design outside the tunnel would include emergency areas. The tunnel would include a range of enhanced systems and response measures instead of emergency areas.

2.3.7 The A122 would be classified as an ‘all-purpose trunk road’ with green signs. For safety reasons, walkers, cyclists, horse riders and slow-moving vehicles would be prohibited from using it.

2.3.8 The Project would include adjustment to a number of local roads. There would also be changes to a number of Public Rights of Way, used by walkers, cyclists and horse riders. Construction of the Project would also require the installation and diversion of a number of utilities, including gas mains, overhead electricity powerlines and underground electricity cables, as well as water supplies and telecommunications assets and associated infrastructure.

2.3.9 The Project has been developed to avoid or minimise significant effects on the environment. The measures adopted include landscaping, noise mitigation, green bridges, floodplain compensation, new areas of ecological habitat and two new parks.

Plate 2.1 Lower Thames Crossing route



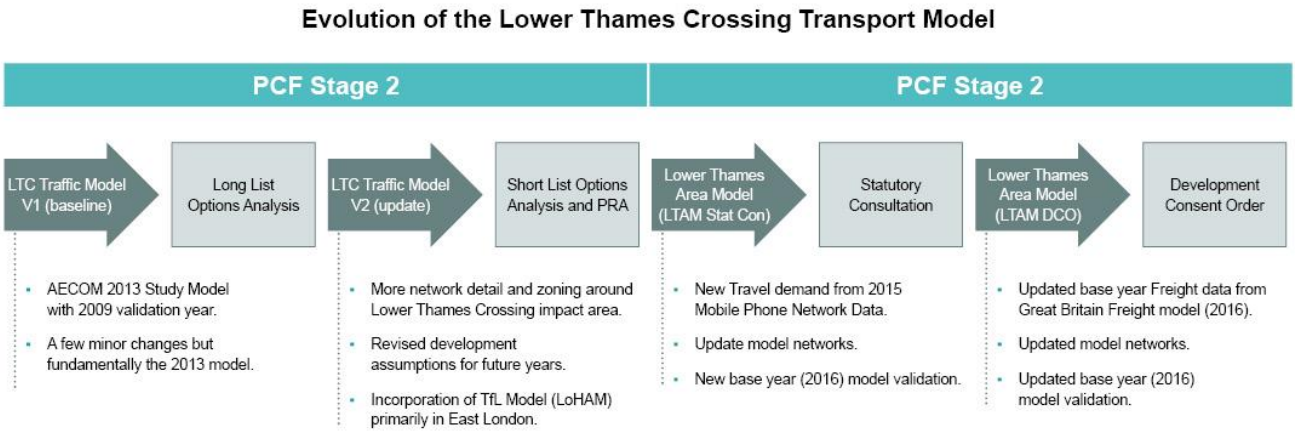
3 Need for traffic data

3.1 Background to Lower Thames Crossing models

3.1.1 The traffic modelling approach adopted for the appraisal of the Lower Thames Crossing options was determined by the Project programme requirements, the level of detail required at each stage of the analysis and the availability of existing traffic models. These three criteria led to a three-stage modelling approach being adopted as illustrated in Plate 3.1. Versions 1 and 2 of the Lower Thames Crossing model (LTC V1 and LTC V2) are derived from the model developed by AECOM for the Review of Lower Thames Crossing Capacity Study (DfT, 2013). These two versions of the LTC model were used for the Project Control Framework (PCF) Stage 2 Option Selection, LTC V1 for the long list appraisal and LTC V2 for the appraisal of the short-listed options. A modified version of the LTC V2 model (Version 2.1) was used to appraise the five Post-Consultation Appraisal Routes. The LTC Version 2.1 model included a number of network enhancements, incorporated new values of time based on the Department for Transport's (DfT) October 2015 consultation and revisions to the methodology for the production of future year trip ends.

3.1.2 For the Project Development Phase, in order to meet PCF Stage 3 and Development Consent Order (DCO) application submission requirements, a further update of the model was undertaken. This model update is called the Lower Thames Area Model (LTAM) and uses recent (near exclusively post 2014 (see Chapter 4 for more details of the existing data used)) traffic flow and trip demand data. The LTAM base year model (March 2016) provides a more robust basis from which to forecast future traffic flows. Two versions of the LTAM exist, one produced to support Statutory Consultation in 2018, and one to support the Development Consent Order application. The latter has updated heavy goods vehicle (HGV) data, and further refinements to network data and base year model validation.

Plate 3.1 Transport Model Approach for the Lower Thames Crossing



3.2 Scheme objectives

3.2.1 National Highways and DfT have agreed Scheme Objectives for the Lower Thames Crossing and these are presented in Table 3.1.

Table 3.1 Scheme Objectives

Scheme objectives These are the objectives against which the scheme is appraised	
Strategic	• To support sustainable local development and regional economic growth in the medium to long term • To be affordable to government and users • To achieve value for money
Transport	• To relieve the congested Dartford Crossing and approach roads and improve their performance by providing free flowing north south capacity. • To improve resilience of the Thames crossings and major road network. • To improve safety
Environment	• To minimise any adverse impacts on health and the environment

3.3 The requirement for data

3.3.1 A wide range of different types of data are required for use in the development of the LTAM. This includes data upon which to develop the model networks and demand matrices, data for model calibration and validation as well as data required for presentation of model results and for use in other assessment activities such as operational, economic and environmental assessments.

3.3.2 The datasets are:

a. Volumetric:

i. TRIS (formerly TRADS)

ii. DfT Traffic Count Database

iii. A2 Bean/Ebbsfleet study

iv. M20 Smart Motorways Programme

v. TfL

vi. Local Highway Authorities.

b. Trip:

i. SERTM Trip Matrices

ii. LTC V2 Trip Matrices

iii. Census Journey to Work

iv. National Travel Survey

v. Teletrac (formerly Trafficmaster) Origin Destination data.

c. Journey Time:

i. Teletrac Journey Time data.

d. Other:

i. Dart Charge Transaction Data

ii. GIS Data ITN

iii. Traffic Signals

iv. Queue Length Surveys

v. Turning Movement Surveys

vi. Accident Data

vii. Planning Data (for Uncertainty Log)

viii. Demand Model Parameters.

3.3.3 It should be noted that additional operational data was required to support the development of other areas of the Project. This is set out in Section 10 of this report.

3.4 Use of existing and new survey data

3.4.1 In order to ensure that the most appropriate data is used, and to keep the costs associated with additional data collection to a minimum, a comprehensive review of existing data sources was undertaken. This built upon work undertaken during the development of the South East Regional Traffic Model (SERTM) and other relevant studies in the area of interest of the scheme.

3.4.2 Section 4 describes the different types of data available from associated relevant sources. Section 5 provides a review of existing models. Section 6 describes the new data collection.

3.5 Summary

3.5.1 This chapter has set out the need for the collection of new traffic data to support the development of the LTAM by providing details relating to the evolution of the Lower Thames Crossing traffic model, the scheme objectives and that existing data will be used alongside new data.

4 Existing data

4.1 Volumetric data

4.1.1 Volumetric traffic count data is primarily utilised during model calibration and validation activities. During the initial phase of this project detailed analysis was undertaken on the potential area of impact of a new Lower Thames Crossing. This led to the development of the Fully Modelled Area (FMA) as shown in Plate 4.1 (as the Modelled Area Boundary).

4.1.2 There are a range of different data sources that were identified and assessed for their potential use in the development of the LTAM. These are:

a. TRIS;

b. DfT Traffic Count Database;

c. A2 Bean/Ebbsfleet study;

d. M20 Smart Motorways Programme;

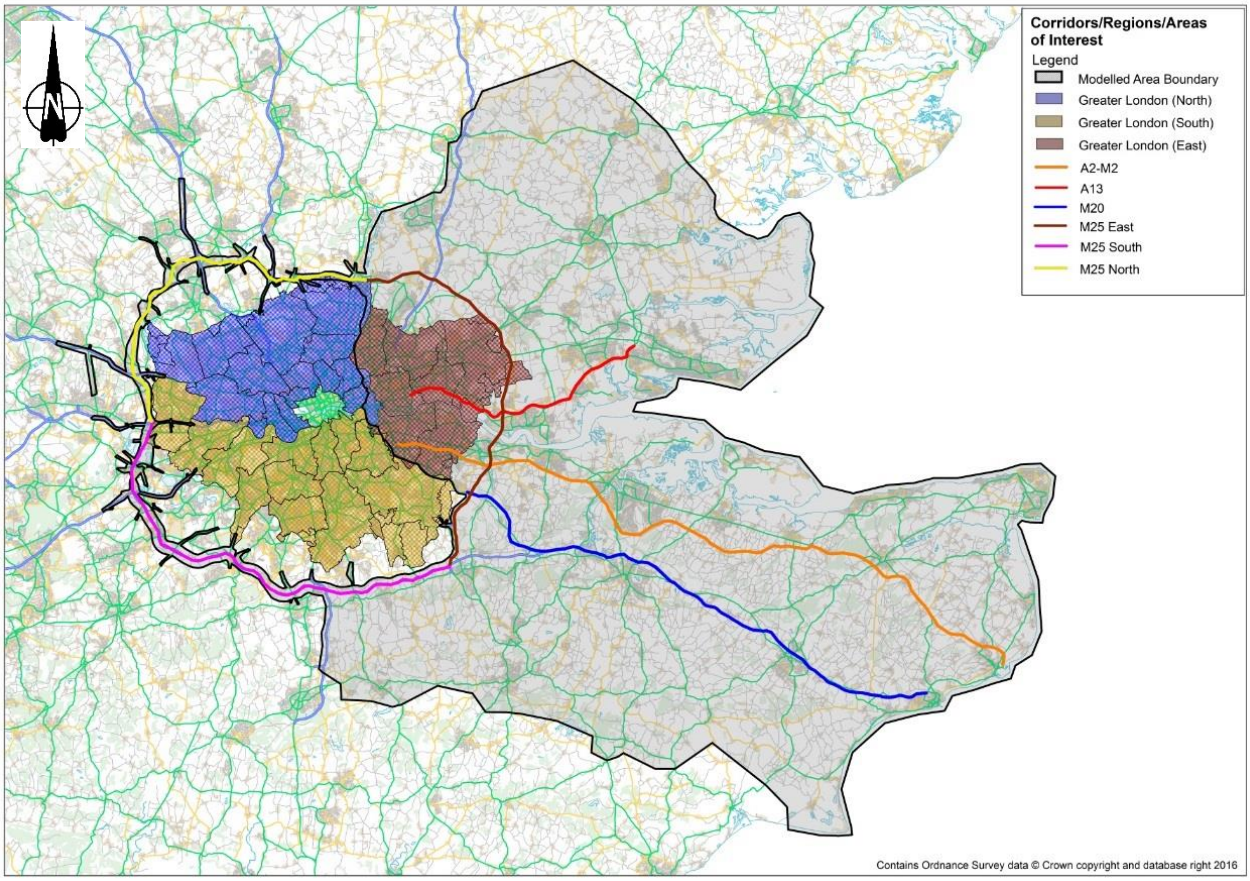
e. TfL; and

f. Local Highway Authorities.

4.1.3 The data from these various sources were compiled into a single database which contains a range of information necessary to ensure that the data selected for use in model development is as robust as can be (see Section 7.3.1 for details of the data checking process). The following text provides an overview of the data that was considered appropriate for use in developing the LTAM.

4.1.4 In summary the data count locations were allocated to a corridor/region/area of interest. Plate 4.1 shows these different geographical classifications.

Plate 4.1 Corridor/Region/Area of Interest Definitions



TRIS Data

4.1.5 This is a database of automatic traffic counts on the Strategic Road Network (SRN) in England. It provides continuous traffic flow data disaggregated in a variety of ways. The count database is called TRIS (formerly called TRADS) and is accessed via a web based geographical interface (Highways England, 2020). The data includes an automatically derived vehicle classification. Current guidance suggests that vehicles classified as greater than 6.6m in length, as defined by TRIS, can be assumed to be HGV.

4.1.6 All TRIS sites within the fully modelled area were identified and downloaded. These were then passed through a quality checking process to identify unacceptable variations and volatility in the data, as set out in paragraph 4.1.8.

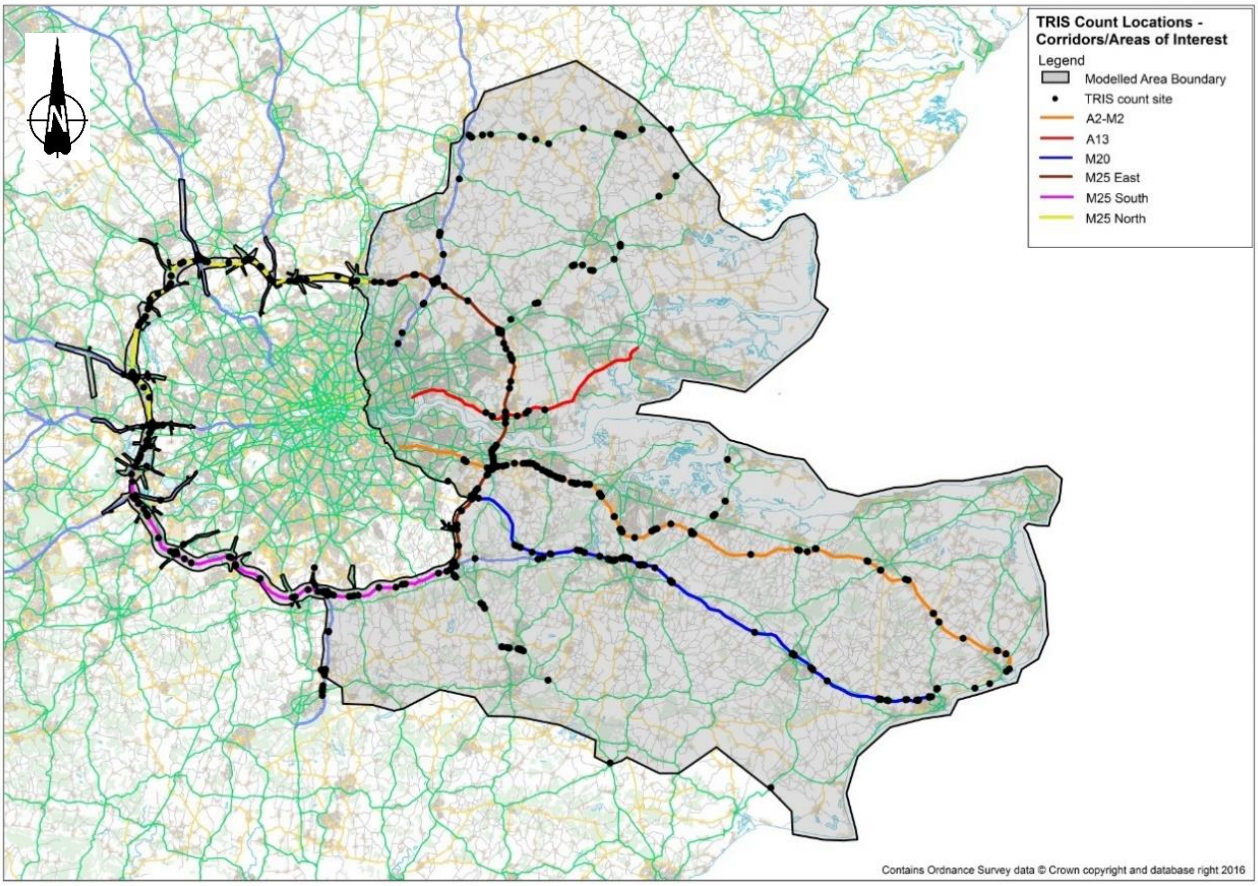
4.1.7 The database was used for a number of purposes including the identification of a neutral month for the LTAM to represent, the identification of the model time period, producing factors to apply to other data sources to generate model month and time period equivalent counts and individual link counts for use in model calibration and validation.

4.1.8 Quality assurance of the TRIS data, other than the steps described in section 7.3.1, involved taking into consideration the "Quality Index" factor (specific for this type of data). It is an integer value between 0 and 15, given for each 15-minute flow interval, described by National Highways as the number of valid one-minute counting records used to generate a flow value for that time interval. Any 15-minute interval with a Quality Index lower than 15 means that the flow

value for that time period is estimated based on the indicated number of one-minute counting records and not a complete 15-minute observation. Taking that into account, National Highways TPG advised that we should exclude any 15-minute interval of flow data with a Quality Index factor lower than 15.

4.1.9 Annex A, Table A.1 provides a list of detailed information on the different TRIS count locations that were utilised for these purposes. The easting and northing of the count locations are provided along with the range of dates used for each site. The majority of these are based on the representative model month (29 February 2016 to 20 March 2016). Where not the case, then either the data during that time interval showed substantial volatility or there were substantial portions of missing data. In these instances, the time interval was replaced by an alternate time interval and appropriate factoring was applied to convert the flow data into the required model interval. Plate 4.2 shows the graphical location of these count sites.

Plate 4.2 TRIS Count Locations Used in LTAM Development



DfT Traffic Count Database

4.1.10 This database provides street-level traffic data for every junction-to-junction link on the 'A' road and motorway network in Great Britain (DfT, 2020). The data provides an hourly traffic flow from 07:00 to 19:00 by vehicle classification by direction. Data is provided for a range of different survey dates. Only data collected in 2014 or later has been used. Details of the seasonal adjustment factors used are contained in Table 7.3.

4.1.11 The data was used to generate vehicle type percentages for each corridor/region/area of interest by road type, which were applied to total traffic flow values collected from automatic traffic count data at locations where a site specific classified count was not available. The vehicle type percentages were calculated by time period.

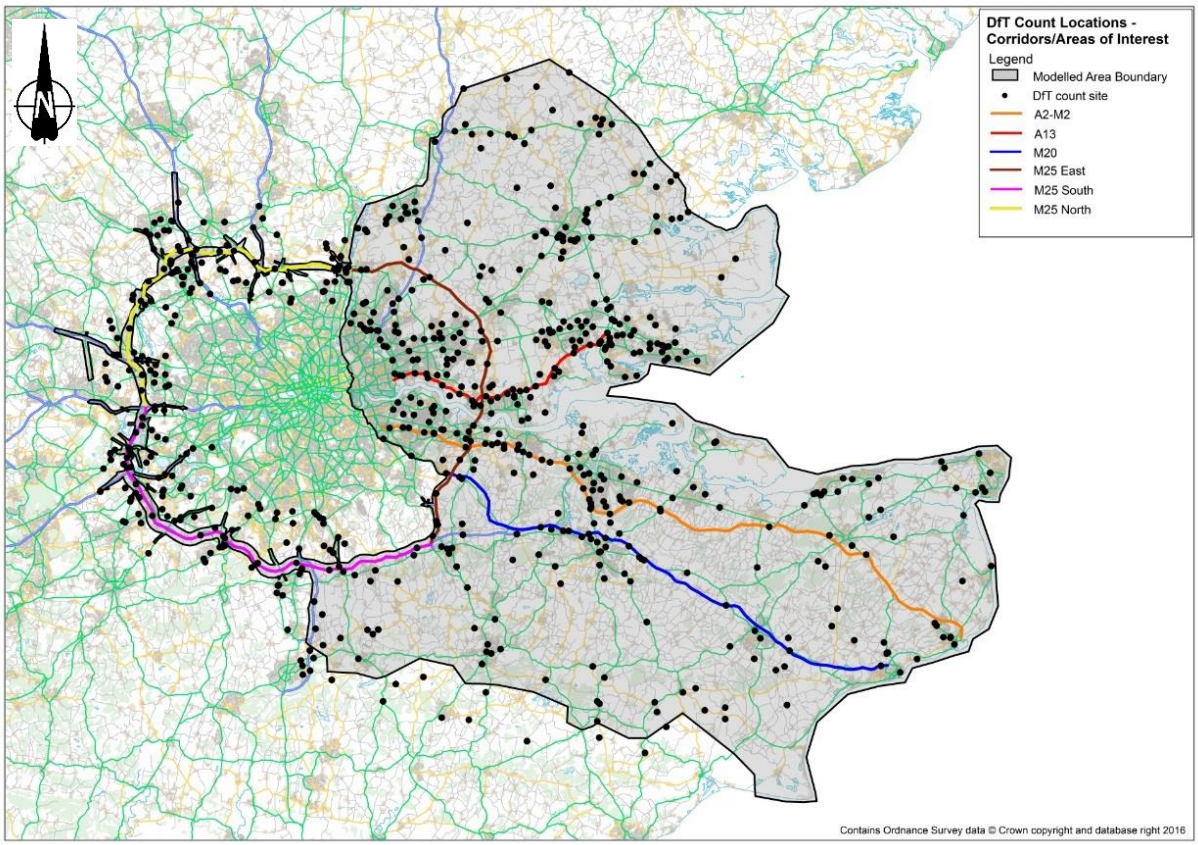
4.1.12 Annex A, Table A.2 provides a list of detailed information on the different DfT counts that were used for these purposes. The easting and northing of the count location is provided along with the date of survey for each site. The corridor/region/area of interest and road type is provided. Table 4.1 provides summary statistics for the number of sites in each category. Plate 4.3 shows the locations of these sites graphically.

Table 4.1 DfT Count Sites by Corridor/Region/Area of Interest and Road Type

Corridor/Region/Area of interest	Road type	Number of Sites
A2-M2	Motorway	10
M20	Motorway	16
M25 east (junctions 25 – 5)	Motorway	14
M25 south (junctions 5 – 15)	Motorway	22
M25 north (junctions 15 – 25)	Motorway	22
Other	Motorway	36
Buckinghamshire	A	6
East Sussex	A	4
Essex	A	94
Hertfordshire	A	47
Kent	A	113
Medway	A	14
Southend-on-sea	A	11
Surrey	A	51
Thurrock	A	24
West Sussex	A	4
Greater London (East)	A	89
Greater London (South)	A	21
Greater London (North)	A	14

Corridor/Region/Area of interest	Road type	Number of Sites
Buckinghamshire	B	4
East Sussex	B	6
Essex	B	48
Hertfordshire	B	4
Kent	B	46
Medway	B	4
Southend-on-sea	B	0
Surrey	B	28
Thurrock	B	2
West Sussex	B	2
Greater London (East)	B	12
Greater London (South)	B	6
Greater London (North)	B	8
Buckinghamshire	Minor	16
East Sussex	Minor	8
Essex	Minor	150
Hertfordshire	Minor	62
Kent	Minor	144
Medway	Minor	26
Southend-on-Sea	Minor	17
Surrey	Minor	86
Thurrock	Minor	27
West Sussex	Minor	6
Greater London (East)	Minor	66
Greater London (South)	Minor	6
Greater London (North)	Minor	14

Plate 4.3 DfT Count Locations Used in LTAM Development

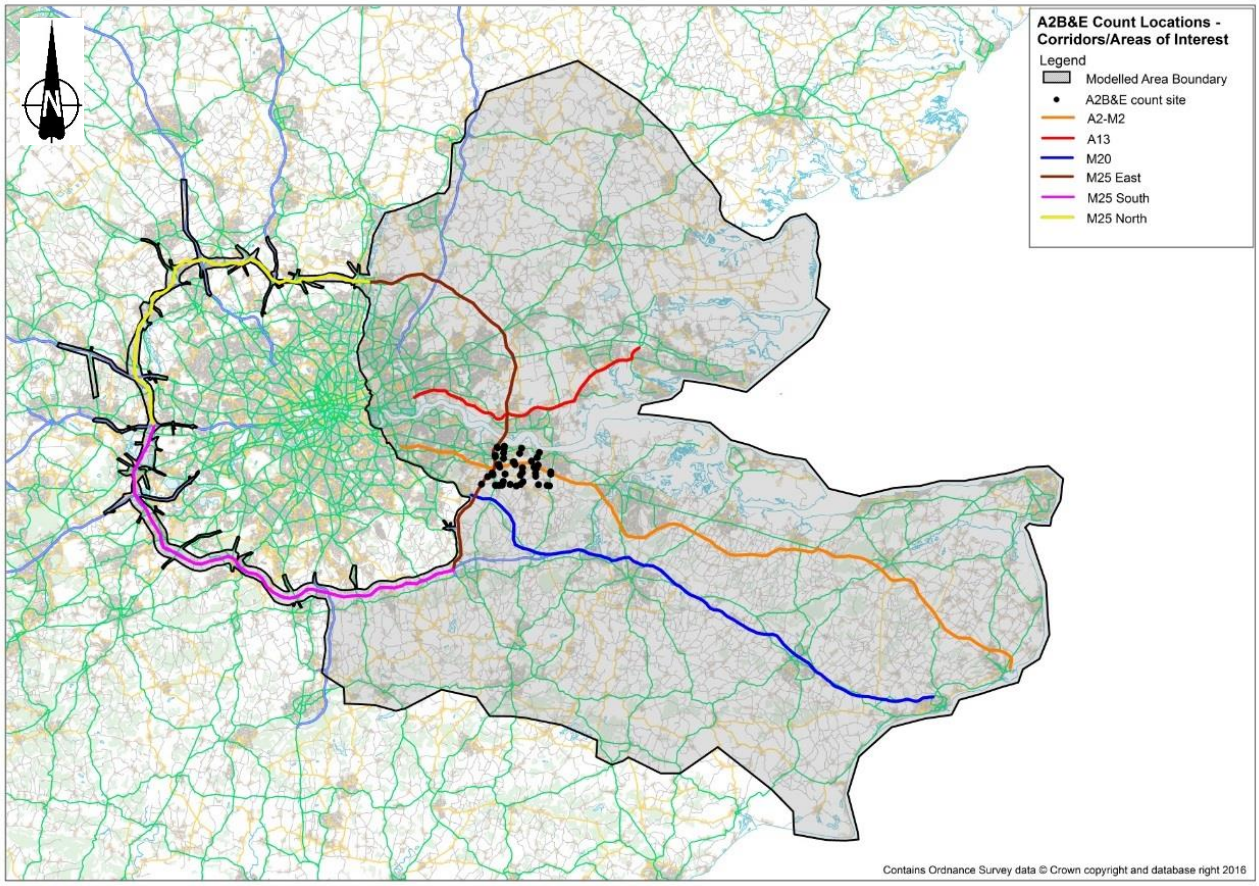


A2 Bean/Ebbsfleet Study

4.1.13 In 2012 DfT and the Department for Communities and Local Government (DCLG) (now the Department for Levelling Up, Housing & Communities) made a number of commitments to help progress the planned developments in the Kent Thameside area. These included a commitment to invest in further work to refresh the business case and preliminary designs of the A2 Bean and Ebbsfleet Junction improvements, as part of the development necessary for future delivery of the proposals. The A2 Bean and Ebbsfleet Junctions are adjacent grade-separated Junctions on the A2 trunk road, approximately 2km apart.

4.1.14 Traffic surveys were carried out in late June - July 2014 to enable current conditions on the local network in the A2 Bean and Ebbsfleet area to be understood and evaluated. All surveys were conducted prior to 19 July 2014. Volumetric data was collected by a combination of two-week Automatic Traffic Counters and one-day Classified Link or Junction counts. Annex A, Table A.3 provides details of the counts sourced from the A2 Bean/Ebbsfleet project used in the LTAM development. Plate 4.4 shows the locations of these sites graphically.

Plate 4.4 A2 Bean/Ebbsfleet Count Locations Used in LTAM Development

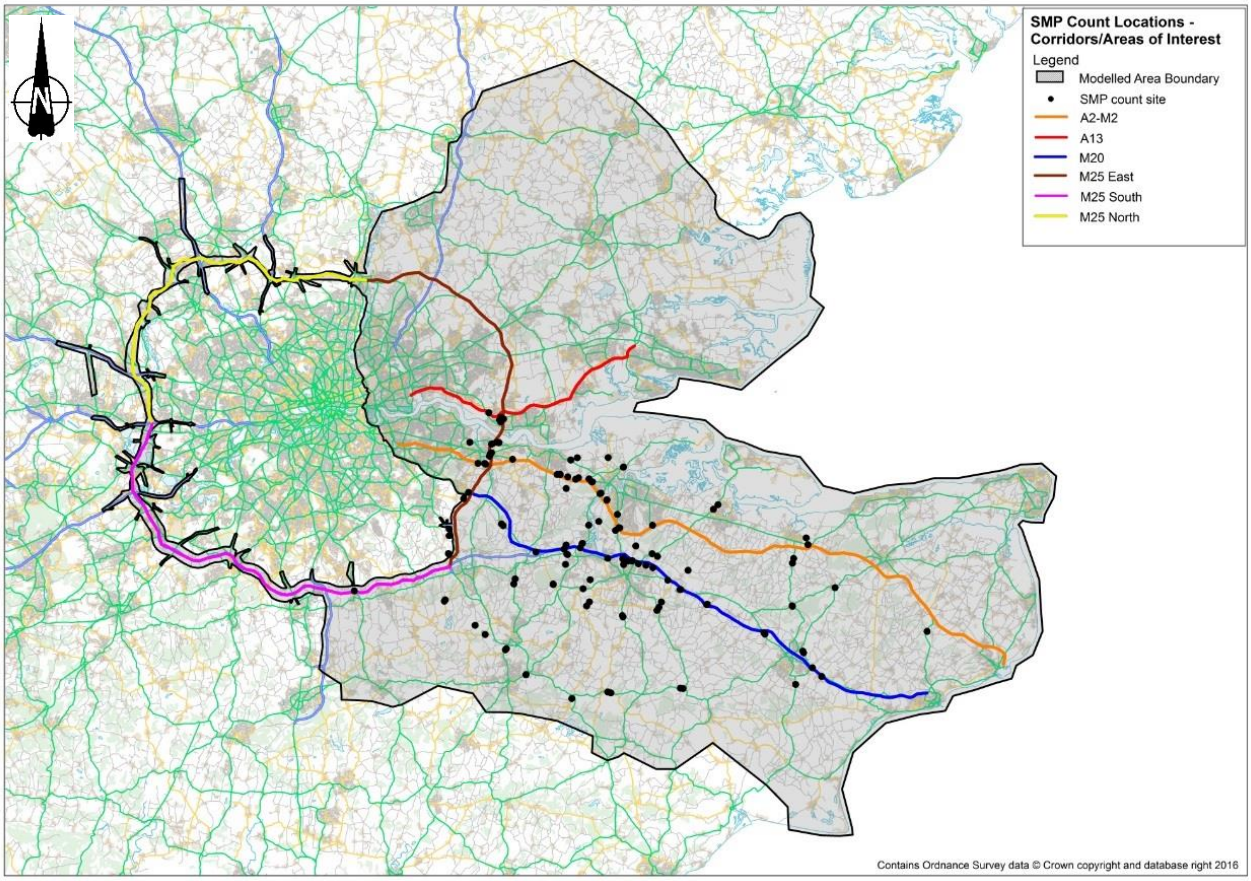


M20 Smart Motorways Programme

4.1.15 In November 2014 Highways England (now known as National Highways) commissioned a study to appraise a proposed Smart Motorway Intervention on the M20 between Junctions 3 and 5. As part of the appraisal a transport model was developed, and a series of traffic surveys were undertaken along the M20 corridor and surrounding areas.

4.1.16 The surveys were completed in May/June 2015. They included automatic traffic counts and classified link counts. Annex A, Table A.4 provides details of those sites considered relevant for use in developing the LTAM. The easting and northing of each site has been provided along with a description of the type of count undertaken Plate 4.5 shows the locations of these sites graphically.

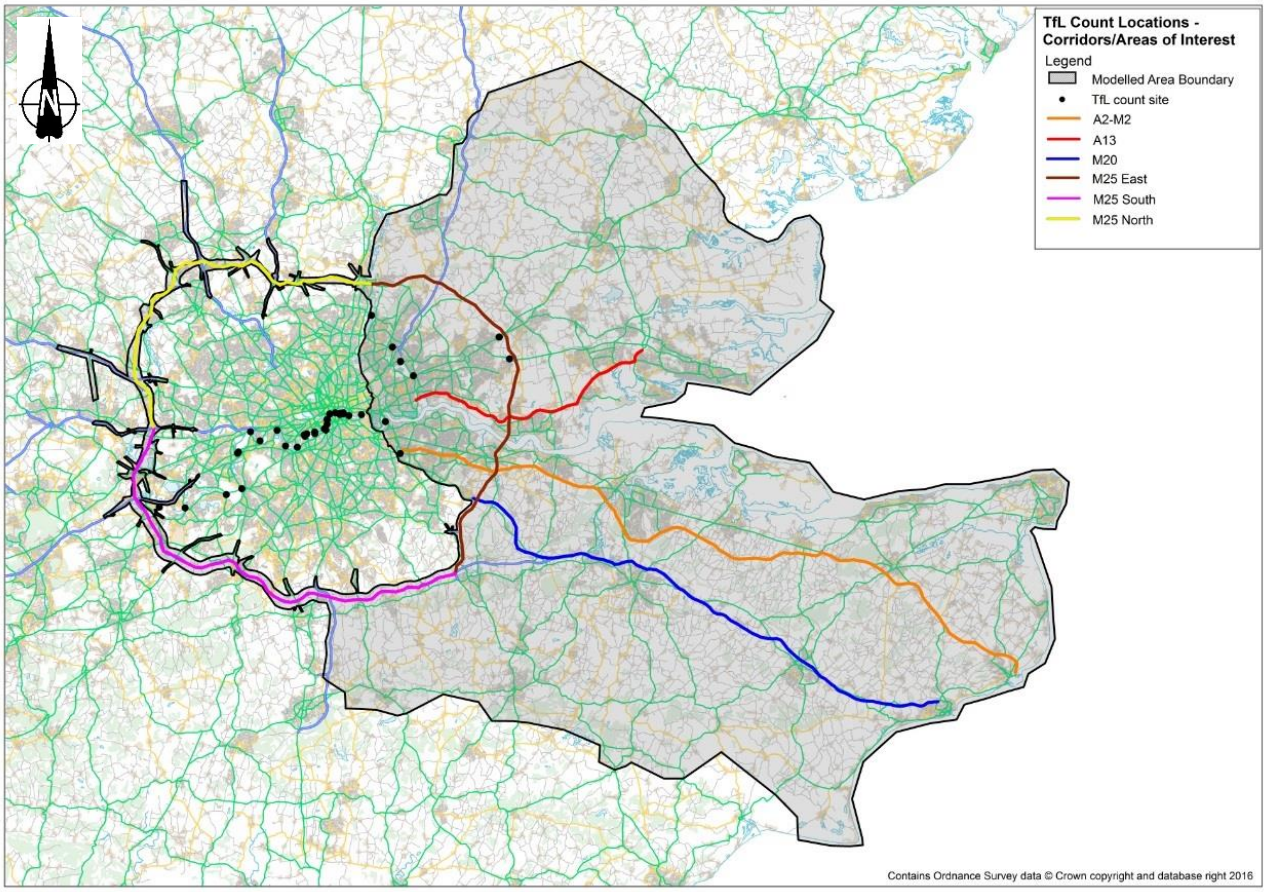
Plate 4.5 M20 SMP Count Locations Used in LTAM Development



TfL Count Database

4.1.17 Transport for London (TfL) maintains a comprehensive database of traffic counts throughout London. Analysis was undertaken of these traffic count sites in order to identify those considered relevant for the development of the LTAM. Annex A, Table A.5 provides details of those sites, along with the easting and northing. The type of count data available is also provided. Plate 4.6 shows the locations of these sites graphically.

Plate 4.6 Transport for London Count Locations Used in LTAM Development



Local Highway Authority Databases

4.1.18 A range of Local Authorities were also contacted in order to identify any existing data they hold which could be of use in developing the LTAM. The counties considered relevant were:

a. Hertfordshire

b. Kent

c. Surrey

d. Essex

e. East Sussex.

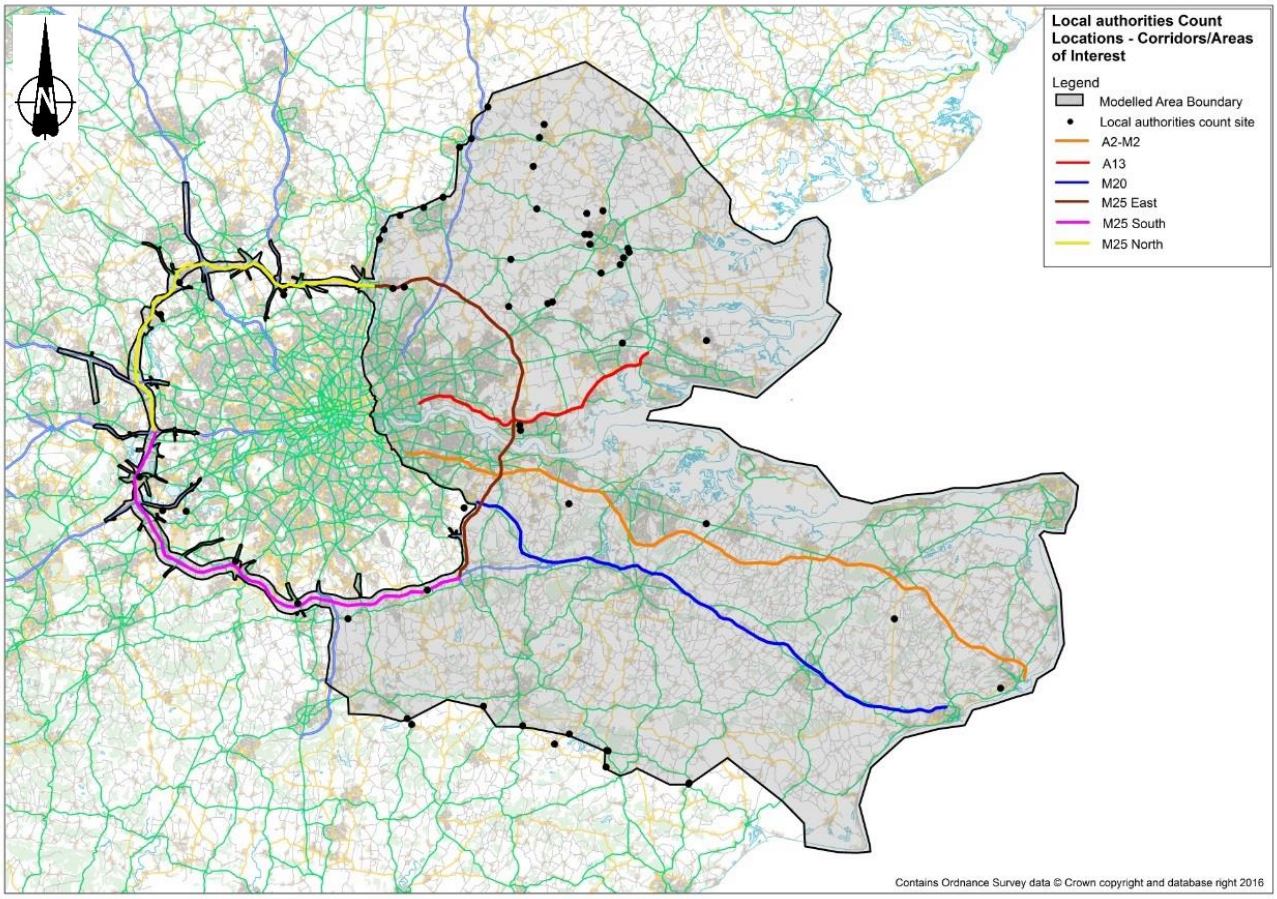
4.1.19 Annex A, Table A.6 provides a list of the different sites, the Local Authority they were sourced from, the survey date, the easting and northing and the type of count data. Table 4.2 summarises the data received from each Local Authority and Plate 4.7 shows the location of these sites graphically.

4.1.20 Of the 116 sites detailed, all bar ten have a survey date of 2014 or later.

Table 4.2 Summary of Local Authority Count Data

Local Authority	Number of Count Sites
Hertfordshire	10
Kent	12
Surrey	12
Essex	62
East Sussex	20

Plate 4.7 Local Authority Count Locations Used in LTAM Development



4.2 Trip data

4.2.1 The different types of datasets used to develop the LTAM Prior Matrices are:

South East Regional Traffic Model (SERTM) Matrices

4.2.2 The primary source of trip data used for developing the demand matrices in the LTAM is the SERTM demand matrices. The SERTM demand matrices were derived from mobile phone data supplied as part of the National Highways Trip Information System (TIS). The data used was a “provisional dataset” provided to the SERTM team in September 2015 and relating to an average Monday to Friday weekday in March 2015. The terminology ‘provisional dataset’ primarily refers to the fact that, rather than waiting for a full year of data to become

available, an initial dataset from the latest available neutral month (March 2015) was used in the regional model matrix development due to programme constraints. This dataset was subjected to numerous checks and adjustments during the matrix development process, to ensure the final product was robust for the purpose intended.

4.2.3 The SERTM demand matrices have 2,306 zones and have the following time periods:

a. an average morning peak hour between 07:00 and 10:00

b. an average inter-peak hour between 10:00 and 16:00

c. an average evening peak hour between 16:00 and 19:00.

4.2.4 The provisional mobile phone data, as provided to the SERTM model development team, had the following journey purpose specifications:

a. Home-Based Work (HBW) Outbound

b. HBW Inbound

c. Home-Based Other (HBO) Outbound

d. HBO Inbound

e. Non-Home-Based (NHB).

4.2.5 The provisional mobile phone data does not have any vehicle classification segmentation. They represent highway and rail passenger movements. As part of the SERTM matrix development process these matrices were processed to represent the following mode/vehicle classification/journey purpose segments:

a. Car Commute

b. Car Other including Home-Based and Non-Home-Based Car Other

c. Car Employers' Business including Home-Based and Non-Home-Based Car Employers' Business

d. LGV

e. HGV

f. Rail Commute

g. Rail Other including Home-Based and Non-Home-Based Rail Other

h. Rail Employers' Business including Home-Based and Non-Home-Based Rail Employers' Business.

LTC V2 Matrices

4.2.6 For the Lower Thames Crossing Stage 2 (LTC V2) traffic model, the 2009 forecast M25 demand matrices, at a production-attraction level, were taken from

the M25 model as a primary source. These matrices have been through a process of various adjustments as required by the LTC V2 traffic modelling and the most recent version of the LTC V2 demand matrices have 1,207 zones. These matrices have peak hour travel demand as follows:

a. a morning peak hour from 08:00 to 09:00

b. an average inter-peak hour between 10:00 and 16:00

c. an evening peak hour from 17:00 to 18:00.

4.2.7 These matrices are classified under the following user classes:

a. UC1=HGV

b. UC2=LGV

c. UC3=Car Employers' Business

d. UC4=Car Other Non-Toll

e. UC5= Car Other Toll 1 (i.e. existing Dartford Crossing in Do-Minimum and Do-Something)

f. UC6= Car Other Toll 2 (new Lower Thames Crossing).

Census Journey to Work (JTW)

4.2.8 The last Census in the UK took place on 27 March 2011 and was run by the Northern Ireland Statistics & Research Agency (NISRA), National Records of Scotland (NRS) and the Office for National Statistics (ONS) for both England and Wales. The 2011 Census JtW dataset (WU03) provides estimates of the usual residents of the UK aged 16 and over by their method of travel to work. This dataset classifies residents in each Middle Layer Super Output Area (MSOA) or higher area of the UK by their method of travel to work. This dataset also shows the movement between their local authority of residence and workplace along with a mode-wise trip estimate for 'travel to work' on an average weekday.

National Travel Survey (NTS) Data

4.2.9 The NTS data is a household survey, conducted by the Department for Transport (DfT), UK, and is designed to monitor long-term trends in personal travel (DfT, 2020a). NTS data collection consists of a face-to-face interview and a 7-day self-completed written travel diary, allowing travel patterns to be linked with individual characteristics. The survey collects information on how, why, when and where people travel as well as factors affecting travel (e.g. car availability etc.). The NTS covers travel by people of all age groups, including children. Approximately 16,000 individuals, in 7,000 households in England, participate in the NTS each year. The survey results from the years 2002 to 2014 were considered as part of this work.

Teletrac Origin Destination (OD) Data

4.2.10 Teletrac (formerly Trafficmaster) is a dataset produced by Teletrac Navman UK Ltd provided to local authorities by DfT.

4.2.11 Teletrac provides a GPS based OD dataset for Cars, LGV's and HGV's. This is supplied at the Census LSOA zoning level for the required study area by DfT. This dataset was used to verify the trip length distribution of the LGV trips for the LTAM.

4.3 Journey Time Data

4.3.1 Journey time data is used to analyse observed travel times and speeds along specific corridors of interest in the transport network. The data is used to verify that the model represents these times and speeds to a reasonable level of accuracy. Traditionally, the data has been collected using "moving observer" methods whereby the data is collected by driving around the network, monitoring speeds and times. Each route would need to be undertaken numerous times in each model time period for a robust sample of times to be collected.

4.3.2 When developing a model with a large geographical scope as with the LTAM, this becomes an extensive, time consuming and expensive process. For these reasons, alternate sources of data are becoming more widely used. These alternate methods such as Teletrac and the TRIS journey time database also offer the ability to make use of a vastly increased sample size.

Teletrac Journey Time Database

4.3.3 Teletrac GPS navigation data is now widely used as a source of journey time data for developing transport models. It is collected via GPS devices installed in vehicles that record the time taken for the vehicle to travel along individual roads. This data is then matched to individual links in the Integrated Transport Network (ITN) GIS database for analysis purposes. The Teletrac sample consists of approximately 100,000 vehicles in the whole of the UK. The data is made available to consultants working on government funded projects free of charge by the Department for Transport

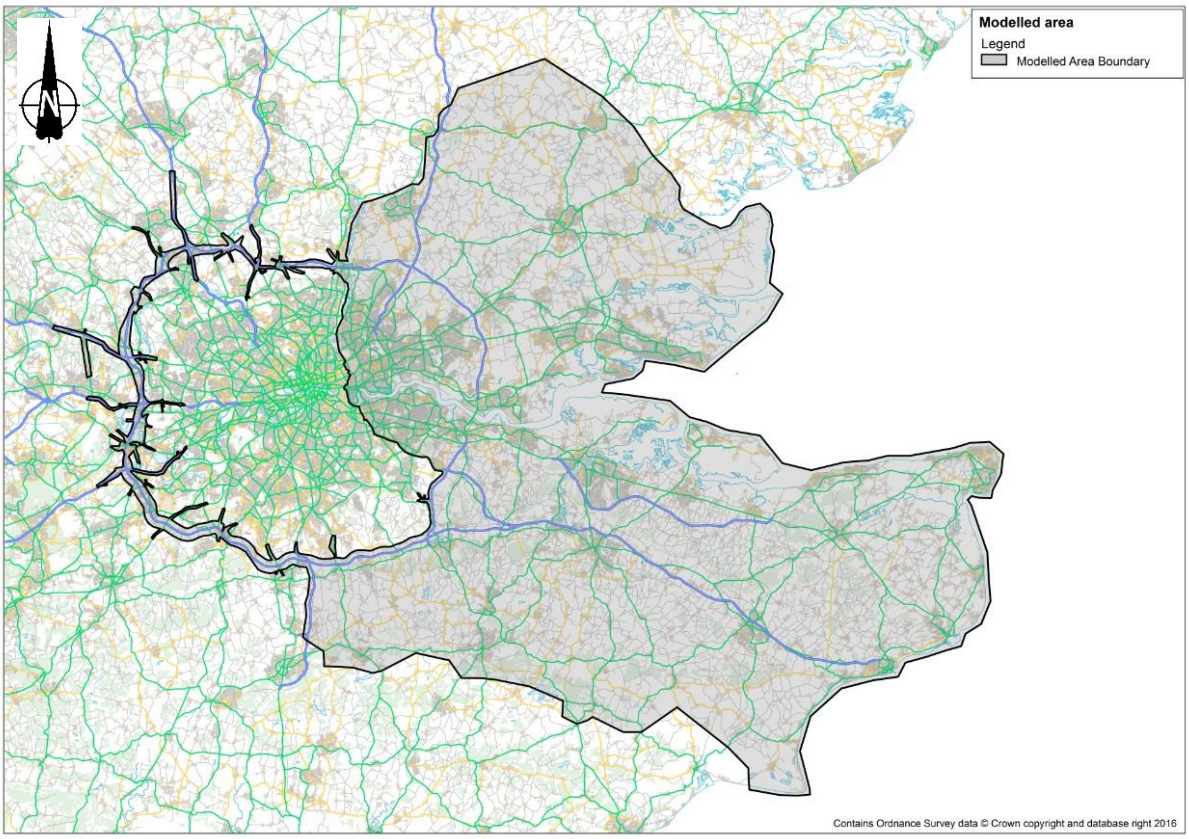
4.3.4 Vehicle times are recorded in time periods of 15-minute intervals. The data provides the average journey time within each 15-minute interval by vehicle type. The sample size used to calculate each average journey time is also provided. The ITN is provided in a GIS layer, typically for a particular region of the UK. Within this GIS layer the length of each link is also provided which enables speeds to be calculated.

4.3.5 As discussed in Section 9, the Teletrac data was used to assess journey times for particular routes, to act as an 'observed' journey time. Initially a series of journey time routes was defined using the ITN network. A correspondence between the ITN link structure and the LTAM link structure was then be created. The data was used to generate the observed travel time by vehicle category in each of the model time periods. This was achieved by summing median travel times for each individual link on a particular route. This was then used in model calibration to compare observed and modelled journey times.

4.3.6 The Teletrac data was also used to determine observed average speeds along individual links. This was used in defining speed pivot factors for application during the model speed banding exercise as defined in Interim Advice Note 185.

4.3.7 For use in developing the LTAM, Teletrac GPS data for the area shown in Figure 4.8 was requested for the model period of March 2016.

Plate 4.8 LTAM – Teletrac Data Area Request



TRIS Journey Time Database

4.3.8 This database (Highways England, 2020a) provides average journey time and speed information for 15-minute periods since April 2015 on all motorways and 'A' roads managed by National Highways, known as the Strategic Road Network, in England.

4.3.9 Journey times and speeds are estimated using a combination of sources, including Automatic Number Plate Recognition (ANPR) cameras, in-vehicle Global Positioning Systems (GPS) and inductive loops built into the road surface. Please note that journey times are derived from real vehicle observations and imputed using adjacent time periods or the same time period on different days.

4.3.10 This dataset was used to supplement the Teletrac journey time data and was used as a verification dataset.

Dartford Crossing Bluetooth Data

4.3.11 The Dartford Crossing provides the only Thames River crossing on the Strategic Road Network (SRN) east of London. In late 2014 a system of electronic payment (Dart Charge) was introduced, the “toll” booths were removed, and the approach roads were realigned to improve traffic flow.

4.3.12 Prior to the opening of the Dart Charge system a series of Bluetooth surveys were commissioned to collect travel time and speed data for traffic using the crossing and to monitor the impact of DART Charge post opening. This vehicle speed data is available from July 2014 to the third week in August 2017.

4.3.13 This data was also used as a verification dataset for the Teletrac JTDB.

4.4 Other Data

4.4.1 There are a range of other datasets that were used in developing the LTAM. These are as follows.

DART Charge Transaction Data

4.4.2 Transaction data collected by the DART Charge automatic payment system is available and can be used to identify traffic flow profiles and vehicle compositions using the existing crossings at Dartford. At the time of writing this report, traffic flow data is available from November 2014 to date.

GIS Data (ITN)

4.4.3 The ITN data is provided by DfT and is used for matching the Teletrac Journey Time data. It is important to use this GIS data in order to maintain the spatial connection throughout all the different modelling processes. This GIS database was supported by satellite imagery when coding model networks and site visits where considered appropriate.

Traffic Signal Data

4.4.4 Obtaining traffic signal data from local highway authorities has proven to be very difficult, in particular where a model has a large geographical scope such as the LTAM. Traffic signal timings were taken from the source models where available. Traffic signal templates were applied in other locations and these modified when necessary during model calibration.

Queue Length Surveys

4.4.5 There were no queue length surveys available for use in developing the LTAM. Some queue length data was collected for use as part of the operational traffic data collection but it is not considered necessary for use in developing the LTAM as this level of detail is not required in a strategic model.

Turning Movement Count Surveys

4.4.6 There are no existing turning movement count surveys available for use in developing the LTAM. Some turning movement count data was collected for use as part of the operational traffic data collection for Lower Thames Crossing, as set out in Chapter 10.

Accident Data

4.4.7 Accident and incident data were obtained to use when undertaking the economic assessment of the Project. STATS 19 data was requested throughout the model area.

Data for Uncertainty Log – Local Plans etc.

4.4.8 In order to develop the forecast demand matrices and networks it was necessary to collect data on future development and infrastructure plans. Much of the data had already been collected during previous assessment stages for the Project and this was refreshed following another request for data from relevant local and highway authorities to ensure the data is as up to date as possible.

4.4.9 A further refresh of this data was collected to inform the update to the LTAM, produced after Statutory Consultation.

Demand Model Parameters

4.4.10 As the LTAM is different to the LTC V2 and SERTM models there are no existing demand model parameters that could be used. It was therefore necessary to use the TAG (TAG Unit M2: Variable Demand Modelling) illustrative demand model parameters as a starting point and these could then be adjusted during demand model calibration if necessary.

4.5 Summary

4.5.1 There are a wide range of existing data sources that were identified as being useful for the development of the LTAM. These have been sourced from the data holders and analysed in order to check quality and ensure they are appropriate for use in developing the model.

4.5.2 There are some gaps in the data which required additional surveys to be undertaken. This is be discussed in Section 6.

5 Existing models

5.1 Introduction

5.1.1 This chapter provides a discussion of any existing models in the vicinity of the project which are considered to be relevant for use in the development of the LTAM. The Appraisal Specification Report for the LTAM provides a detailed review of these existing models. This chapter provides a summary.

5.2 Available models

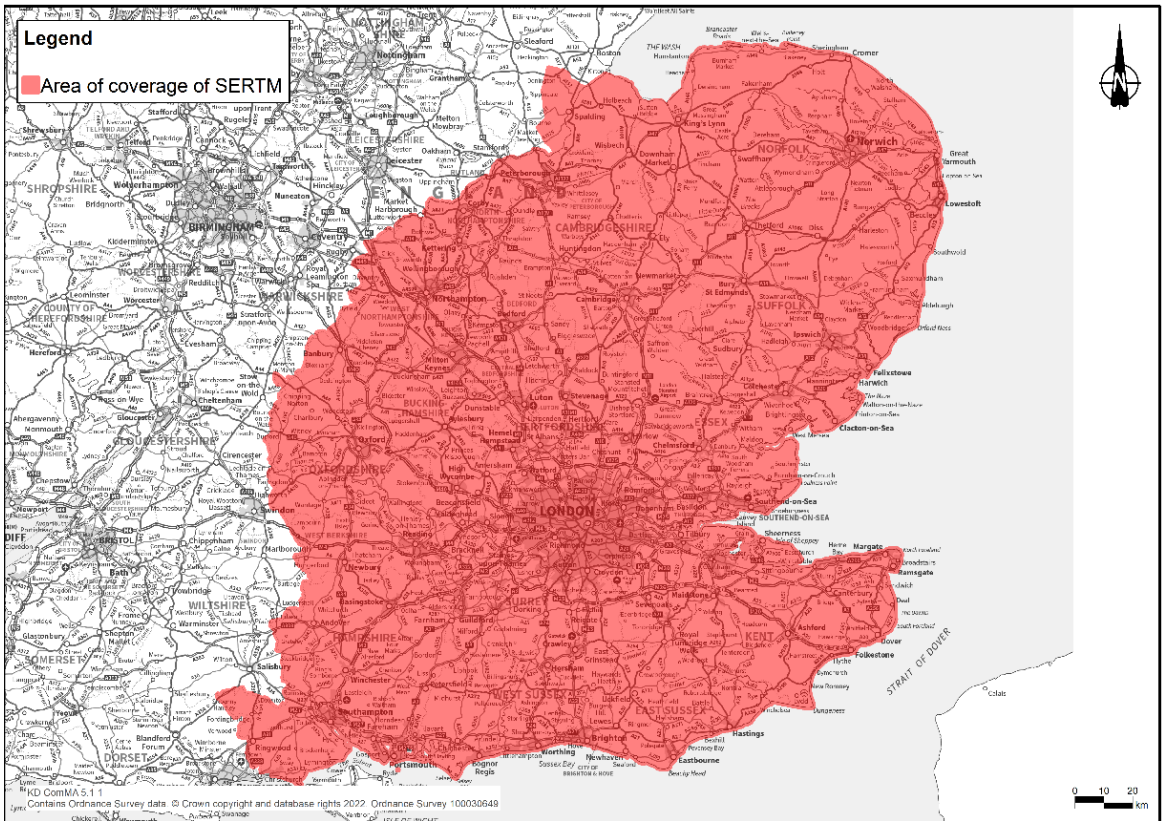
South East Regional Traffic Model (SERTM)

5.2.1 As described under Section 4, the SERTM demand matrices were used as the primary source of trip data for developing the LTAM demand matrices. The following text provides some more generic information relating to the SERTM.

5.2.2 In order for National Highways to progress the schemes identified in the Road Investment Strategy (RIS) within the first road period (2015-2020) (Highways England, 2014), a significant amount of modelling and appraisal work was required. A strategy developed for National Highways by the Transport Planning Group (TPG) identified the creation of five 'Regional' models as one of the components with the greatest potential to increase the speed of future delivery of schemes.

5.2.3 The area of coverage of SERTM is shown in Plate 5.1. As can be seen this fully covers the LTAM fully modelled area (as defined under Section 4).

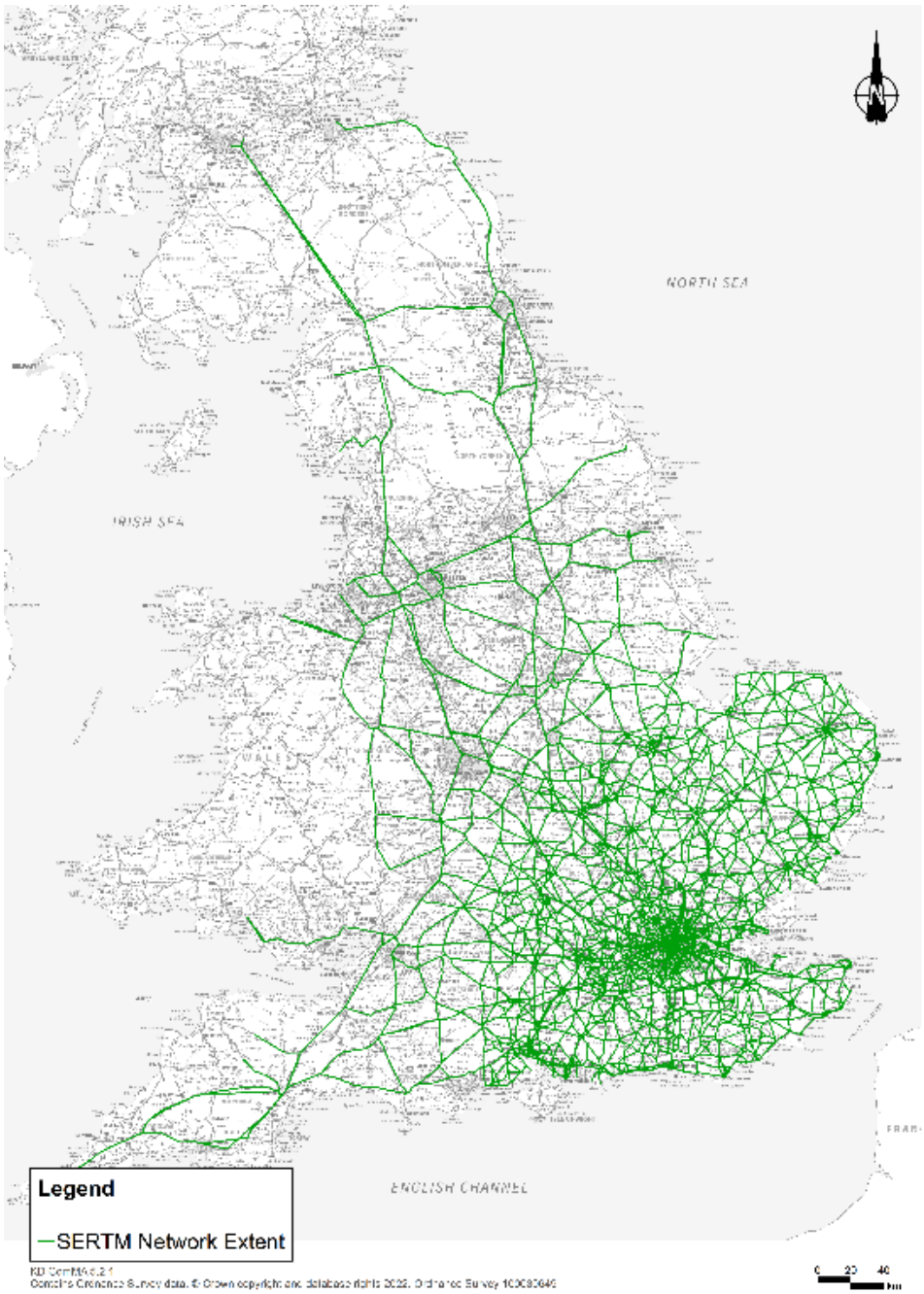
Plate 5.1 Area of Coverage of SERTM



5.2.4 The SERTM model has 2,306 zones.

5.2.5 The model network extent is shown in Plate 5.2. The model links in the simulation area are shown in red. Most of the network within M25 is coded as fixed speed network. A network coding manual was developed for the RTMs which was used for coding the LTAM network.

Plate 5.2 SERTM Network Extent



5.2.6 The SERTM demand model includes the following choice processes:

a. trip frequency: the adjustment of total trip-making

b. mode choice: a choice between modes of highway and rail

c. time period choice: a choice between travel in four model periods, to be determined

d. destination choice (trip distribution): a choice of where to travel to.

5.2.7 The strengths and weaknesses of the model can be summarised as set out in Table 5.1.

Table 5.1 SERTM Strengths and Weaknesses

Strengths	Weaknesses
Demand matrices developed from mobile phone data collected in March 2015	Model calibration has been assessed across the entire SERTM model area with limited focus around the key Lower Thames Crossing corridors
Zoning consistent with MSOA boundaries	Temporal dimensions are based on average peak hour periods rather than peak hours
SRN networks developed using consistent network coding manual approach	-
Demand model approach consistent with current guidance	-

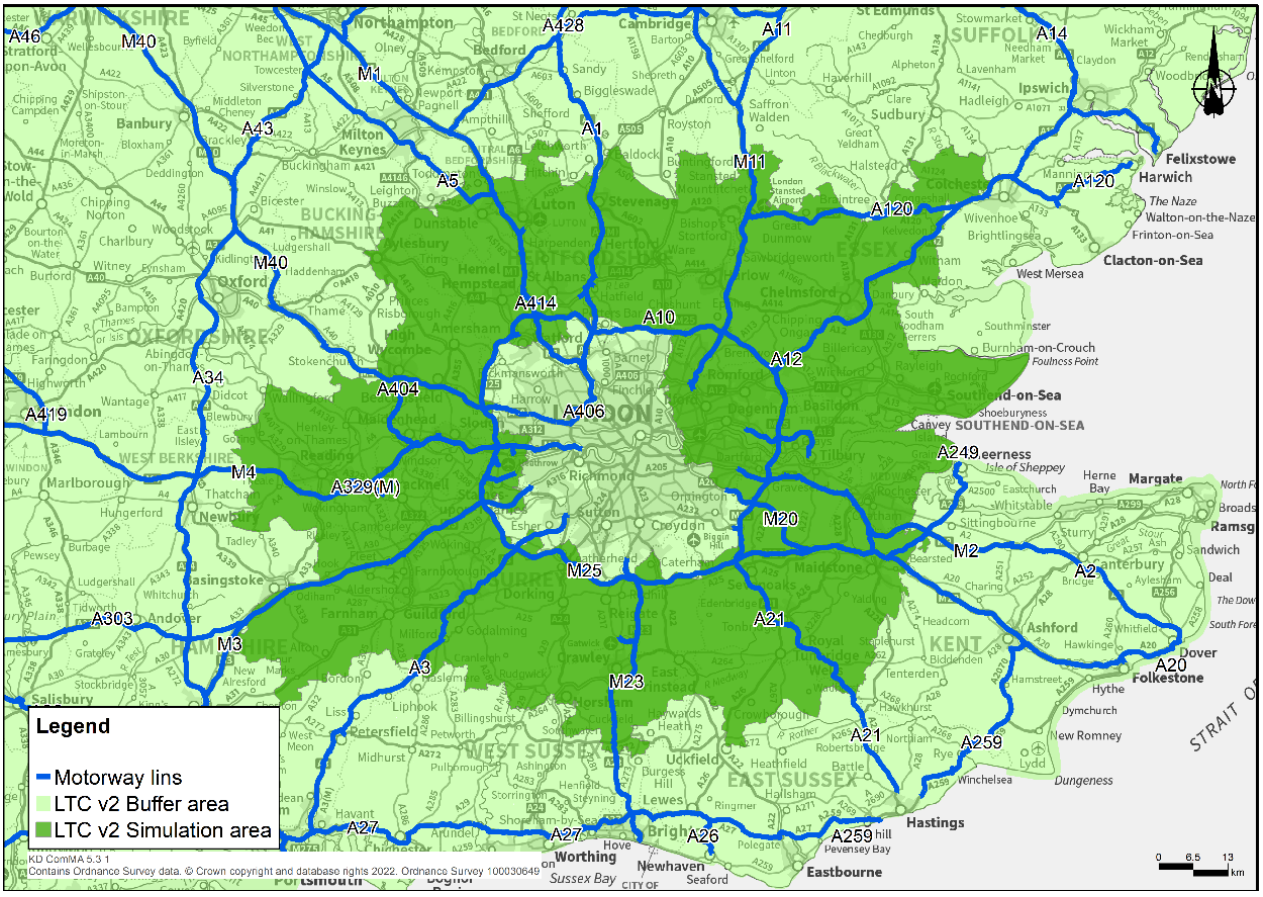
LTC V2 Model

5.2.8 The LTC V2 model has been used to support the appraisal of the Lower Thames Crossing during the Options Phase. However, the original source demand data used in developing this model dates back to around 2001. Travel patterns will have changed significantly since this time and so the LTC V2 model demand data is unsuitable for use in developing a new model such as the LTAM.

5.2.9 The network data in the LTC V2 model was however more recently updated and was therefore considered to be the primary source of network data outside of the M25 for use in developing the LTAM networks.

5.2.10 The LTC V2 model simulation area coverage is shown in Plate 5.3.

Plate 5.3 LTC V2 Network Extent



5.2.11 The LTC V2 network has 79,939 assignment nodes and 146,938 assignment links. The LTC V2 model has 1,207 zones.

5.2.12 The three time periods modelled are:

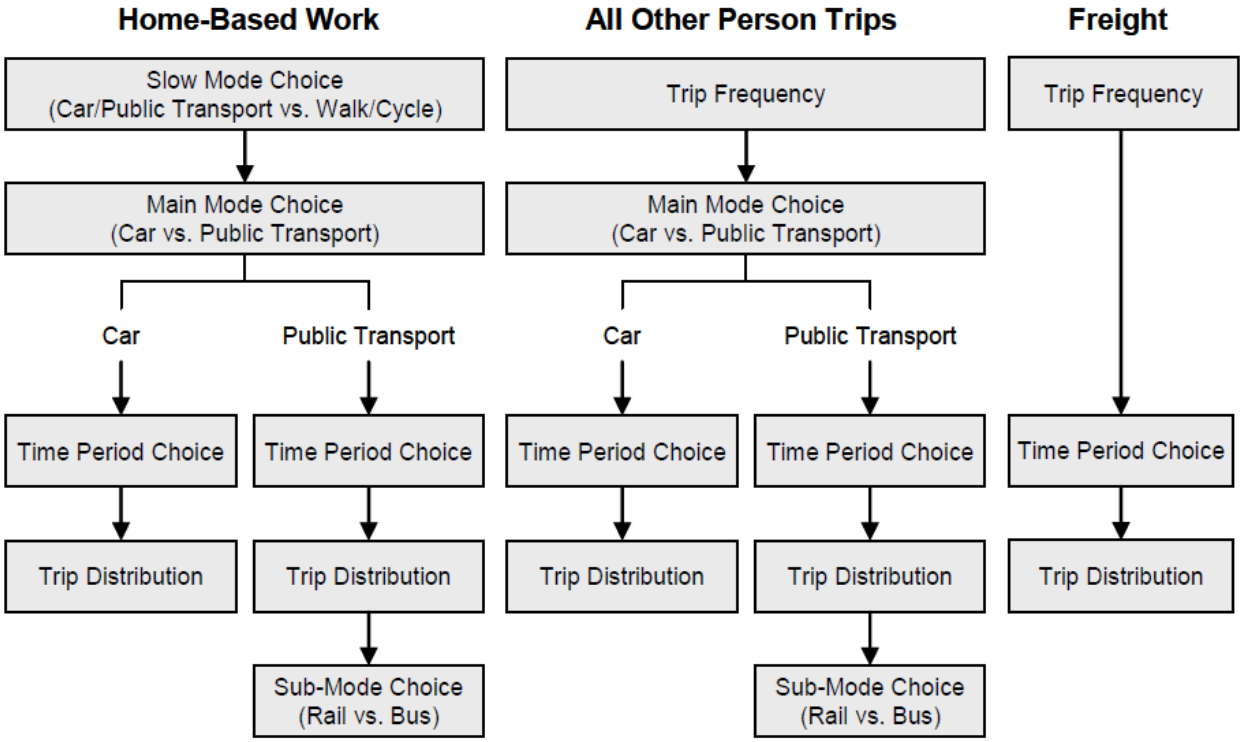
a. a morning peak hour (08:00 to 09:00)

b. an average inter-peak hour between 10:00 and 16:00

c. an evening peak hour (17:00 to 18:00).

5.2.13 Plate 5.4 shows the LTC V2 model variable demand model structure.

Plate 5.4 LTC V2 Variable Demand Model Structure



5.2.14 The strengths and weaknesses of the model can be summarised as set out in Table 5.2.

Table 5.2 LTC V2 Strengths and Weaknesses

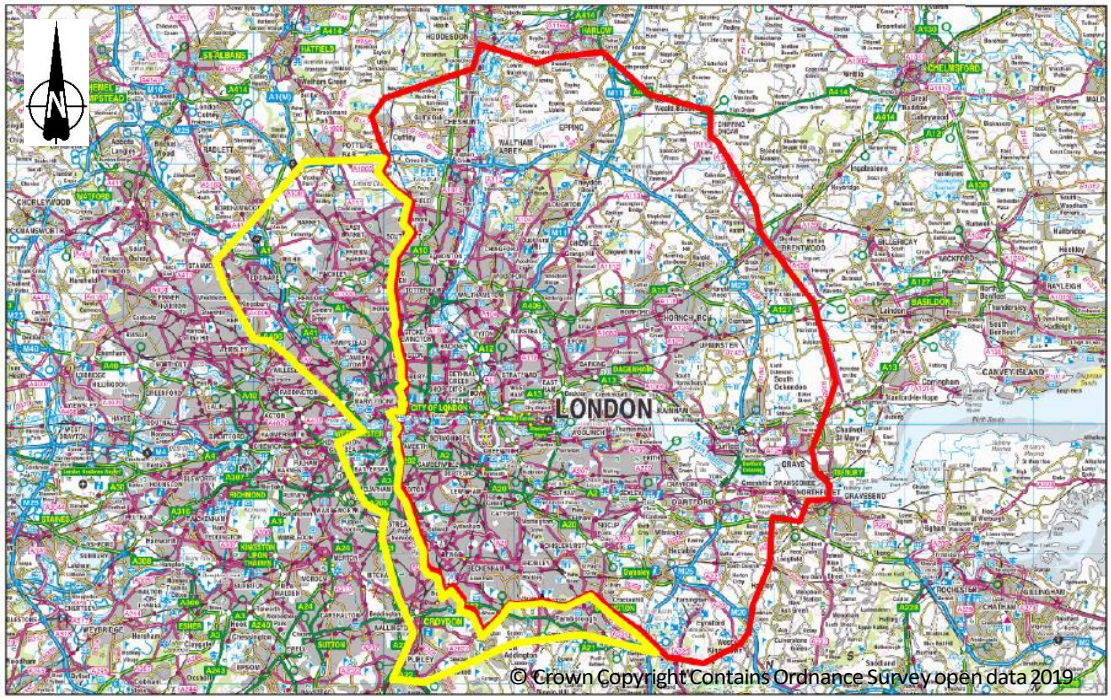
Strengths	Weaknesses
Network coding around the key Lower Thames Crossing corridors has recently been checked	Data upon which demand matrices have been developed is unlikely to be representative of current conditions
Demand model approach consistent with current guidance	-

RXHAM

5.2.15 The River Crossing Highway Assignment Model (RXHAM) is a model owned by Transport for London which has been used to support the appraisal of the proposed Silvertown new Thames River crossing. This model is considered to have the best representation of highway network inside the M25 and was therefore used as the primary network data source for that area.

5.2.16 Plate 5.5 shows the model simulation area within the red line; which extends to and includes the M25 on the eastern side and across to Southwark Bridge in the west. Within the yellow line the network is coded as buffer with speed/flow curves. Outside of these areas is coded as buffer with fixed speeds, taken initially from the LTS model. The simulation area is large enough to cover the major roads where traffic flows could be significantly affected by the proposed river crossings.

Plate 5.5 RXHAM Network Coverage. (Source: TfL – RXHAM Base Year Development and Validation Report, October 2014)



5.2.17 The base year model is developed to represent an average weekday in November 2012. The model has 2,448 zones covering the whole of the UK and represents the following time periods:

a. AM peak hour (08:00-09:00)

b. PM peak hour (17:00-18:00)

c. Inter-Peak hour (an average hour between 10:00-16:00).

5.2.18 There are five user classes within the base year model as follows:

a. car out of work time (represented with a PCU factor 1)

b. car in work time (represented with a PCU factor 1)

c. taxi (hackney carriage) (represented with a PCU factor 1)

d. light goods vehicle (represented with a PCU factor 1)

e. other goods vehicle (represented with a PCU factor 2).

5.2.19 The strengths and weaknesses of the model can be summarised as set out in Table 5.3.

Table 5.3 Strengths and Weaknesses of the RXHAM model

Strengths	Weaknesses
Very detailed network coverage inside M25	Poor network coverage outside M25

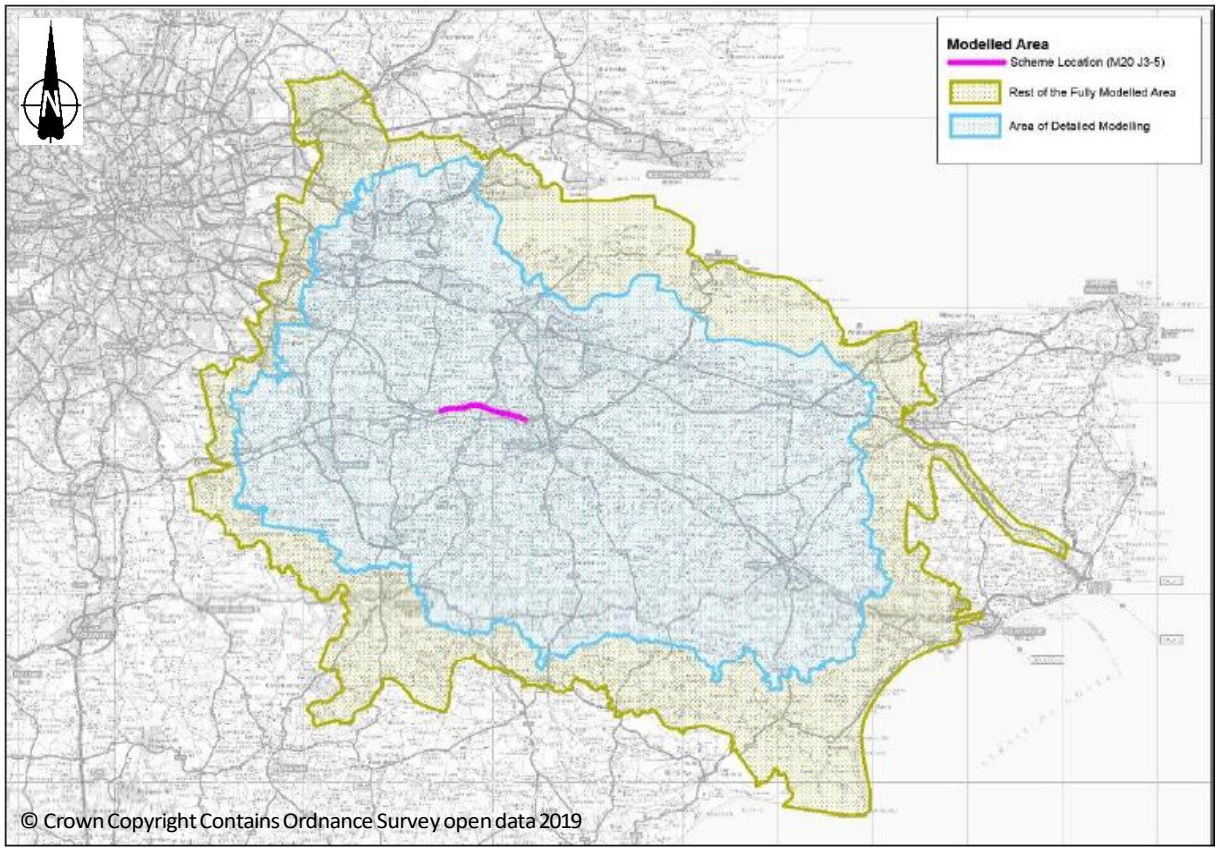
M20 SMP

5.2.20 The M20 junctions 3-5 Smart Motorways Programme model has been developed to support the scheme appraisal of a Smart Motorways intervention on the M20 motorway running from the M20 junction with the M26 to the western edge of Maidstone.

5.2.21 In developing this model an extensive review of highway infrastructure in most of Kent was undertaken including in particular along the A2/M2 and A20/M20 corridors. It was therefore decided that this model would be the primary source of network data for these corridors, except where the LTC V2 model was considered to be more appropriate.

5.2.22 Following an assessment of the likely scale of impact of the proposed scheme, the geographical scope of the model was defined. This is as shown in Plate 5.6.

Plate 5.6 M20 SMP Modelled Area



5.2.23 The primary source of data for use in developing the demand matrices for the M20 SMP model was the provisional data extracted from the National Highways Mobile Phone Trip Information System. The data underwent extensive manipulation in order to develop matrices suitable for use in the development of the model.

5.2.24 The model has 566 zones. It represents an average weekday in June 2015 and covers three independent time periods. These are*:*

a. AM Peak: 07:00 – 09:00 average hour

b. Inter-Peak: 09:00 – 15:00 average hour

c. PM Peak: 16:00 – 18:00 average hour.

5.2.25 The strengths and weaknesses of the model can be summarised as set out in Table 5.4.

Table 5.4 Strengths and Weaknesses of the M20 SMP Model

Strengths	Weaknesses
Good network coverage in Kent in particular around the A2/M2 and M20 corridors	Model calibration/validation is good around the M20 SMP scheme area only rather than around the Lower Thames Area
Demand model approach consistent with current guidance	-

5.2.26 The base year highway assignment model was developed with five user classes. These are:

a. Car Commute

b. Car Employers Business

c. Car Other

d. LGV

e. HGV.

5.3 Summary

5.3.1 There are a number of existing models which were considered to be appropriate for use in developing the LTAM. The strengths and weaknesses of the available models was assessed and, where it is considered to be appropriate, the most appropriate model was selected as the primary source of data. This is summarised in Table 5.5.

Table 5.5 Use of Selected Available Model Data

Data	Most Appropriate Model
Primary source of demand data for developing LTAM demand prior matrices.	SERTM
Primary source of network data outside the M25.	LTC V2
Primary source of network data inside the M25.	RXHAM
Supplementary model network in Kent.	M20 SMP

6 New data collection

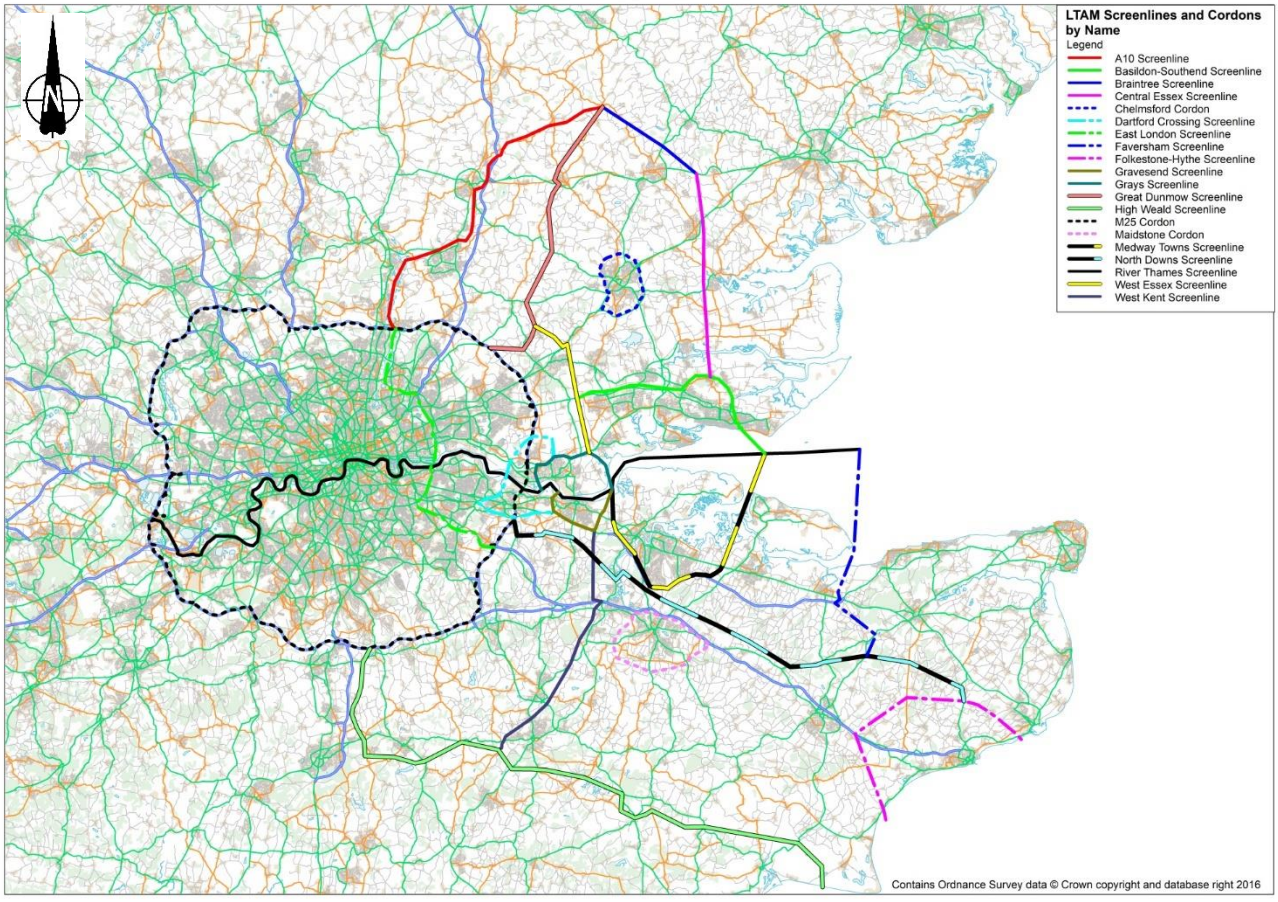
6.1 Introduction

6.1.1 In order to determine the scope of new data collection to support the LTAM, a review of what existing data was available was undertaken and an assessment made of where additional data would be required.

6.1.2 As identified in Section 4, data available from National Highways, DfT, TfL, local authorities, and from previous studies was obtained, where the data had been collected from 2014 onwards. This data was then plotted in GIS as shown in Section 4. The data was identified by source and type.

6.1.3 At a collaborative workshop with National Highways TPG, 20 screenlines and cordons were defined as shown in Plate 6.1.

Plate 6.1 LTAM Screenlines and Cordons



6.1.4 The screenlines and cordons identified were defined for the LTAM Fully Modelled Area (as defined in Section 4) and designed to enable the capture of movements in and out of key urban areas, such as Maidstone, Gravesend and Grays/Tilbury, as well as key movements, such as trips crossing the River Thames or between the M2 and M20 corridors.

6.1.5 These screenlines and cordons were derived from those developed in support of the LTC V2 model, the South East Regional Traffic Model and the M20 Smart Motorways Programme model.

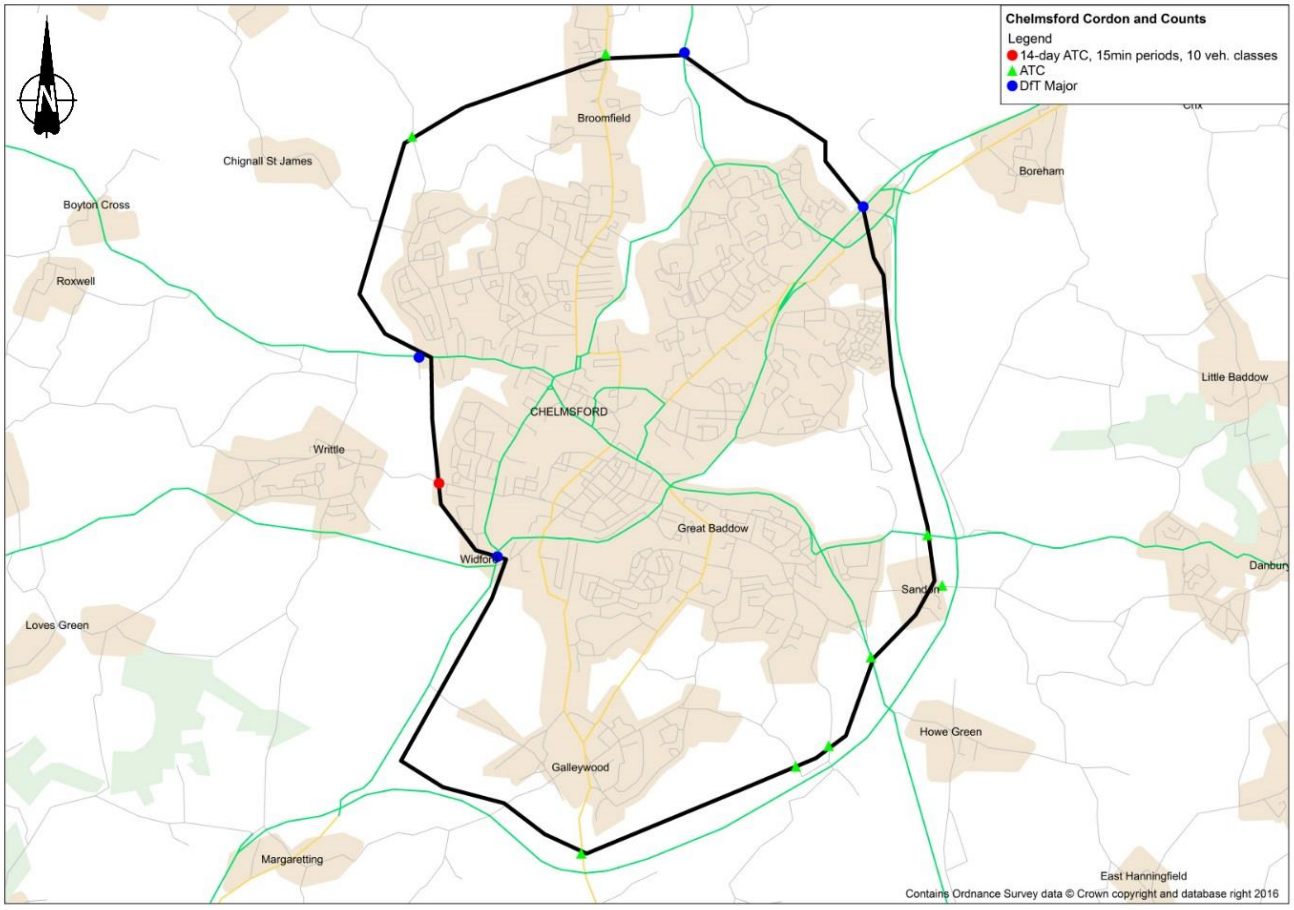
6.1.6 However, some adjustments to existing screenlines and cordons from these models were necessary, together with the introduction of additional screenlines/cordons in the location of the Lower Thames Crossing route options, so as to reflect the purpose of the LTAM.

Gap Analysis

6.1.7 Following the identification of the screenlines and cordons, analysis using GIS was undertaken to identify all links that intersected with each screenline or cordon. A comprehensive review of existing data was completed to ascertain whether traffic flow data was already available from one of the existing data sources or whether new surveys would need to be commissioned.

6.1.8 This information was plotted using GIS, an example of which is shown in Plate 6.2.

Plate 6.2 Gap Analysis Example



6.1.9 Where data was available, this was utilised and obtained from the relevant local authority, previous study or from the National Highways TRIS database. If more than one dataset was available for the location in question, data was chosen from the dataset closest to the model base month and year.

6.1.10 Where no data was shown to be available, an assessment was made as to whether minor amendments could be made to the screenline/cordon to enable it to pass through an existing data point.

6.1.11 If this was not possible, the intersection was recorded as a gap and subsequently formed part of the Lower Thames Crossing primary data collection exercise. The exact requirements of the data collection, and the locations in which data was collected are set out in Section 6.2.

6.1.12 Whilst the ATC data provides volumetric data, typically they are not reliable for vehicle classification purposes. Therefore, Classified Link Count (CLC) data is also required.

6.1.13 It was agreed at an early stage of the model development with National Highways TPG that CLC data would not be required at every intersection on each screenline/cordon.

6.1.14 However, it was important that robust CLC data was available for each road type (Motorway, A-road, B-road, C-road and other) within the different areas of interest within the fully modelled area. CLC counts were undertaken in the geographic categories as set out in Table 6.1.

Table 6.1 Geographic Categories within Area of Interest

Corridor/Region/Area of interest
A2-M2
M20
M25 east (junction 25 – 5)
M25 south (junction 5 – 15)
M25 north (junction 15 – 25)
Other
Buckinghamshire
East Sussex
Essex
Hertfordshire
Kent
Medway
Southend-on-Sea
Surrey
Thurrock
West Sussex
Greater London (East)
Greater London (South)
Greater London (North)

6.2 New data collection

Volumetric Data

6.2.1 Two primary types of volumetric data were collected in support of the LTAM.

6.2.2 The first of these was Automatic Traffic Count (ATC) data to provide link flow data over a period of at least seven days, but typically for a 14-day period (of which 10 would be weekdays). This data was collected typically by placing tubes across the carriageway, which record data based on the number of axles that pass over it. However, the data was also collected using radar units and video camera units at some locations which did not meet the safety expectations of National Highways, or the survey contractor for using tube based ATCs, as these would have required personnel to place them in the live carriageway.

6.2.3 In addition to the ATC data, CLC data was collected to provide reliable classified count data. These counts were collected by video camera for a 14-hour period on a midweek day (Tuesday, Wednesday and Thursday) during the ATC data collection period.

6.2.4 The gap analysis, as detailed in Section 6.1, identified that ATC data would need to be collected at 174 locations and CLC data at 44 locations. These are shown in Plate 6.3 and Plate 6.4 and tabulated in Annex B.

Plate 6.3 LTAM ATC Data Collection Points

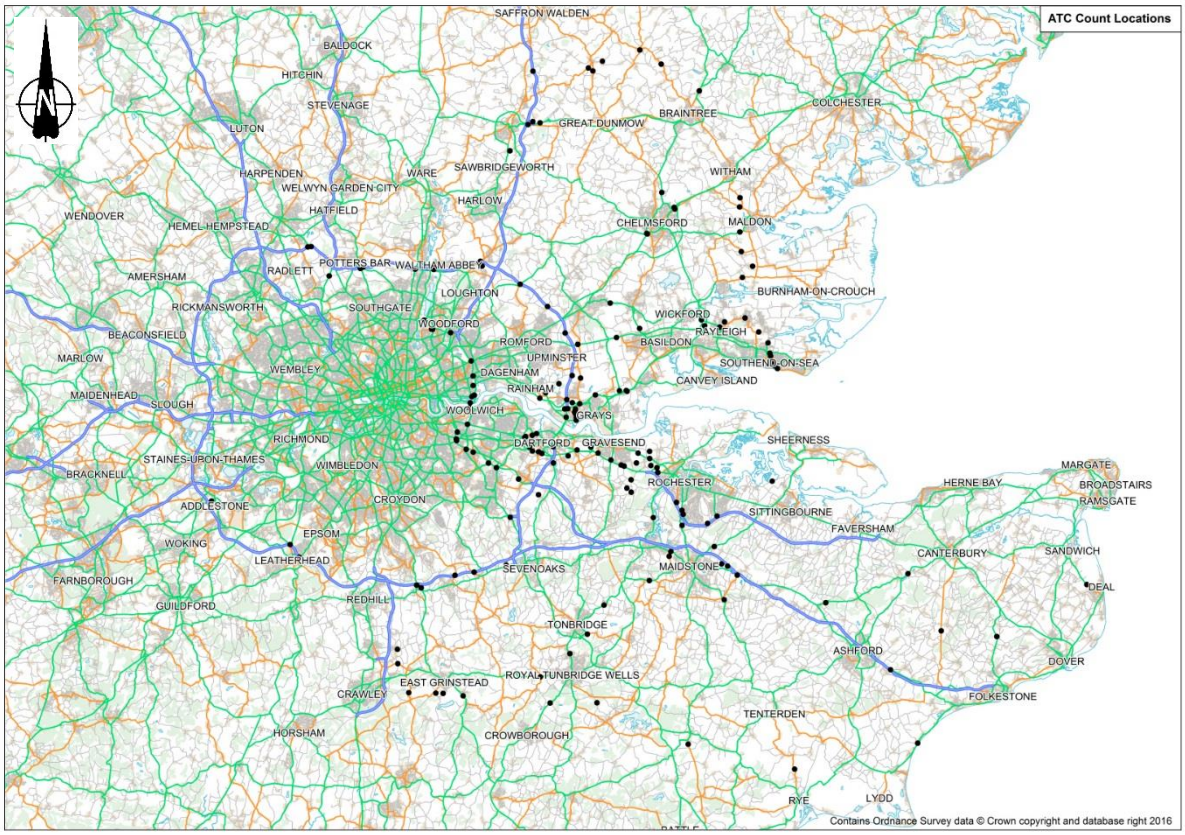
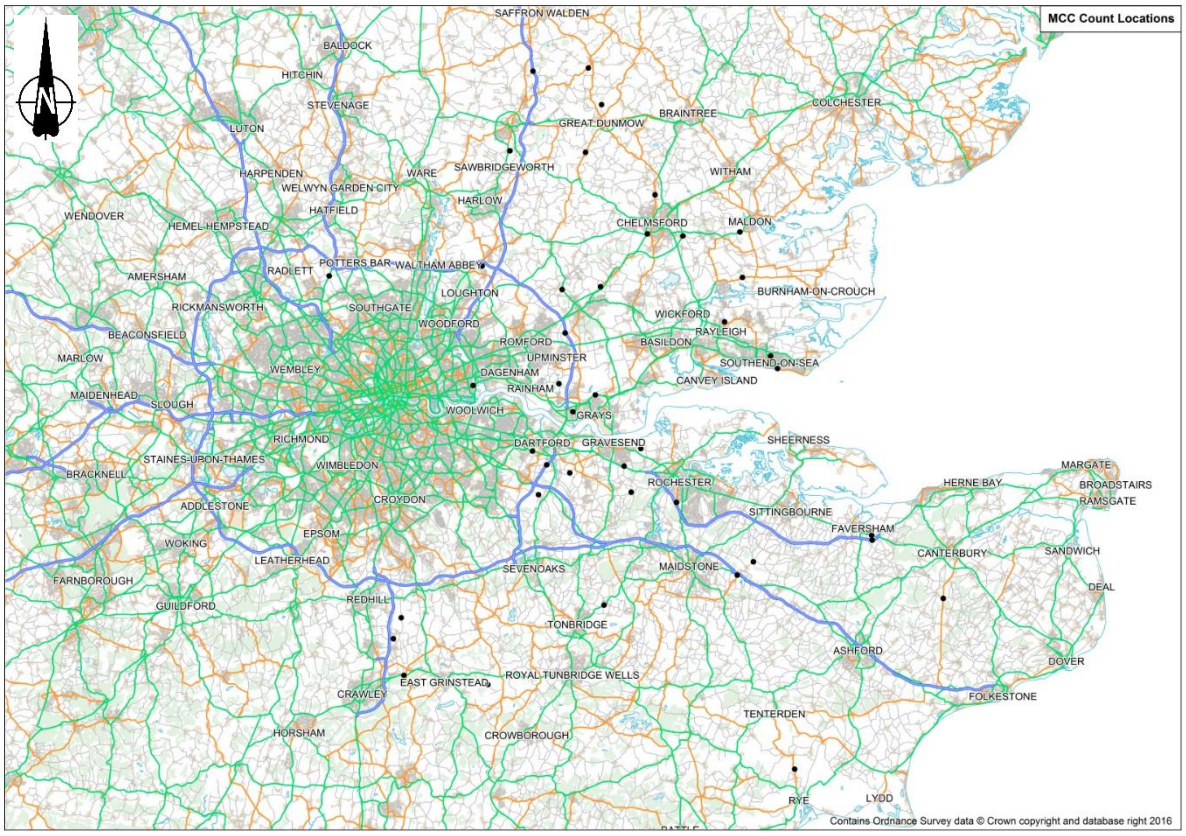


Plate 6.4 LTAM CLC Data Collection Points



6.2.5 Following a competitive tendering process, Tracsis Data Collection Limited was selected to obtain the data as shown above to an agreed specification.

6.2.6 For ATC data, it was specified that data should be collected to record:

a. vehicle counts for each 15-minute period throughout the two-week period starting and ending at hourly multiples of 15 minutes (e.g. 07:30 to 07:45)

b. vehicle counts summarised into hourly flows throughout the two -week period

c. separate counts for traffic travelling in each direction

d. ATC data classified by size of vehicle into the following categories:

i. light vehicles - cars, taxis, small vans, large vans, LGVs and taxis

ii. heavy vehicles - OGV1, OGV2, buses/coaches, other vehicles

iii. average vehicle speed for each 15-minute period by the above vehicle categories.

6.2.7 For the CLC data, it was specified that data should be classified as:

a. pedal cycle: all bicycles on road

b. motorcycles: all motorcycles, motor scooters, mopeds, motor-powered bicycles, and three-wheel motorcycles

c. cars: all passenger-carrying vehicles, including sedans, coupes, station wagons, SUVs, vans, limos, campers, motor homes, small ambulances, etc

d. taxis: taxis excluding private hire cars

e. light goods vehicle (LGV): all light goods-carrying vehicles, including those that pull light trailers: pickups, panel vans, tow trucks, etc.

f. single unit trucks (OGV 1): all rigid vehicles over 3.5 tonnes gross vehicle weight including all large vehicles on a single frame: trucks, tow trucks, campers, motor homes, large ambulances, etc

g. articulated trucks (OGV 2): all articulated vehicles including multi-unit goods-carrying vehicles with a tractor or straight truck power unit, including goods-carrying rigid trucks pulling trailers

h. buses: all passenger-carrying buses, including school buses and articulated buses

i. coaches: all passenger carrying coaches.

Survey Programme

6.2.8 The traffic surveys were undertaken in early October 2016, with the majority completed before the October school half term. However, owing to some issues with some of the data collection, some limited further collection was necessary in order to collect sufficient data. This was undertaken in early November 2016, following the October school half term.

6.2.9 Data was then received from Tracsis from late November 2016 for processing.

6.2.10 Following quality checks, a very small number of sites, primarily undertaken by radar, did not pass. It was agreed with Tracsis that these sites would be re-surveyed using seven day classified link counts to ensure robust data. This revised data has been received and incorporated into the count database.

6.2.11 It was also noted that during the data collection there were roadworks on the A13 around its junction with the M25.

Trip Data

6.2.12 Whilst the data from the National Highways Mobile Phone Trip Database provided the matrix data for the LTAM, it is especially important that the trip patterns across the existing Dartford Crossings are well represented in the LTAM.

6.2.13 Therefore, a Dartford Crossing Travel Survey Questionnaire was developed which sought detailed trip information from users who hold a Dart Charge account.

6.2.14 The survey details were agreed with National Highways TPG and had wider approval from National Highways.

6.2.15 An excerpt from the draft questionnaire is shown in Plate 6.5. The survey was conducted online via National Highways' Digital Team using SurveyMonkey.

6.2.16 The survey was issued with the Preferred Route Announcement communication to Dart Charge account holders from National Highways in early May 2017.

6.2.17 Following receipt of the data, a comparison was undertaken between the distribution patterns as derived from the survey data and that from the LTAM. This showed a good level of correlation between the two datasets and as such the distribution within the LTAM derived from the mobile phone data was considered suitable for use in the LTAM.

Plate 6.5 Dartford Crossing Travel Survey Questionnaire

Section 1:								
Dartford Crossing Account Holder	Yes ☐	No ☐	**Date of Survey DD/MM/YYYY**		**Serial Number (Automatically generated by accessing survey)**			
Section 2:								
At what date and time did you start your most recent journey that used the Dartford Crossing?	Date: _ _ _ _ _ _ Time: ☐☐:☐☐			Date of journey (DD/MM/YYYY) Time of journey (use 24hr clock, for example 14:15)				
	TRIP ORIGIN			**TRIP DESTINATION**				
Where did you start your most recent journey that used the Dartford Crossing?	Town/City			**What was the address of your next destination?**	Town/City			
	Country				Country			
	Postcode				Postcode			
What was your main reason for being at your start location?	Home ☐	Usual Workplace ☐	Collecting or delivering goods ☐	**What was the purpose or main reason for you going to your destination?**	Home ☐	Usual workplace ☐	Collecting or delivering goods ☐	
	Employers business ☐	Shopping or using services ☐			Employers business ☐	Shopping or using services☐		
	Education ☐	Holiday home ☐			Education ☐	Holiday home☐		
	Sport/ Entertainment Social ☐	Other ☐			Sport/ Entertainment Social ☐	Other ☐		
How often do you make this journey?	5 or more days a week ☐	1 - 4 days a week ☐	Once a fortnight ☐		**How many cars do you have in your household?**		0 car ☐	
	Once a month ☐	Less than once a month ☐	First time ever ☐				1 car ☐	
Was this journey part of a round trip?	Yes ☐	No ☐					2 cars ☐	
A round trip is a trip from one place to another and then back again at a later time. We want to capture the start times of both parts of the round trip (i.e. the outbound and return journeys)							3 or more cars ☐	
If yes, what was the date and time of the other part of the round trip?	Date: _ _ _ _ _ _ Time: ☐☐:☐☐			Date of journey (DD/MM/YYYY) Time of journey (use 24hr clock, for example 14:15)				
Section 3:								
Vehicle type normally used for your journey	Motorcycle or scooter ☐	Car driver ☐	Car passenger ☐	Light goods vehicle (Van) (four or six tyres) ☐	Medium goods vehicle (2 axles, over 3.5 tonnes unladen weight) ☐	Heavy goods vehicle (3 or more axles) ☐		
Section 4:								
Number of occupants in vehicle including driver	One occupant in vehicle ☐	Two occupants in vehicle ☐	Three occupants in vehicle ☐	Four occupants in vehicle ☐	Five or more occupants in vehicle ☐	**Is the vehicle registered in the UK?**	Yes ☐	No ☐
Section 5:								
Gender	Female ☐	Male ☐		Prefer not to answer ☐				

Journey Time Data

6.2.18 As agreed with National Highways TPG, no new data collection to record journey times was made as Journey Time data, as detailed in Section 4, was available from the Teletrac database.

6.2.19 It is worth noting that journey time data was collected in support of the operational modelling, this is detailed in Section 10.

Other Data

6.2.20 Additional data required to support the operational modelling was collected. This is detailed in Section 10.

6.2.21 No other data has been collected in support of the LTAM.

6.3 Summary

6.3.1 This chapter of the TDP has set out the new data collected in support of the development of the LTAM and the process that was undertaken to identify the locations at which data collection was required.

6.3.2 Overall, 174 ATC and 44 CLC sites had new data collected in support of the LTAM.

6.3.3 Detailed trip information about journeys across the existing Dartford Crossings was obtained via an online questionnaire, and comparison against data from the LTAM demonstrated that the distribution derived by the LTAM was robust.

6.3.4 Additional data was collected in support of the operational modelling. This is set out in Section 10.

7 Final volumetric dataset

7.1 Introduction

7.1.1 This chapter details the process by which the final volumetric dataset was produced, including details of the quality checking undertaken on all data used in the development of the LTAM and a presentation of some of the summary statistics that were derived from the count database.

7.2 Count locations

7.2.1 Following the gap analysis and traffic surveys, it is possible to show the full extent of locations that were used for the LTAM. These are shown in Plate 7.1 and Plate 7.2.

7.2.2 The precise dataset that was used to calibrate and validate the LTAM was determined during the model calibration process and is reported in the LTAM Transport Model Package (Appendix B of the Combined Modelling and Appraisal Report (Application Document 7.7).

Plate 7.1 ATC Locations Used in Final Volumetric Dataset

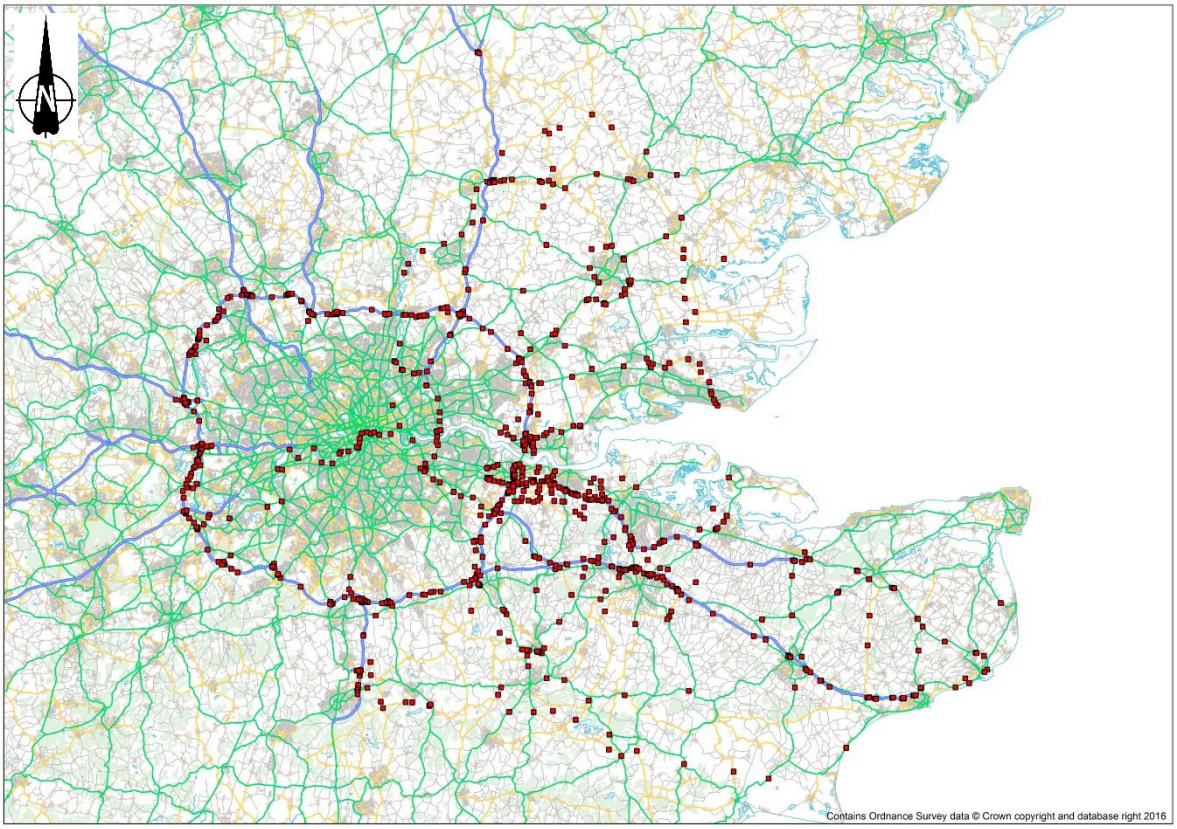
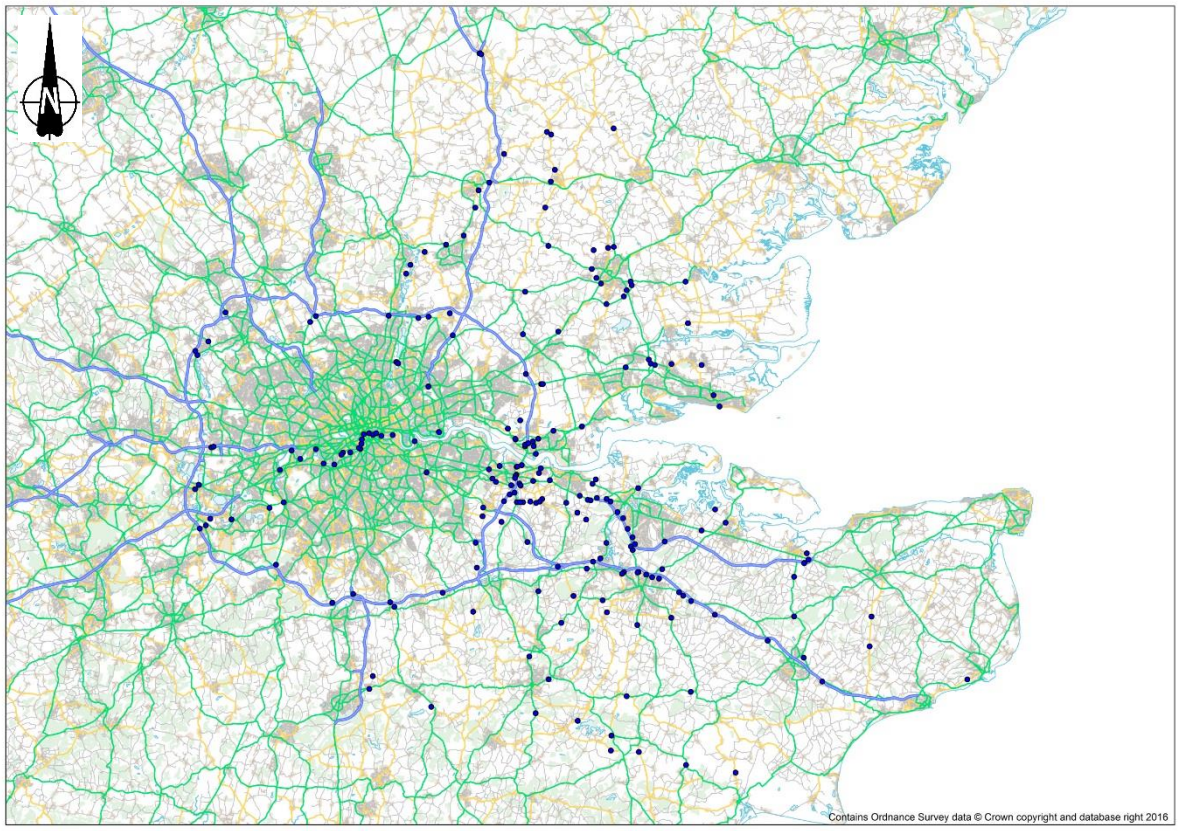


Plate 7.2 CLC Locations Used in Final Volumetric Dataset



7.3 Data processing methodology

Data Quality Check

7.3.1 To ensure that the traffic count data used to support the LTAM was of appropriate quality, a check of each individual count site was undertaken. The following checked elements were included:

a. Year of data collection: Generally, only data collected in 2014 or later was selected. At a very small number of sites, data from 2013 was used

b. Number of counted days by an ATC site: Count sites with at least five weekdays counted (and were considered being of sufficient quality) were selected and all others excluded

c. Comparison of the ATC flow profile and hourly values against those collected by CLC (where available): This enabled the ability to exclude any surveys where the count equipment could have been damaged

d. Variability of ATCs' observed traffic flow: This was used to identify whether the ATC data suffered from substantial volatility. This could be caused by damaged measurement equipment, or road incidents/works. To calculate this, 95% confidence intervals were calculated around mean daily traffic flow and compared against 5%, 10% and 15% of that mean value as in the formula:

$$\bar{x} + t_{\alpha} \cdot \frac{s}{\sqrt{n}} \leq p \cdot \bar{x}$$

i. $\bar{x}$ – mean daily traffic flow,

ii. t_{α} – t statistic value,

iii. s – standard deviation of daily flow values,

iv. n – number of counted days,

v. p –daily traffic flow percentage (5%, 10%, 15%) against which the confidence interval criteria is checked.

e. TAG in unit M1.2 (paragraphs 3.3.32 – 3.3.40) (DfT, 2020b) suggests that usually a 5% criterion be used, however this resulted in a significant number of count sites being excluded. It was therefore decided to relax this condition by examining 10% and 15% values around the mean.

f. The number and percentages of ATC count sites by each source which passed the confidence interval criteria is presented in Table 7.1 and is represented graphically in Plate 7.3.

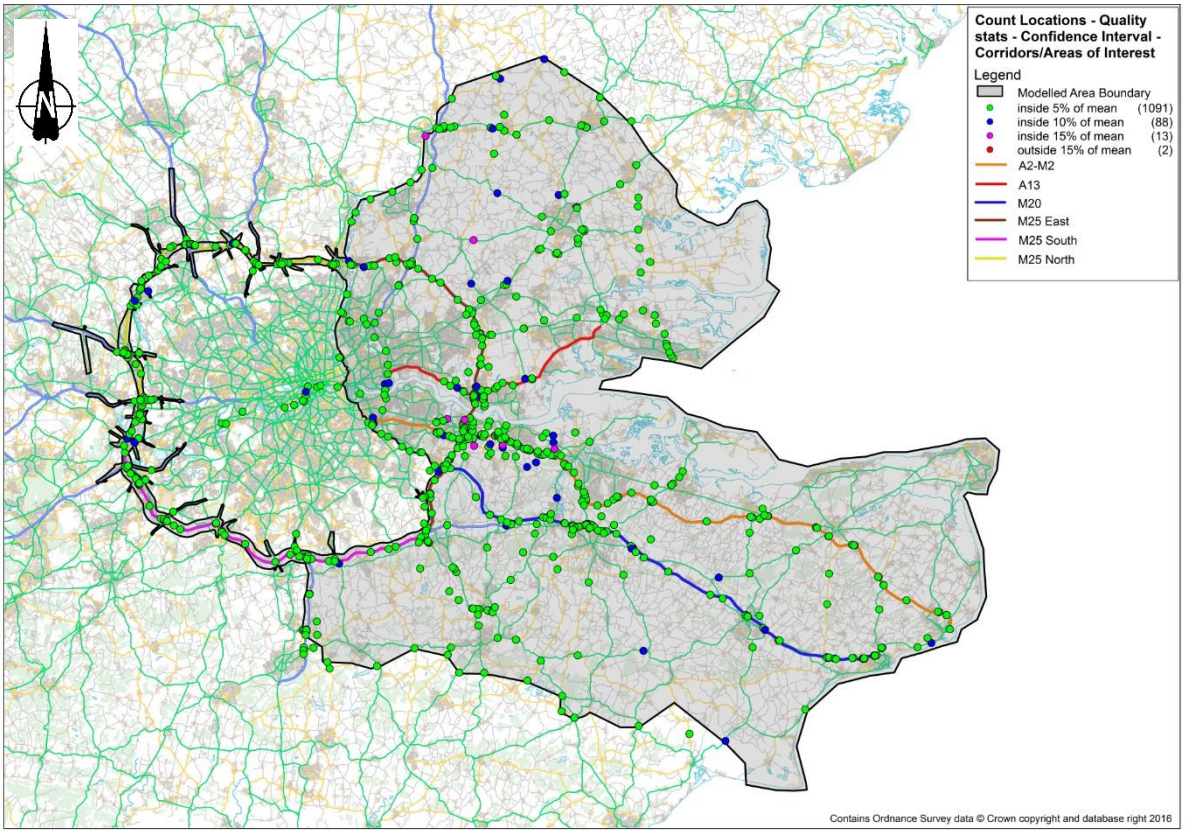
Table 7.1 Confidence Interval Results

Source	No. of sites	No. of sites within 5% of mean	%	No. of sites within 10% of mean	%	No. of sites within 15% of mean	%	No. of sites outside 15% of mean	%
TRIS	583	569	98%	583	100%	583	100%	0	0%
Tracsis	301	262	87%	297	99%	301	100%	0	0%
TfL	43	37	86%	42	98%	43	100%	0	0%
SMP	119	110	92%	115	97%	118	99%	1	1%
A2 Bean	60	51	85%	58	97%	60	100%	0	0%
Kent CC	12	9	75%	12	100%	12	100%	0	0%
Herts CC	10	4	40%	9	90%	10	100%	0	0%
Essex CC	50	33	66%	47	94%	49	98%	1	2%
East Sussex CC	12	12	100%	12	100%	12	100%	0	0%
West Sussex CC	4	4	100%	4	100%	4	100%	0	0%
Total	**1,194**	**1,091**	**91%**	**1,179**	**99%**	**1,192**	**100%**	**2**	**0%**

7.3.2 At count sites where there was a violation of the confidence interval criteria against 15% of mean, these sites were marked as volatile and excluded from the database (with the exception of two sites which were considered important in relation to two screenlines where no alternative count site was available to use as a replacement).

7.3.3 As can be seen, generally the count data was of high quality. When a site showed very high variability an alternative source was used. If this was not available, then the count data was included in the count database with additional comments appended, which enabled the model development team to take the variability of the count into consideration when calibrating the model.

Plate 7.3 Confidence Interval Results



Factoring

7.3.4 To enable the use of traffic count data surveyed in a period other than March 2016 (the base model year and month), appropriate adjustments were made to allow for traffic flow variations across different years and months.

7.3.5 The following two sets of factors were calculated by which a count was multiplied:

a. Annual factors, which consider traffic flow changes across the years; and

b. Seasonal factors, which consider traffic flow variability in different months.

7.3.6 Each set of factors was disaggregated into major corridors in the modelled area:

a. A2-M2 corridor;

b. A13 corridor;

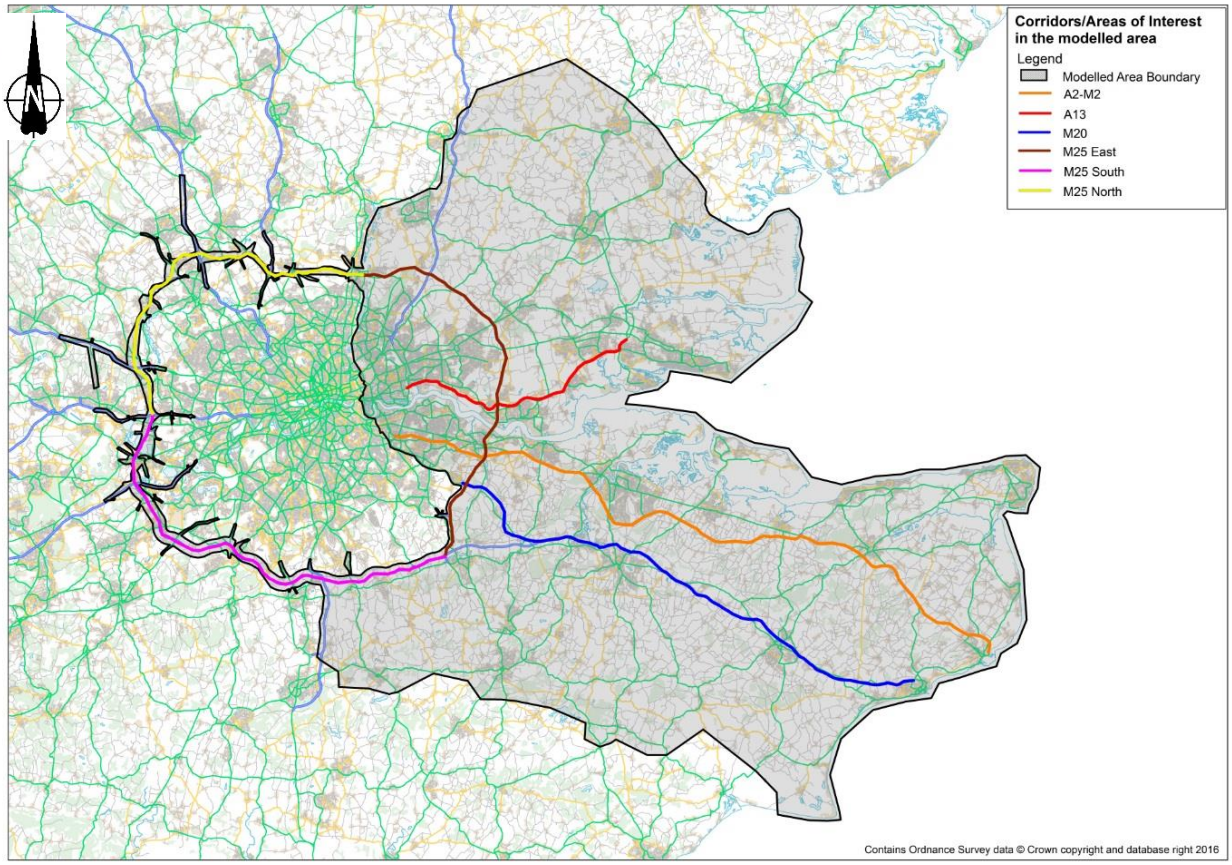
c. M20 corridor;

d. M25 corridor (divided into eastern, southern and northern sections); and

e. All other corridors.

7.3.7 These corridors are geographically represented in Plate 7.4.

Plate 7.4 Corridors/Areas of Interest



7.3.8 In order to calculate these factors, the TRIS count database (Highways England, 2020) was used as it provides a constant measurement of traffic flows on the strategic road network. Only TRIS data collected on mainline carriageways was used in this calculation. Data for the years 2014 – 2016 was downloaded and then processed, by calculating the Average Weekday Traffic for each month and then averaged for a yearly value for each count site.

7.3.9 In the next stage, it was possible to determine a representative set of count locations for calculating each type of factor as follows:

a. Annual factors – counts with a full year of data through 2014, 2015 and 2016; and

b. Seasonal factors – counts with a full year and good quality of data in 2016. "Good quality" was determined by the ratio of 15-minute intervals with a Quality Index (as provided by the TRIS database) of "15" to the total number of 15 minute intervals for each month and each count site. If the ratio was above 90% then that particular count was selected for the seasonal factor calculation.

7.3.10 In the final stage of the calculation of the annual factors, an average AAWT value for 2016 was taken and then divided by an average AAWT value for a particular year, resulting in the percentage difference between the traffic flow and the surveyed year. These annual factors are shown in Table 7.2.

Table 7.2 Annual Factors

Year/Corridor	A2-M2	A13	M20	M25 east	M25 south	M25 north	M25	Other
2013	1.10	1.09	1.06	1.11	1.03	1.12	1.08	1.09
2014	1.06	1.06	1.03	1.10	1.02	1.08	1.06	1.06
2015	0.99	1.01	1.03	1.00	1.01	1.01	1.01	1.01
2016	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

7.3.11 In the final stage of the seasonal factor calculation, an average March Average Weekly Total (AWT) value for a given corridor was divided by an average AWT value for each month resulting in the percentage difference between the traffic flow and the surveyed flow. These factors are presented in Table 7.3. Where values are over 1.00 this shows that the traffic flow in that month are lower than the surveyed March flow and where values are below 1.00 this shows that the traffic flow in that month are higher than the surveyed March flow.

Table 7.3 Seasonal Factor Values by Corridor

Month/Corridor	A2-M2	A13	M20	M25 east	M25 south	M25 north	M25	Other
January	1.05	1.00	1.10	1.07	1.08	1.06	1.07	1.07
February	1.00	1.01	1.01	1.01	1.01	0.99	1.00	1.00
March	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
April	0.96	0.98	0.97	0.96	0.97	0.96	0.96	0.96
May	0.99	1.02	0.97	0.99	0.98	0.96	0.98	0.97
June	0.96	0.97	0.93	0.94	0.95	0.95	0.95	0.95
July	0.93	0.93	0.90	0.93	0.94	0.92	0.93	0.93
August	0.94	0.96	0.93	0.94	0.95	0.94	0.94	0.94
September	0.95	0.92	0.95	0.95	0.95	0.94	0.95	0.95
October	0.95	0.89	0.96	0.96	0.96	0.95	0.96	0.95
November	0.96	0.89	0.98	0.99	1.00	0.98	0.99	0.98
December	1.01	0.95	1.05	1.01	1.05	1.04	1.04	1.03

7.4 Count database summary statistics

Flows by Cordon/Screenline

7.4.1 Using the count database, it was possible to produce a summary of flows per LTAM peak period by screenline/cordon (shown in Plate 6.1) and by vehicle class. These are shown in Table 7.4– Table 7.6.

Table 7.4 ATC Flows by Cordon and Direction and Class: AM Peak (07:00 – 08:00)

Screenline	Direction	AM Car	AM LGV	AM HGV
Dartford Crossing Screenline	Direction 1 (Inbound)	8,047	1,957	649
	Direction 2 (Outbound)	9,221	2,167	699
Gravesend Screenline	Direction 1 (Inbound)	2,255	499	137
	Direction 2 (Outbound)	3,833	790	173
Grays Screenline	Direction 1 (Inbound)	3,877	1,012	647
	Direction 2 (Outbound)	5,766	1,697	771
Basildon-Southend Screenline	Direction 1 (Inbound)	9,076	2,114	464
	Direction 2 (Outbound)	7,580	1,848	431
River Thames Screenline	Direction 1 (Northbound)	18,898	6,401	2,312
	Direction 2 (Southbound)	16,185	4,924	2,008
West Kent Screenline	Direction 1 (Eastbound)	7,853	2,089	1,534
	Direction 2 (Westbound)	12,210	3,238	1,409
West Essex Screenline	Direction 1 (Eastbound)	5,691	1,409	623
	Direction 2 (Westbound)	7,094	1,880	790
Medway Towns Screenline	Direction 1 (Inbound)	6,570	1,484	300
	Direction 2 (Outbound)	9,504	2,223	430
North Downs Screenline	Direction 1 (Northbound)	7,270	1,619	409
	Direction 2 (Southbound)	9,033	1,964	400
East London Screenline	Direction 1 (Eastbound)	16,486	4,022	1,535
	Direction 2 (Westbound)	22,393	6,647	2,202
Great Dunmow Screenline	Direction 1 (Eastbound)	2,251	540	230
	Direction 2 (Westbound)	3,975	1,026	303
Central Essex Screenline	Direction 1 (Eastbound)	3,419	880	401
	Direction 2 (Westbound)	4,670	1,218	393
Braintree Screenline	Direction 1 (Eastbound)	1,593	421	158
	Direction 2 (Westbound)	1,346	370	151
Faversham Screenline	Direction 1 (Eastbound)	2,263	572	279
	Direction 2 (Westbound)	2,849	741	221
A10 Screenline	Direction 1 (Eastbound)	8,084	1,880	820
	Direction 2 (Westbound)	8,434	2,067	875
Folkestone-Hythe Screenline	Direction 1 (Inbound)	2,660	711	687

Screenline	Direction	AM Car	AM LGV	AM HGV
	Direction 2 (Outbound)	3,082	826	600
High Weald Screenline	Direction 1 (Northbound)	6,256	1,487	335
	Direction 2 (Southbound)	4,828	1,174	349
M25 Cordon	Direction 1 (Inbound)	61,146	16,091	5,640
	Direction 2 (Outbound)	51,936	12,357	4,817
Maidstone Cordon	Direction 1 (Inbound)	8,805	1,977	307
	Direction 2 (Outbound)	9,071	1,994	284
Chelmsford Cordon	Direction 1 (Inbound)	6,683	1,322	394
	Direction 2 (Outbound)	6,267	1,321	397

Table 7.5 ATC Flows by Cordon and Direction and Class: Inter-Peak (09:00 – 15:00 (average)

Screenline	Direction	IP Car	IP LGV	IP HGV
Dartford Crossing Screenline	Direction 1 (Inbound)	7,928	1,749	993
	Direction 2 (Outbound)	7,109	1,551	766
Gravesend Screenline	Direction 1 (Inbound)	2,534	484	193
	Direction 2 (Outbound)	2,711	510	200
Grays Screenline	Direction 1 (Inbound)	4,688	1,133	1,033
	Direction 2 (Outbound)	5,190	1,184	1,084
Basildon-Southend Screenline	Direction 1 (Inbound)	7,444	1,681	629
	Direction 2 (Outbound)	7,408	1,683	646
River Thames Screenline	Direction 1 (Northbound)	15,499	4,339	2,274
	Direction 2 (Southbound)	15,134	4,661	2,407
West Kent Screenline	Direction 1 (Eastbound)	6,862	1,584	1,710
	Direction 2 (Westbound)	7,223	1,652	1,510
West Essex Screenline	Direction 1 (Eastbound)	4,765	1,181	782
	Direction 2 (Westbound)	4,784	1,128	743
Medway Towns Screenline	Direction 1 (Inbound)	5,556	1,267	376
	Direction 2 (Outbound)	5,657	1,203	371
North Downs Screenline	Direction 1 (Northbound)	5,470	1,200	564
	Direction 2 (Southbound)	5,360	1,091	435
East London Screenline	Direction 1 (Eastbound)	16,719	4,632	2,503
	Direction 2 (Westbound)	17,934	4,544	2,401
Great Dunmow Screenline	Direction 1 (Eastbound)	1,996	434	258
	Direction 2 (Westbound)	2,063	455	262
Central Essex Screenline	Direction 1 (Eastbound)	2,891	659	480
	Direction 2 (Westbound)	2,744	622	345
Braintree Screenline	Direction 1 (Eastbound)	1,029	253	149

Screenline	Direction	IP Car	IP LGV	IP HGV
	Direction 2 (Westbound)	991	242	139
Faversham Screenline	Direction 1 (Eastbound)	1,695	380	261
	Direction 2 (Westbound)	1,597	365	280
A10 Screenline	Direction 1 (Eastbound)	6,520	1,459	992
	Direction 2 (Westbound)	6,499	1,457	964
Folkestone-Hythe Screenline	Direction 1 (Inbound)	2,173	494	719
	Direction 2 (Outbound)	2,203	497	655
High Weald Screenline	Direction 1 (Northbound)	4,313	875	373
	Direction 2 (Southbound)	4,155	839	343
M25 Cordon	Direction 1 (Inbound)	39,461	9,095	5,318
	Direction 2 (Outbound)	39,964	9,680	6,087
Maidstone Cordon	Direction 1 (Inbound)	6,925	1,529	327
	Direction 2 (Outbound)	6,728	1,440	319
Chelmsford Cordon	Direction 1 (Inbound)	4,792	946	464
	Direction 2 (Outbound)	4,695	983	480

Table 7.6 ATC Flows by Cordon and Direction and Class: PM Peak (17:00 – 18:00)

Screenline	Direction	PM Car	PM LGV	PM HGV
Dartford Crossing Screenline	Direction 1 (Inbound)	12,672	1,915	500
	Direction 2 (Outbound)	10,585	1,450	312
Gravesend Screenline	Direction 1 (Inbound)	4,400	644	109
	Direction 2 (Outbound)	3,822	554	102
Grays Screenline	Direction 1 (Inbound)	7,523	1,519	521
	Direction 2 (Outbound)	7,064	1,066	568
Basildon-Southend Screenline	Direction 1 (Inbound)	9,337	1,446	210
	Direction 2 (Outbound)	11,183	1,707	230
River Thames Screenline	Direction 1 (Northbound)	19,681	3,511	1,732
	Direction 2 (Southbound)	21,752	4,267	1,720
West Kent Screenline	Direction 1 (Eastbound)	14,320	2,406	1,351
	Direction 2 (Westbound)	10,092	1,651	865
West Essex Screenline	Direction 1 (Eastbound)	8,316	1,546	387
	Direction 2 (Westbound)	6,766	1,055	374
Medway Towns Screenline	Direction 1 (Inbound)	10,703	1,884	237
	Direction 2 (Outbound)	9,102	1,220	197
North Downs Screenline	Direction 1 (Northbound)	11,454	1,817	358
	Direction 2 (Southbound)	8,641	1,147	237
East London Screenline	Direction 1 (Eastbound)	23,402	4,678	951
	Direction 2 (Westbound)	23,082	3,398	874

Screenline	Direction	PM Car	PM LGV	PM HGV
Great Dunmow Screenline	Direction 1 (Eastbound)	4,413	707	141
	Direction 2 (Westbound)	2,960	444	121
Central Essex Screenline	Direction 1 (Eastbound)	5,371	901	272
	Direction 2 (Westbound)	3,860	630	180
Braintree Screenline	Direction 1 (Eastbound)	1,552	256	75
	Direction 2 (Westbound)	1,762	300	74
Faversham Screenline	Direction 1 (Eastbound)	3,466	536	200
	Direction 2 (Westbound)	2,659	395	177
A10 Screenline	Direction 1 (Eastbound)	10,501	1,517	559
	Direction 2 (Westbound)	10,085	1,511	540
Folkestone-Hythe Screenline	Direction 1 (Inbound)	3,960	685	664
	Direction 2 (Outbound)	3,473	568	498
High Weald Screenline	Direction 1 (Northbound)	6,681	813	167
	Direction 2 (Southbound)	7,599	969	180
M25 Cordon	Direction 1 (Inbound)	62,118	9,130	2,758
	Direction 2 (Outbound)	69,078	10,872	3,498
Maidstone Cordon	Direction 1 (Inbound)	10,672	1,594	189
	Direction 2 (Outbound)	11,080	1,359	165
Chelmsford Cordon	Direction 1 (Inbound)	6,914	1,004	225
	Direction 2 (Outbound)	7,881	1,021	233

Vehicle Proportion Percentages by Corridor/Area of Interest and Road Type

7.4.2 Again, using the count database, it is possible to determine the vehicle composition factors by road type and corridor/county/area of interest. This is shown in Table 7.7 for each of the LTAM time periods.

Table 7.7 Vehicle Composition Factors

Road Type	Corridor/ County / Area of interest	AM Car	AM LGV	AM HGV	IP Car	IP LGV	IP HGV	PM Car	PM LGV	PM HGV
M	A2-M2	71%	20%	8%	68%	17%	15%	80%	15%	6%
M	M20	70%	20%	10%	67%	17%	16%	77%	15%	8%
M	M25_East	65%	21%	14%	63%	17%	20%	74%	16%	11%
M	M25_South	74%	18%	8%	71%	16%	13%	80%	14%	6%
M	M25_North	70%	18%	12%	68%	16%	15%	80%	12%	7%
M	M25	71%	19%	11%	69%	17%	15%	79%	14%	8%
M	Other	72%	19%	10%	69%	17%	14%	79%	14%	7%
A	Buckinghamshire	79%	15%	6%	75%	16%	10%	87%	10%	3%
A	East Sussex	77%	19%	4%	77%	16%	7%	86%	12%	2%
A	Essex	74%	20%	6%	73%	18%	9%	83%	14%	3%
A	Hertfordshire	77%	18%	5%	75%	17%	8%	86%	12%	2%
A	Kent	74%	19%	6%	74%	17%	9%	83%	13%	4%
A	Medway	79%	17%	4%	79%	15%	5%	86%	12%	2%
A	Southend-on-sea	77%	18%	5%	76%	18%	7%	86%	13%	2%
A	Surrey	79%	17%	4%	78%	16%	6%	88%	11%	2%
A	Thurrock	71%	20%	10%	67%	18%	15%	79%	16%	5%
A	West Sussex	78%	17%	5%	76%	17%	7%	86%	12%	2%
A	Greater London (East)	71%	21%	8%	70%	19%	12%	82%	14%	4%
A	Greater London (South)	78%	18%	5%	75%	18%	7%	85%	12%	3%
A	Greater London (North)	68%	22%	10%	68%	19%	13%	78%	14%	8%
A	Greater London	72%	20%	8%	70%	18%	11%	82%	14%	4%
B	Buckinghamshire	83%	14%	3%	83%	13%	3%	91%	8%	1%
B	East Sussex	75%	21%	4%	80%	16%	4%	87%	11%	2%
B	Essex	79%	18%	3%	80%	15%	5%	86%	13%	1%
B	Hertfordshire	77%	18%	5%	77%	15%	8%	84%	13%	3%
B	Kent	80%	17%	3%	82%	14%	4%	87%	11%	2%
B	Medway	84%	14%	2%	81%	15%	5%	88%	10%	1%
B	Southend-on-sea	82%	16%	2%	83%	15%	2%	90%	10%	0%
B	Surrey	83%	14%	2%	81%	15%	4%	89%	10%	1%
B	Thurrock	75%	19%	6%	86%	10%	4%	90%	8%	2%
B	West Sussex	76%	21%	3%	76%	20%	4%	89%	10%	1%
B	Greater London (East)	79%	14%	6%	81%	13%	6%	87%	10%	3%
B	Greater London (South)	82%	16%	2%	81%	16%	3%	90%	9%	1%
B	Greater London (North)	84%	13%	3%	82%	13%	5%	90%	8%	1%
B	Greater London	82%	14%	4%	81%	14%	5%	89%	9%	2%
Minor	Buckinghamshire	86%	12%	2%	85%	13%	3%	89%	10%	1%
Minor	East Sussex	77%	21%	2%	80%	17%	3%	85%	14%	1%
Minor	Essex	81%	16%	3%	81%	15%	4%	87%	12%	1%
Minor	Hertfordshire	83%	15%	2%	82%	14%	3%	89%	10%	1%
Minor	Kent	81%	16%	2%	82%	15%	3%	87%	12%	1%
Minor	Medway	83%	14%	3%	85%	13%	3%	88%	10%	1%
Minor	Southend-on-sea	83%	15%	1%	86%	12%	1%	90%	10%	0%
Minor	Surrey	82%	15%	3%	83%	14%	3%	90%	9%	1%
Minor	Thurrock	74%	17%	9%	71%	16%	13%	81%	11%	8%
Minor	West Sussex	86%	13%	1%	87%	12%	1%	91%	9%	0%
Minor	Greater London (East)	81%	14%	4%	81%	13%	6%	88%	10%	2%
Minor	Greater London (South)	77%	13%	10%	67%	18%	14%	77%	13%	10%
Minor	Greater London (North)	84%	13%	2%	81%	15%	4%	88%	10%	2%
Minor	Greater London	81%	14%	5%	78%	15%	7%	86%	11%	4%

Dartford Crossing Transaction Data

7.4.3 Analysis has been undertaken on traffic flow data for vehicles using the Dartford Crossing. The average weekday hourly flows for each month in 2015 and 2016 in each direction in each time period was compared against the annual averages. This analysis is presented in Plate 7.5 to Plate 7.10. The time periods used in this analysis have been defined as follows:

a. AM Peak – 07:00 to 10:00;

b. Inter-Peak – 10:00 to 16:00; and

c. PM Peak – 16:00 to 19:00.

Plate 7.5 Dartford Crossing Traffic Flow Analysis – AM Peak Northbound

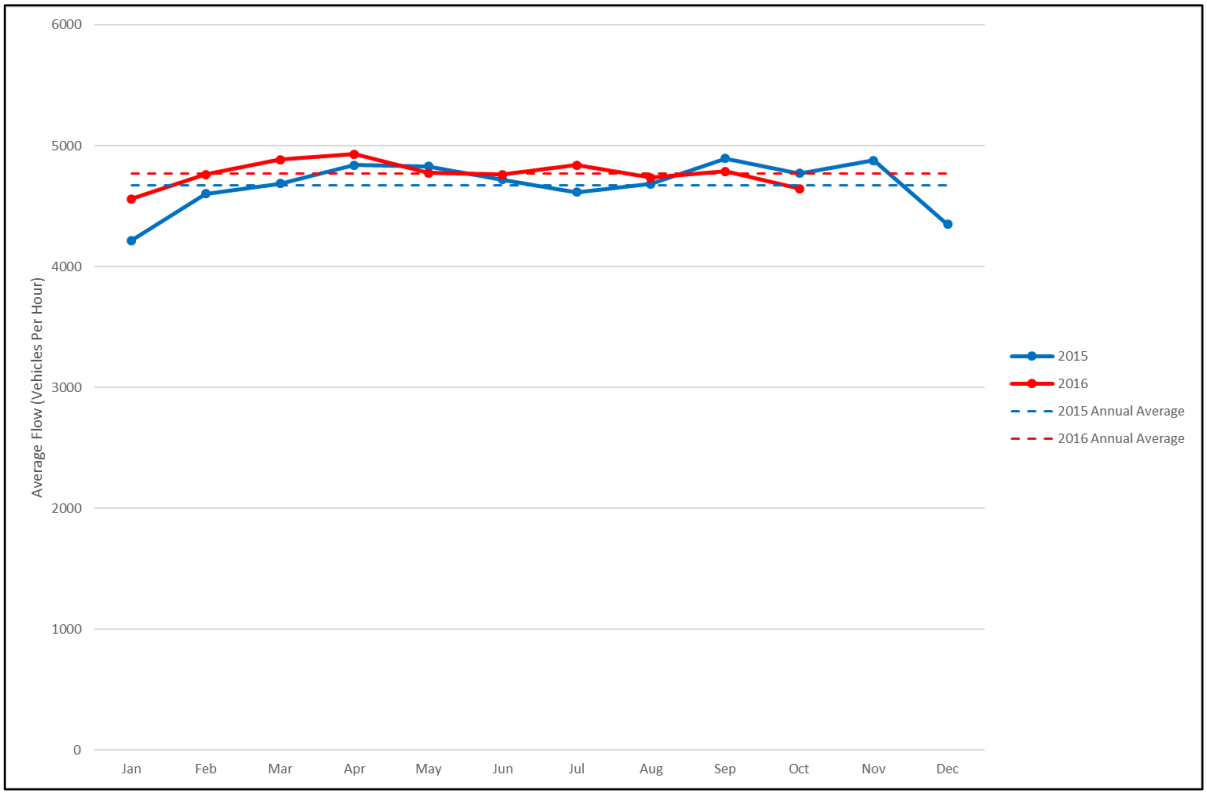


Plate 7.6 Dartford Crossing Traffic Flow Analysis – AM Peak Southbound

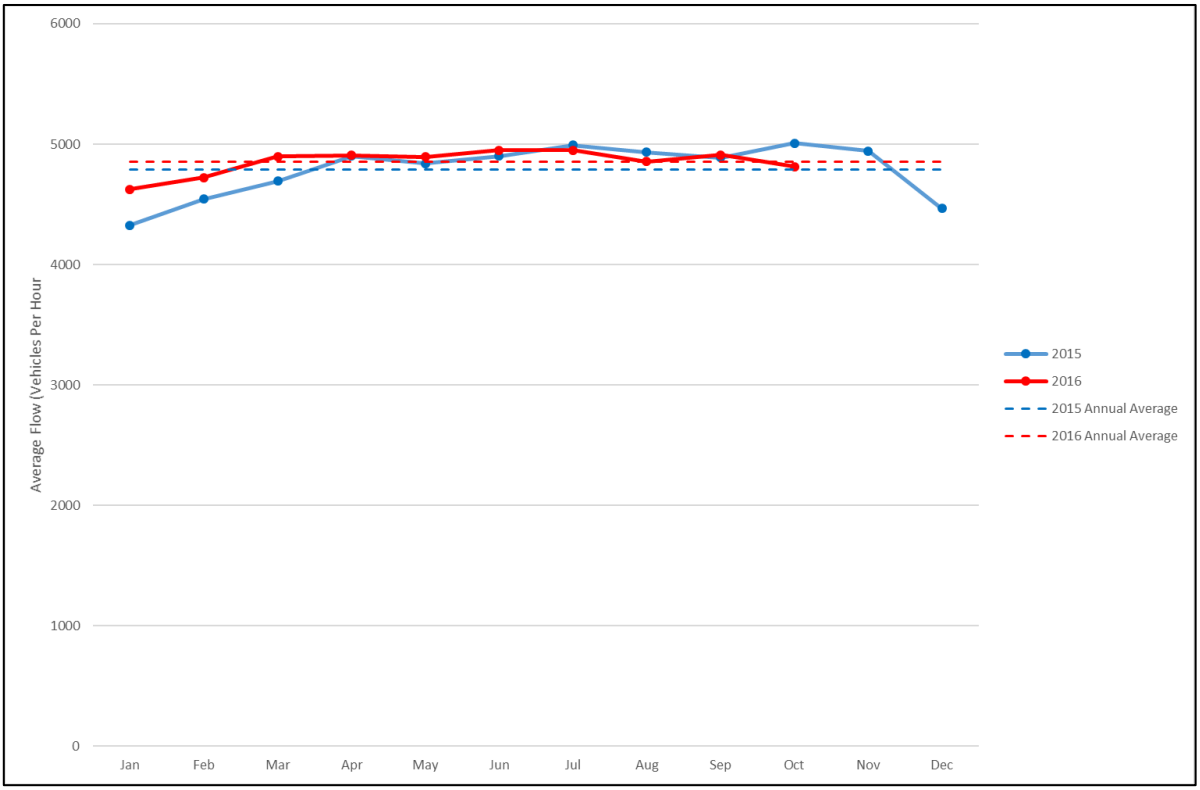


Plate 7.7 Dartford Crossing Traffic Flow Analysis – Inter-Peak Northbound

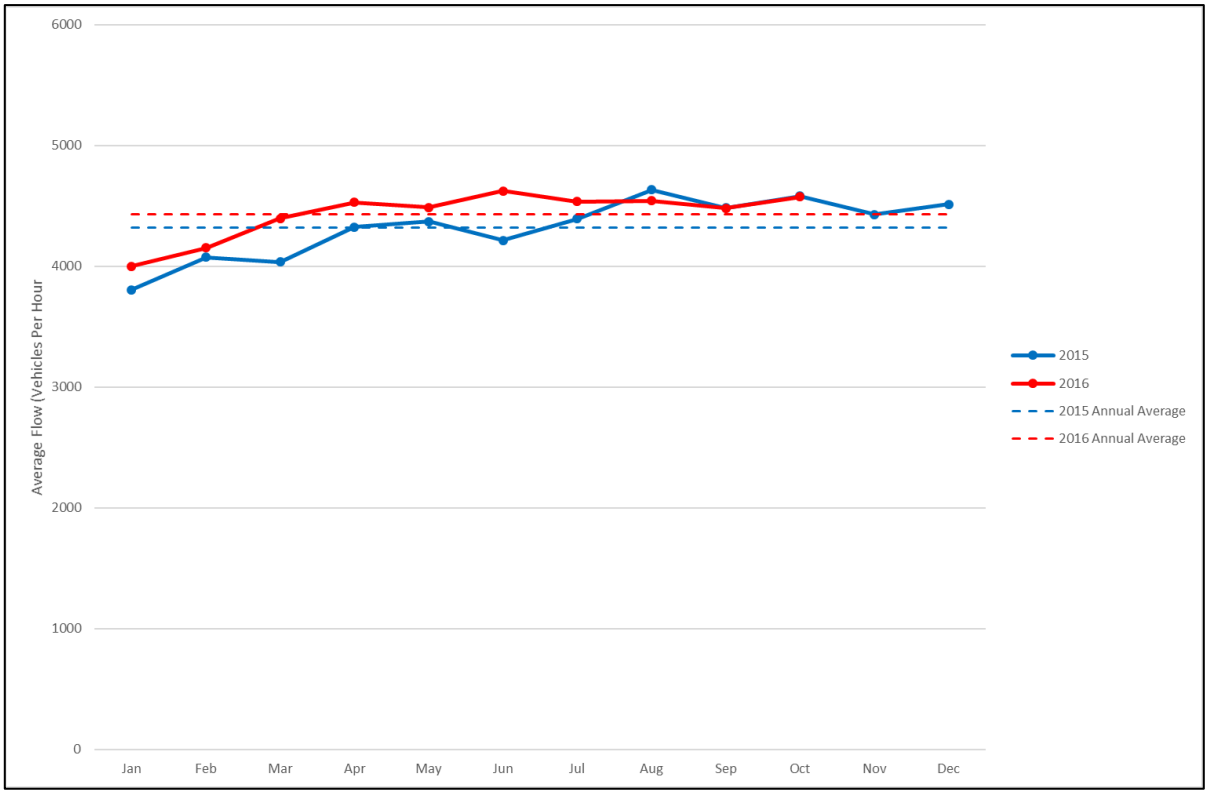


Plate 7.8 Dartford Crossing Traffic Flow Analysis – Inter-Peak Southbound

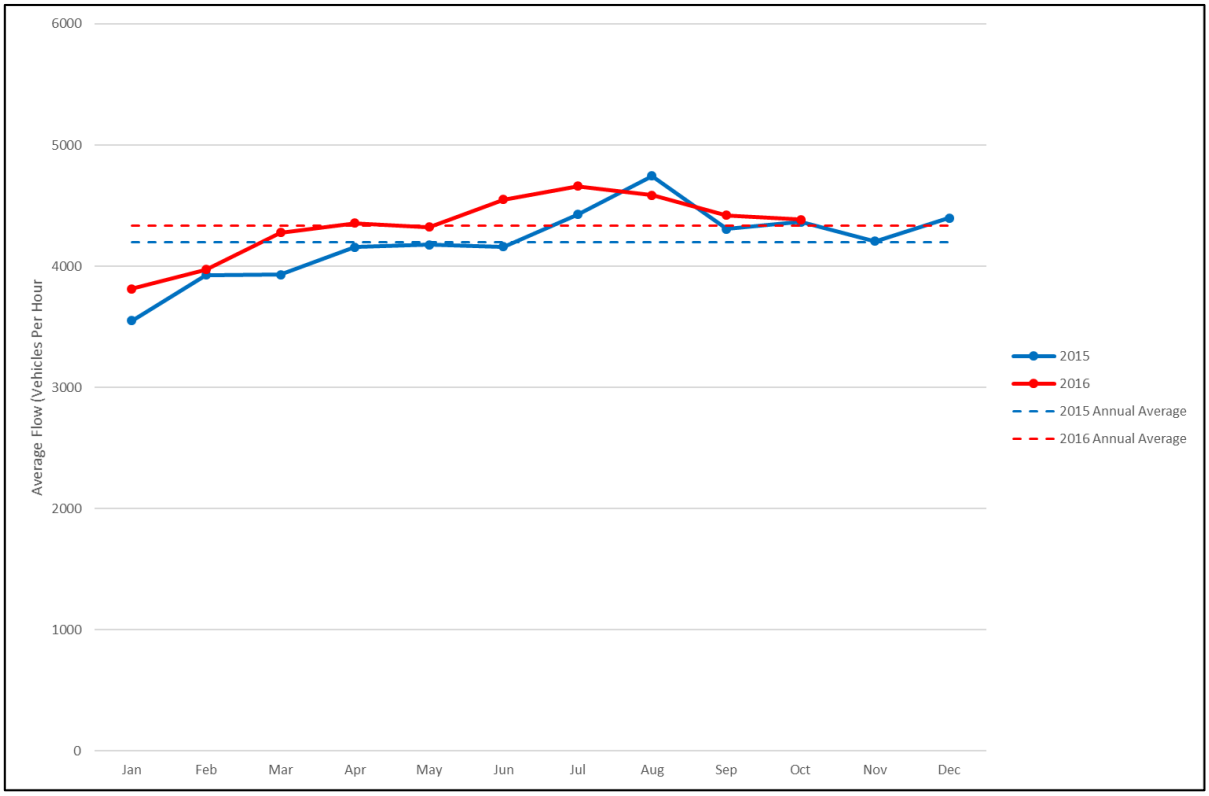


Plate 7.9 Dartford Crossing Traffic Flow Analysis – PM Peak Northbound

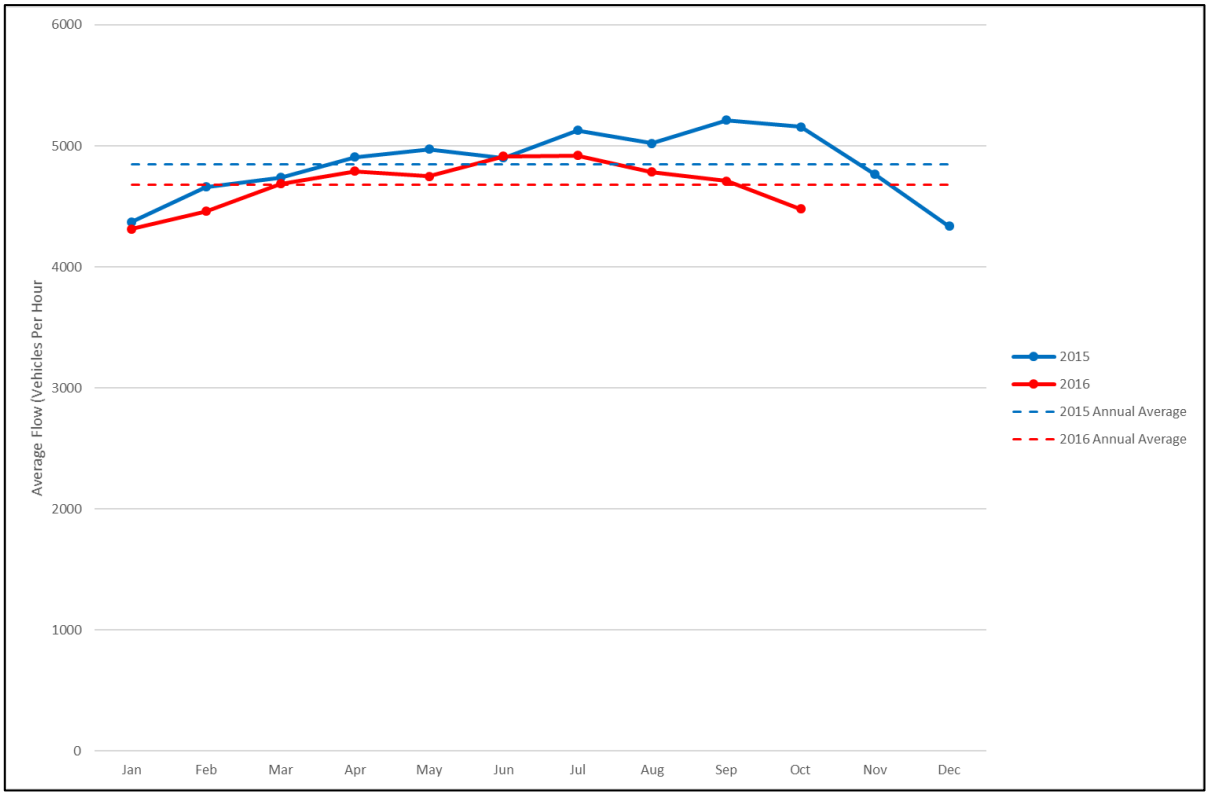
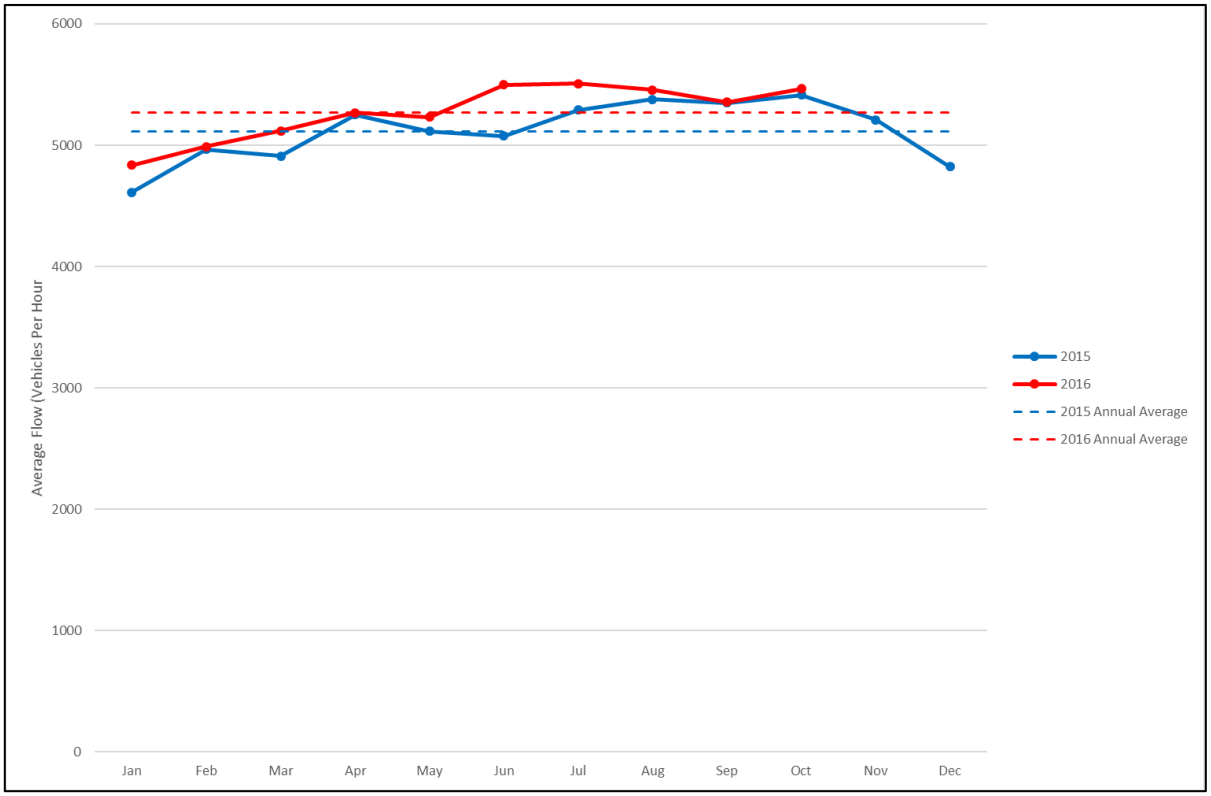


Plate 7.10 Dartford Crossing Traffic Flow Analysis – PM Peak Southbound



Motorway Count Flow Consistency Checks

7.4.4 As an additional check of the TRIS count data quality, the consistency of each count site when compared to others on the specific corridor was undertaken.

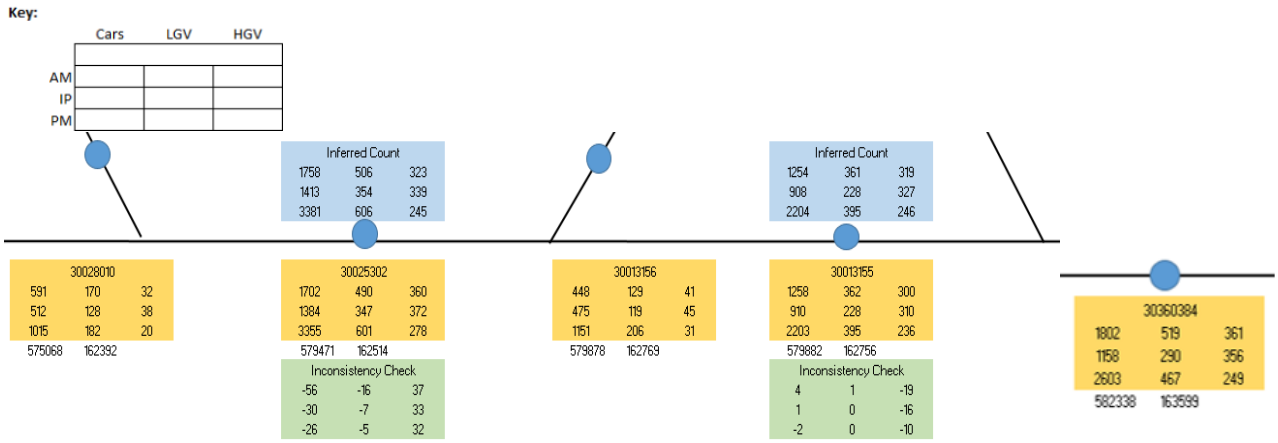
7.4.5 To do this, flow consistency diagrams representing the mainline carriageway and slips with count site locations were produced. Each count site was input with the processed TRIS data as nine flow values referring to three vehicle classes (Cars, LGVs and HGVs) in the three modelled time periods (AM: 07:00-08:00; IP: 09:00-15:00; PM: 17:00-18:00).

7.4.6 In this example, values in the yellow box indicate the measured flow from TRIS (with the three columns representing the vehicle classes, and the three rows the time periods). Flows in the blue boxes are the inferred counts calculated based on the upstream counts and the green tables indicate the differences between the inferred and observed flows.

7.4.7 A sample of the output of this process, showing part of the A2-M2 corridor in the vicinity of M2 Junction 4 in the eastbound direction, is presented in Plate 7.11. In this example, this indicates that both count “30025302” and especially count “30013155” represent good consistency with the upstream value.

7.4.8 The flow consistency checks were carried out throughout the model calibration and validation process. A summary of the findings from this exercise are presented in the Transport Model Package (Appendix B of the Combined Modelling and Appraisal Report (Application Document 7.7)).

Plate 7.11 Flow Consistency Check Diagram on A2-M2 Corridor.



7.5 Summary

7.5.1 This chapter sets out the locations of the ATC and MCC sites that were used to calibrate and validate the LTAM.

7.5.2 Details of the quality checks undertaken on the data were shown, including the results of the confidence interval testing which showed that 91% of sites were within 5% of the mean, increasing to 99% within 10% of the mean.

7.5.3 Details of the annual and seasonal factors used to apply to data originating from months/years other than March 2016 for a number of corridors/areas of interest were presented.

7.5.4 Finally, some summary statistics from the count database were provided, including:

a. flows by cordon/screenline

b. vehicle proportion percentages by corridor/area of interest and road type

c. Dartford Crossing Transaction Data.

8 Final trip dataset

8.1 Introduction

8.1.1 This chapter of the TDP describes how the different types of trip datasets (as explained in sections 3.3 and 4.2) were used in the development of the LTAM Prior Trip Matrices along with a summary of some key statistics from these datasets.

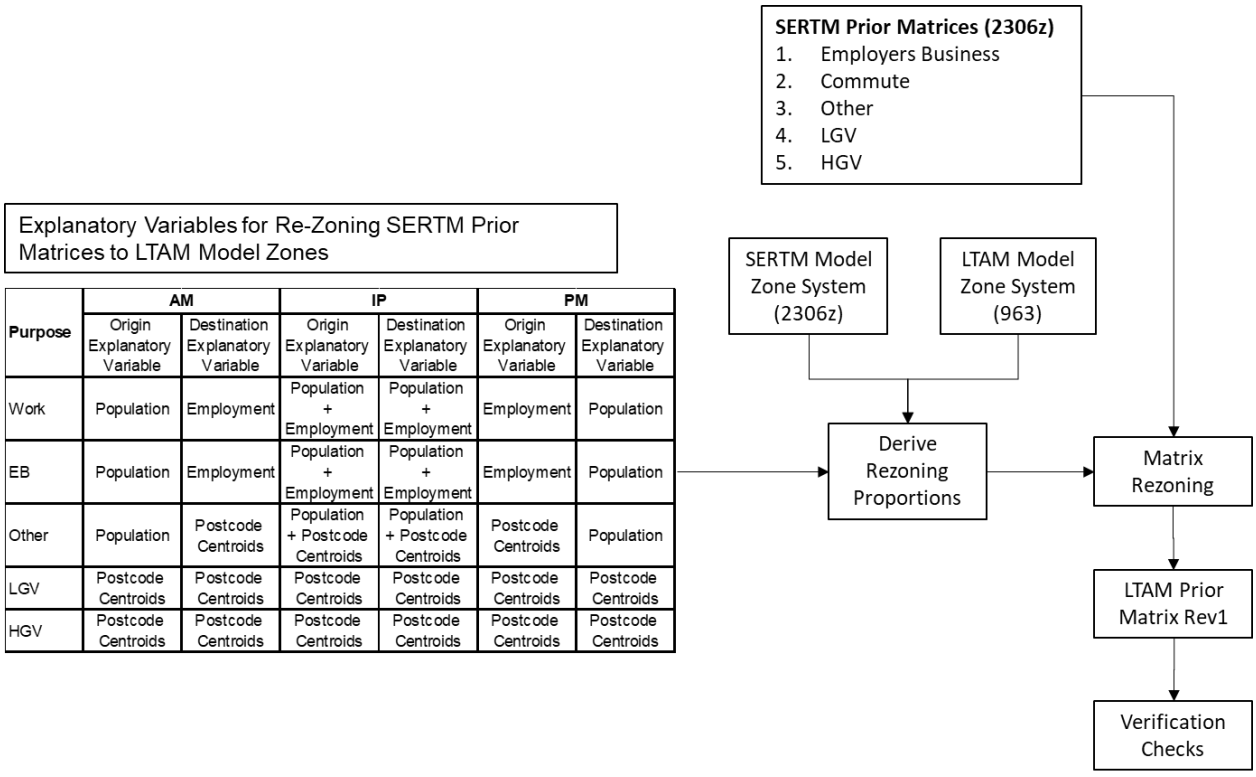
8.2 Use of different types of data

8.2.1 The different available data sets used are as follows.

SERTM Matrices

8.2.2 The SERTM Prior Matrices were used as the primary source for developing the LTAM Prior Trip Matrices. There are five different sequential processes used to develop the LTAM Final Prior Matrices as set out in Plate 8.1 and the text beneath it, with further detail in Section 5 of the Transport Model Package (Appendix B of the Combined Modelling and Appraisal Report (Application Document 7.7))

Plate 8.1 Methodology to develop the LTAM matrices from SERTM Design Freeze 3 (DF3) matrices



Purpose	AM		IP		PM	
	Origin Explanatory Variable	Destination Explanatory Variable	Origin Explanatory Variable	Destination Explanatory Variable	Origin Explanatory Variable	Destination Explanatory Variable
Work	Population	Employment	Population + Employment	Population + Employment	Employment	Population
EB	Population	Employment	Population + Employment	Population + Employment	Employment	Population
Other	Population	Postcode Centroids	Population + Postcode Centroids	Population + Postcode Centroids	Postcode Centroids	Population
LGV	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids
HGV	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids	Postcode Centroids

Convert SERTM DF3 Matrices to LTAM Matrices and Aligning with the Proposed LTAM Aggregated Zoning System

8.2.3 The zones in the FMA were defined by both aggregating and disaggregating the SERTM zones. MSOA's, LSOA's and OA's were used for disaggregating the zones. Zones finer than the OA's are required within the vicinity of the project. In such cases, the OA boundaries were split; however, to reduce the complexity in determining the proportions to convert SERTM matrices into LTAM matrices, the aggregation and disaggregation of the SERTM zones maintained the SERTM zone boundaries.

8.2.4 The SERTM DF3 demand matrices were used as the starting point to convert to the LTAM matrices and aligning with the proposed LTAM aggregated zoning. Population and Employment data sourced from the 2011 census data and Postal Code data sourced from ONS were used as the explanatory variables to determine the factors required to convert the SERTM matrices to the LTAM matrices. As the factors were determined and applied based on the correspondence created between the SERTM and LTAM zones, there were not any issues in zone matching.

SERTM to LTAM Temporal Conversion

8.2.5 The SERTM travel demand required to be changed from each average hour in the AM and PM peak periods to AM and PM peak hour demand as the LTAM uses the peak hour demand during the AM and PM peaks. The Inter-peak remained as the average hour with the change in time period from 10:00-16:00 (SERTM) to 09:00-15:00 (LTAM). For the LTAM, the peak hours are 07:00 to 08:00 in the AM peak and 17:00 to 18:00 during the PM peak. The following steps were involved in peak-period to peak-hour conversion:

a. Create sectors within the LTAM area using the screenline and cordon locations;

b. Identify the counts involved in all sector-sector movements;

c. Using the count database, generate peak-period to peak-hour factors for the screenline/cordon sector-sector movements; and

d. Apply these sector-sector factors to the version of the LTAM peak-period matrices (produced after converting SERTM to the LTAM zoning system).

8.2.6 Since the SERTM prior matrices represent March 2015 travel demand, the LTAM peak-hour matrices were converted from March 2015 to March 2016 using growth factor(s) generated from the TRIS count data.

Additional Segmentation

8.2.7 The LTAM peak hour matrices from the previous process were then used for segmenting based on income bands. The information for the income bands was obtained from the National Travel Survey (DfT, 2020a) data for the years 2002 – 2014 for England and 2002 – 2012 for Scotland and Wales.

Prior Matrix Factoring

8.2.8 At this stage of the matrix building process, the LTAM matrices were investigated to check trip information at a sector and cordon level and to compare against the observed count data. A series of checks were undertaken, and adjustments made to refine the LTAM matrices to produce the LTAM prior matrices which were suitable for input to a matrix estimation process in order to produce the final base year model matrices.

Other Data Types

8.2.9 The following datasets were used to verify the LTAM travel demand at various stages of the LTAM matrix building process:

a. 2011 Census Journey to Work data

b. National Travel Survey data

c. Teletrac OD data

d. Dartford Crossing Travel Survey data.

8.3 Summary statistics

8.3.1 Some key summary statistics of the various datasets used for developing the LTAM trip matrices are shown in the following sections.

SERTM Matrices Statistics

8.3.2 Plate 8.2 to Plate 8.4 show the SERTM matrices Trip Length Distributions (TLD) by time period and user class. These show that Car Commute and LGV have a similar pattern for the TLD's as expected. LGVs also show a higher number of shorter distance trips than Car Commute. Car Employer Business and Car Others have major peaks below 20km.

8.3.3 Table 8.1 shows the proportion of SERTM trips by time period and user class. Table 8.2 shows the proportion of the SERTM trips based on the LTAM Internal/External project study area. Table 8.3 to Table 8.5 summarise the proportion of the SERTM trips by sectors. Table 8.6 shows the SERTM average trip length and standard deviation by time periods and user class.

Plate 8.2 SERTM DF3 TLDs by User Class – AM Peak

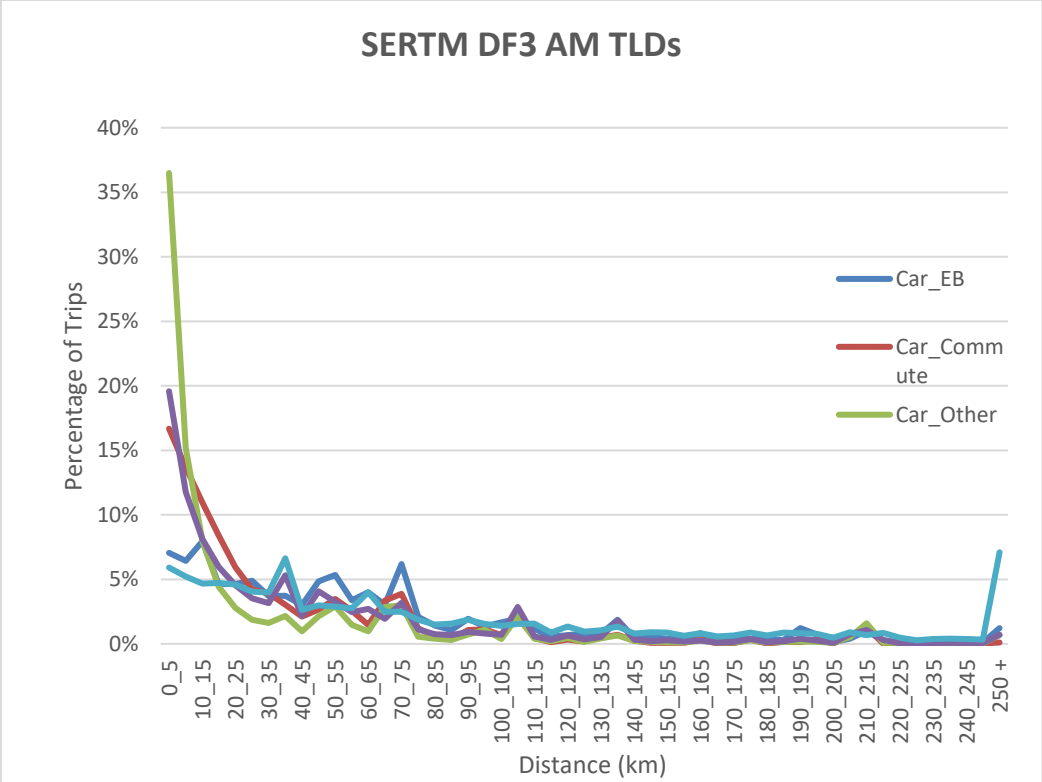


Plate 8.3 SERTM DF3 TLDs by User Class – Inter-Peak

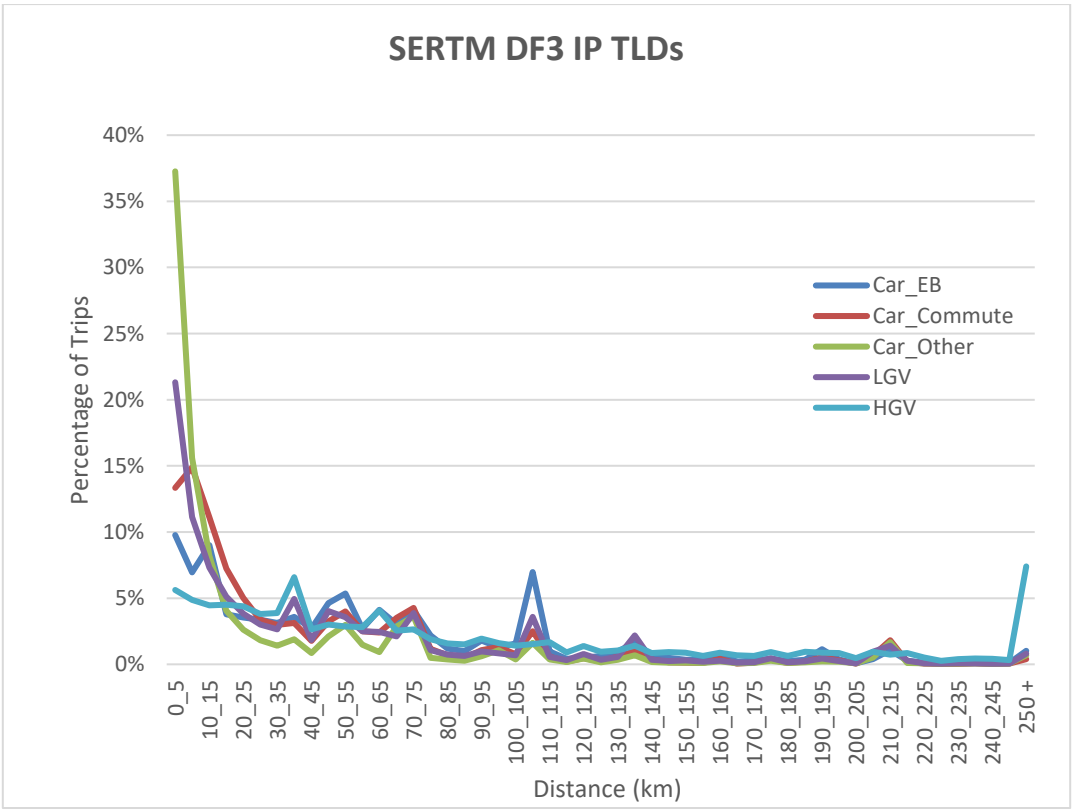


Plate 8.4 SERTM DF3 TLDs by User Class – PM Peak

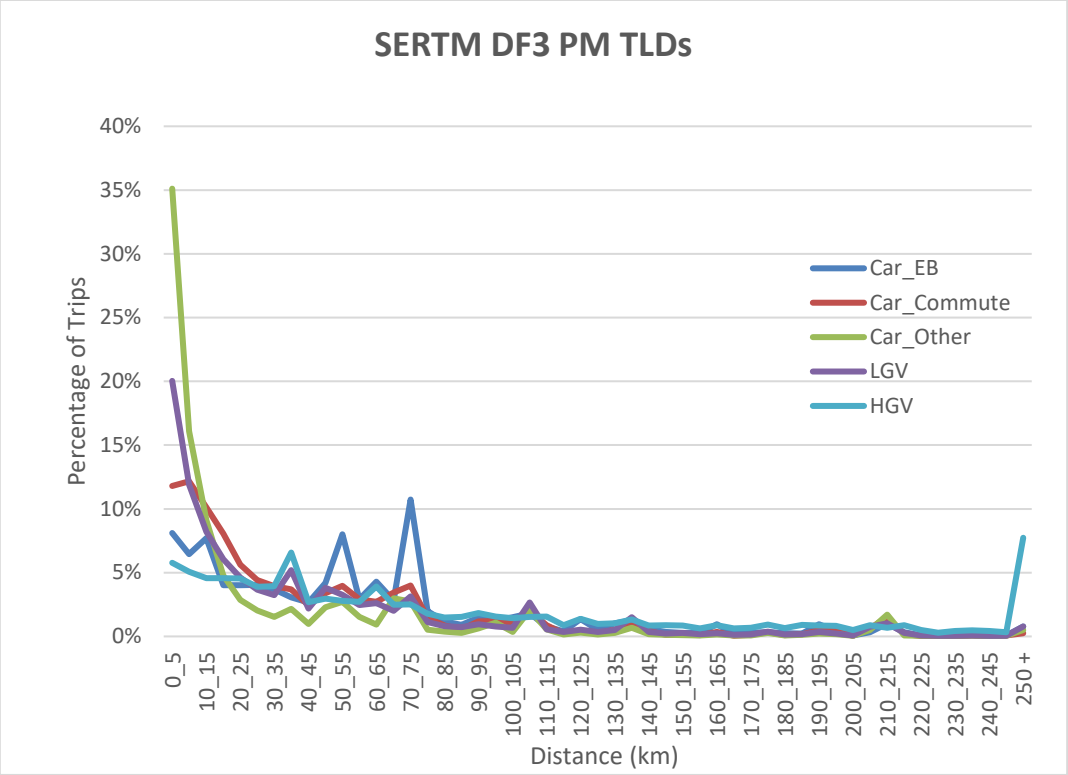


Table 8.1 SERTM DF3 Trip Proportion by Time Periods and User Class

Time Period	User Class	SERTM DF3 No. of Trips (PCUs)	Trip Proportion
AM	Employer's Business	476,873	9%
	Commute	2,109,883	39%
	Other	2,021,388	37%
	LGV	532,228	10%
	HGV	271,983	5%
	Total	**5,412,354**	**100%**
IP	Employer's Business	412,226	9%
	Commute	728,238	15%
	Other	2,862,404	60%
	LGV	512,746	11%
	HGV	260,186	5%
	Total	**4,775,799**	**100%**
PM	Employer's Business	499,057	8%
	Commute	1,981,696	33%
	Other	2,910,203	49%
	LGV	425,092	7%
	HGV	171,190	3%
	Total	**5,987,238**	**100%**

Table 8.2 Proportion of the SERTM Trips Based on the LTAM Internal/External Scheme Study Area

User Class		AM		IP		PM	
		Internal	External	Internal	External	Internal	External
Employers Business	Internal	5%	1%	4%	1%	5%	1%
	External	1%	93%	1%	94%	1%	93%
Commute	Internal	6%	1%	6%	1%	5%	1%
	External	1%	92%	1%	92%	1%	93%
Other	Internal	8%	1%	7%	1%	7%	1%
	External	1%	90%	1%	91%	1%	91%
LGV	Internal	7%	2%	7%	1%	8%	2%
	External	2%	89%	2%	90%	2%	88%
HGV	Internal	6%	4%	6%	3%	6%	4%
	External	4%	86%	3%	89%	4%	86%

Table 8.3 SERTM DF3 Trip Proportion by Sector – AM Peak

SERTM DF3 Sector-Sector Trip Proportion							
From Sector	To Sector	AM Peak					
		Employers Business	Commute	Other	LGV	HGV	Total
Essex (South) - North of river	Kent (West) - South of river	5%	32%	29%	9%	25%	100%
Kent (West) - South of river	Essex (South) - North of river	6%	24%	31%	11%	28%	100%
Essex (South) - North of river	Kent (East) - South of river	4%	8%	21%	9%	58%	100%
Kent (East) - South of river	Essex (South) - North of river	4%	8%	22%	8%	57%	100%

Table 8.4 SERTM DF3 Trip Proportion by Sector – Inter-Peak

SERTM DF3 Sector-Sector Trip Proportion							
From Sector	To Sector	Inter-Peak					
		Employers Business	Commute	Other	LGV	HGV	Total
Essex (South) - North of river	Kent (West) - South of river	5%	15%	42%	8%	31%	100%
Kent (West) - South of river	Essex (South) - North of river	4%	17%	40%	7%	31%	100%
Essex (South) - North of river	Kent (East) - South of river	2%	5%	23%	6%	63%	100%
Kent (East) - South of river	Essex (South) - North of river	3%	5%	24%	8%	59%	100%

Table 8.5 SERTM DF3 Trip Proportion by Sector – PM Peak

SERTM DF3 Sector-Sector Trip Proportion							
From Sector	To Sector	PM Peak					
		Employers Business	Commute	Other	LGV	HGV	Total
Essex (South) - North of river	Kent (West) - South of river	6%	26%	38%	11%	20%	100%
Kent (West) - South of river	Essex (South) - North of river	5%	32%	36%	8%	19%	100%
Essex (South) - North of river	Kent (East) - South of river	3%	12%	21%	9%	54%	100%
Kent (East) - South of river	Essex (South) - North of river	4%	13%	24%	11%	48%	100%

Table 8.6 SERTM DF3 Average Trip Length and Standard Deviation by Time Period and Trip Purpose.

Time Period	Purpose	SERTM DF3	
		Average Trip Length (km)	Standard Deviation (km)
AM	EB	60	52
	Commute	38	45
	Other	32	48
	LGV	43	50
	HGV	71	62
IP	EB	60	52
	Commute	44	50
	Other	32	48
	LGV	46	52
	HGV	73	62
PM	EB	58	49
	Commute	45	48
	Other	31	47
	LGV	42	49
	HGV	72	62

8.4 Summary

8.4.1 This chapter sets out that the SERTM Prior Matrices that were used as the primary source for the LTAM Prior Trip Matrices. The process to develop the LTAM Final Prior Matrices was set out, together with details of other datasets used to verify LTAM travel demand.

8.4.2 Summary statistics from the key datasets were presented:

a. SERTM Matrices Trip Length Distributions by time period and user class;

b. Proportion of SERTM trips by time period and user class;

c. Proportion of SERTM trips in the LTAM internal/external project area;

d. Proportion of SERTM trips by sectors; and

e. SERTM average trip length and standard deviation by time periods and user class.

9 Final journey time dataset

9.1 Introduction

9.1.1 As described earlier the primary source of journey time data for use in validating the LTAM was the Teletrac GPS Journey Time data.

9.1.2 A series of journey time routes were defined covering the primary corridors of interest. These are shown in Plate 9.1 and detailed in Table 9.1 which provides general statistics on each route. Some of these routes are very long and were broken down into smaller segments during the model validation process.

9.1.3 Details of the verification process undertaken on the data is detailed in Section 11.4.

Plate 9.1 LTAM Development Journey Time Routes

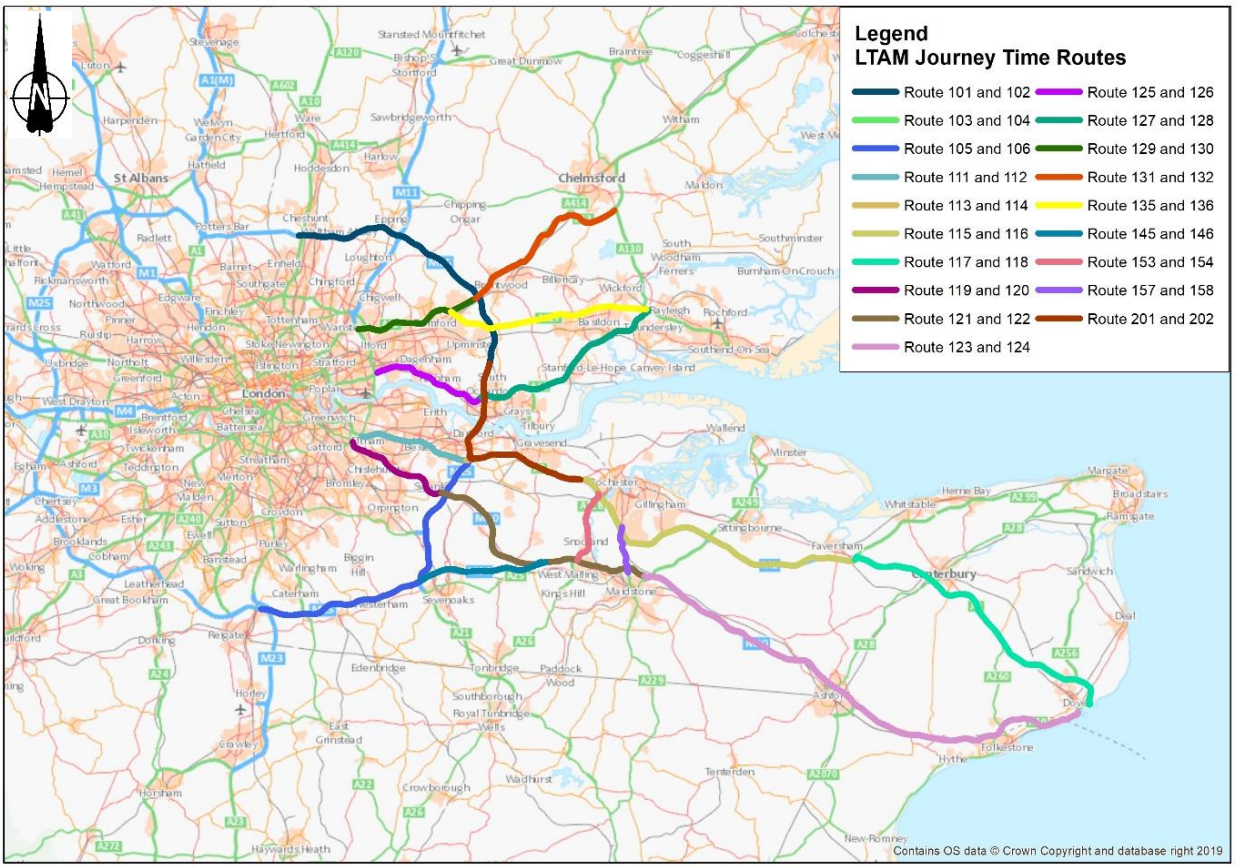


Table 9.1 LTAM Model Development Journey Time Routes

JT Route No	Journey Time Route Description	Route Distance (km)
Route 101	M25 junction 25 - junction 30 CW	38.5
Route 102	M25 junction 30 - junction 25 ACW	38.4
Route 103	M25 junction 30 - junction 2 CW (A282)	9.5
Route 104	M25 junction 2 - junction 30 ACW (A282)	9.5
Route 105	M25 junction 2 - junction 7 CW	37.9
Route 106	M25 junction 7 - junction 2 ACW	38.1
Route 111	A2 South Circular - M25 junction EB	13.9
Route 112	A2 M25 junction - South Circular WB	13.8
Route 113	A2 M25 junction - M2 junction 1 EB	15.1
Route 114	A2 M2 junction 1 - M25 junction WB	14.9
Route 115	M2 junction 1 - junction 7 EB	40.7
Route 116	M2 junction 7 - junction 1 WB	41.0
Route 117	A2 M2 junction - Dover EB	38.5
Route 118	A2 Dover - M2 Junction WB	38.3
Route 119	A20 South Circular - M25 junction EB	14.0
Route 120	A20 M25 junction - South Circular WB	13.8
Route 121	M20 junction 1 - junction 7 EB	30.9
Route 122	M20 junction 7 - junction 1 WB	31.2
Route 123	M20/A20 junction 7 - Dover EB	64.3
Route 124	M20/A20 Dover - junction 7 WB	64.3
Route 125	A13 North Circular - M25 Junction EB	14.7
Route 126	A13 M25 junction - North Circular WB	14.8
Route 127	A13 M25 junction - Basildon EB	25.6
Route 128	A13 Basildon - M25 junction WB	25.4
Route 129	A12 North Circular - M25 junction EB	16.1
Route 130	A12 M25 junction - North Circular WB	16.1
Route 131	A12 M25 junction - Chelmsford EB	22.7
Route 132	A12 Chelmsford - M25 Junction WB	22.7
Route 135	A127 Gallows Corner - Basildon EB	25.4
Route 136	A127 Basildon - Gallows Corner WB	25.4
Route 145	M26 M25 junction - M20 junction EB	15.9
Route 146	M26 M20 junction - M25 junction WB	16.0
Route 153	A228 M20 junction - M2 junction NB	9.7
Route 154	A228 M2 junction - M20 junction SB	9.7
Route 157	A229 M20 junction - M2 junction NB	6.0
Route 158	A229 M2 junction - M20 junction SB	5.9

JT Route No	Journey Time Route Description	Route Distance (km)
Route 201	M25 junction 30 – M2 junction 1	23.48
Route 202	M2 junction 1 – M25 junction 30	23.76

9.2 Summary statistics

9.2.1 Using the Teletrac data on the routes set out in Table 9.1, Table 9.2 – Table 9.4 provide summary statistics (journey time and speed) for each route by vehicle class (lights/heavies) and by time period (AM/IP/PM).

Table 9.2 Median Journey Time Route Statistics by Vehicle Class (AM Peak)

JT Route No	AM			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 101	22.55	102.57	26.56	87.07
Route 102	26.37	87.44	29.79	77.41
Route 103	7.26	78.63	7.75	73.59
Route 104	8.47	67.18	8.91	63.83
Route 105	32.42	70.09	36.44	62.36
Route 106	21.26	107.48	26.24	87.08
Route 111	9.95	83.70	10.98	75.85
Route 112	15.11	55.01	15.51	53.59
Route 113	8.62	105.18	10.49	86.47
Route 114	15.50	57.52	17.25	51.69
Route 115	22.85	106.95	28.05	87.12
Route 116	24.16	101.82	28.39	86.66
Route 117	25.02	92.23	31.08	74.26
Route 118	24.01	95.71	30.26	75.93
Route 119	12.07	69.48	14.85	56.48
Route 120	19.37	42.78	22.06	37.56
Route 121	16.87	109.83	21.56	85.93
Route 122	25.15	74.43	30.06	62.28
Route 123	39.58	97.59	49.11	78.65
Route 124	37.19	103.66	47.74	80.75
Route 125	11.01	80.00	11.43	77.09
Route 126	25.21	35.29	26.75	33.27
Route 127	17.21	89.19	19.85	77.32
Route 128	28.68	53.26	31.89	47.90
Route 129	20.89	46.19	23.11	41.75
Route 130	37.41	25.87	46.96	20.61

JT Route No	AM			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 131	13.31	102.54	15.18	89.90
Route 132	18.66	72.89	22.39	60.76
Route 135	24.41	62.47	26.03	58.59
Route 136	30.57	49.93	35.08	43.51
Route 145	8.39	114.11	10.66	89.81
Route 146	9.01	106.68	10.97	87.61
Route 153	9.31	62.65	10.62	54.93
Route 154	11.41	51.21	12.92	45.23
Route 157	4.23	85.31	5.07	71.06
Route 158	4.55	77.83	4.92	71.88
Route 201	15.27	92.27	17.45	80.73
Route 202	23.67	60.22	25.86	55.13

9.2.2 Table 9.2 shows the median journey time and speed for both light and heavy vehicles in the AM peak.

9.2.3 In general, this shows that on routes heading towards London, journey times are longer and speeds slower when compared to those routes heading out of London. This pattern is also shown on routes heading into other major urban areas, such as Chelmsford.

9.2.4 In virtually all cases, as would be expected, light vehicles travel faster than heavy vehicles.

Table 9.3 Median Journey Time Route Statistics by Vehicle Class (IP)

JT Route No	IP			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 101	22.73	101.75	26.62	86.85
Route 102	22.22	103.79	26.29	87.70
Route 103	6.98	81.75	7.30	78.15
Route 104	8.05	70.65	8.43	67.46
Route 105	21.44	105.96	25.94	87.59
Route 106	21.43	106.64	26.02	87.82
Route 111	10.20	81.68	10.70	77.84
Route 112	9.62	86.38	10.25	81.04
Route 113	8.61	105.33	10.44	86.87
Route 114	8.43	105.79	10.61	84.05
Route 115	22.37	109.25	27.77	88.00

JT Route No	IP			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 116	22.58	108.92	27.98	87.92
Route 117	24.86	92.83	29.43	78.40
Route 118	24.10	95.34	28.69	80.09
Route 119	12.16	68.98	13.59	61.73
Route 120	12.61	65.73	13.94	59.44
Route 121	16.84	110.04	21.31	86.93
Route 122	17.02	110.00	21.24	88.13
Route 123	39.76	97.15	49.74	77.66
Route 124	37.16	103.75	46.58	82.76
Route 125	11.48	76.76	11.95	73.68
Route 126	11.60	76.72	11.99	74.22
Route 127	17.06	89.99	19.20	79.94
Route 128	20.15	75.80	22.75	67.14
Route 129	22.03	43.79	23.36	41.29
Route 130	22.42	43.17	23.64	40.94
Route 131	13.34	102.29	15.67	87.06
Route 132	13.08	103.99	15.42	88.22
Route 135	22.58	67.55	24.53	62.17
Route 136	19.04	80.17	20.51	74.43
Route 145	8.88	107.81	10.74	89.07
Route 146	8.76	109.76	10.84	88.70
Route 153	9.45	61.73	10.03	58.13
Route 154	9.95	58.76	10.71	54.56
Route 157	4.25	84.83	5.08	71.00
Route 158	4.19	84.43	4.47	79.14
Route 201	15.00	93.91	16.97	83.04
Route 202	16.26	87.68	18.72	76.14

9.2.5 In the inter-peak, the Teletrac data shows that, in general, journey times are shorter and speeds quicker than in either the AM or PM peak periods.

9.2.6 In addition, in general, journey times and speeds are better balanced by direction, which is likely to be a result of lower traffic volumes and therefore lower congestion as well as a lower proportion of journey to work trips which will reduce flow tidality. This is not true of all routes, such as those close to London which continue to exhibit slower speeds in one direction.

Table 9.4 Median Journey Time Route Statistics by Vehicle Class (PM Peak)

JT Route No	PM			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 101	23.35	99.04	26.35	87.75
Route 102	22.04	104.63	26.25	87.85
Route 103	7.16	79.66	7.72	73.94
Route 104	9.63	59.09	10.00	56.85
Route 105	20.67	109.91	25.80	88.08
Route 106	22.69	100.73	26.60	85.91
Route 111	15.21	54.77	16.50	50.47
Route 112	10.84	76.64	12.23	67.97
Route 113	10.36	87.55	11.54	78.64
Route 114	8.30	107.36	10.09	88.39
Route 115	24.20	100.98	29.20	83.70
Route 116	22.64	108.67	28.17	87.34
Route 117	25.87	89.20	30.73	75.09
Route 118	25.07	91.65	31.42	73.13
Route 119	13.41	62.55	18.92	44.33
Route 120	14.72	56.28	16.90	49.02
Route 121	20.61	89.89	25.08	73.88
Route 122	16.63	112.56	21.28	87.98
Route 123	39.31	98.28	51.80	74.57
Route 124	36.43	105.83	45.93	83.93
Route 125	17.25	51.05	17.41	50.59
Route 126	11.65	76.37	12.17	73.09
Route 127	21.57	71.14	23.32	65.83
Route 128	20.54	74.39	25.44	60.05
Route 129	29.27	32.96	34.18	28.23
Route 130	26.64	36.33	30.39	31.85
Route 131	14.35	95.06	16.20	84.23
Route 132	13.15	103.46	15.59	87.28
Route 135	38.35	39.77	46.41	32.86
Route 136	21.01	72.65	23.10	66.08
Route 145	10.51	91.02	14.16	67.59
Route 146	8.47	113.53	10.86	88.52
Route 153	10.28	56.75	11.19	52.13
Route 154	10.38	56.30	11.24	51.97

JT Route No	PM			
	Lights		Heavy	
	Median Time (mins)	Speed (km/h)	Median Time (mins)	Speed (km/h)
Route 157	4.51	79.94	5.57	64.75
Route 158	4.17	84.88	4.48	78.93
Route 201	16.46	85.62	17.99	78.32
Route 202	17.65	80.77	19.81	71.95

9.2.7 In the PM peak, the data shows that traffic speeds are often slower and journey times longer heading out of major urban areas, such as London – essentially showing the reverse of the AM peak.

9.3 Summary

9.3.1 This chapter has set out that 38 Journey Time routes, over 19 sections of network, that were used to validate the LTAM.

9.3.2 These routes cover the primary corridors of interest.

9.3.3 Some summary statistics were presented, showing the journey time and speed for each route by vehicle class (lights/heavies) and by time period (AM/IP/PM).

10 Operational traffic data

10.1 Introduction

10.1.1 A series of further data was collected to assist in a range of areas. This included aiding the design development of the project, examining the future operational performance of the project, helping to assess the impact of the project on non-motorised users, supporting construction assessment activities and aiding the environment team with their work.

10.2 Data review

10.2.1 This section sets out the requirement for the 2017 traffic data collection.

Use of Existing Models and Data

10.2.2 Existing models and their data were examined to determine their suitability as a source of data. Following consideration, only existing models and data on the M25 corridor around the Dartford Crossing were deemed suitable for use in developing any new operational models that might be built. No other existing data sources were considered suitable.

10.2.3 A 2015 model had been built as part of the Lower Thames Crossing Options Stage by extending two models previously developed around the Dartford Crossing:

a. The Dartford Free Flow Charging operational model developed by Parsons Brinkerhoff in 2012 to assess the Traffic Management Cell; and

b. The M25 junction 30 operational model developed by Jacobs in 2013.

10.2.4 These models covered the following junctions:

a. M25 junction 29;

b. M25 junction 30;

c. M25 junction 31;

d. M25 junction 1a;

e. M25 junction 1b;

f. Princes Road / Park Road roundabout;

g. M25 junction 2; and

h. M25 junction 3.

10.2.5 The data used in the development of the 2015 model included:

a. Classified turning counts for signalized junctions and classified OD traffic counts for roundabouts on a typical weekday (Wednesday 18 March 2015);

b. Queue surveys on a typical weekday (Wednesday 18 March 2015);

c. Signal Timings (green times, cycle times and offsets) on a typical weekday (Wednesday 18 March 2015);

d. Automatic Number Plate Recognition (ANPR) surveys over three typical weekdays in March 2015;

e. Saturation flows and degrees of saturation calculated manually from videos recorded on a typical weekday (Wednesday 18 March 2015); and

f. Teletrac Journey Time data.

New Survey Data

10.2.6 As no other suitable data was identified for other corridors in the study area, a significant amount of new data collection was undertaken.

10.2.7 The volumetric data was collected by Automatic Number Plate Recognition Surveys (ANPR), Classified Link Counts (CLC), Classified Junction Counts (CJC), Queue Length Surveys (QLS) and green time and cycle time surveys.

10.3 New survey details

10.3.1 Traffic surveys were commissioned on behalf of National Highways (formerly Highways England) in October/November 2016.

10.3.2 These surveys were in addition to those collected to support the development of the LTAM.

10.3.3 The traffic surveys were conducted on a neutral weekday under normal traffic conditions. The traffic surveys were as follows:

a. Classified Link Counts (CLC);

b. Classified Junction Counts (CJC);

c. Queue Length Surveys (QLS);

d. Automatic Number Plate Recognition Surveys (ANPR); and

e. traffic signal timing surveys.

10.3.4 Surveys were undertaken along the following five corridors, as shown in Plate 10.1:

a. The A127 from the M25 / A127 junction to the A127 / A128 junction;

b. The A13 from the M25 / A13 junction to the A13 / B1007 junction;

c. The A2 from the M25 / A2 junction to the M2 / A229 junction;

d. The A226 from A226 / A289 junction to A226 / Chalk Road junction; and

e. The A229 from A2 / A229 junction to the M20 / A229 junction.

10.3.5 No data for the M25 corridor was collected, as that data set out in Section 10.2 was available.

10.3.6 CLC surveys were undertaken for 20 sites on a mid-weekday.

10.3.7 CJC surveys in conjunction with QLS were specified for the 48 junction sites where turning movement counts were required for modelling purposes. The CJC and QLS data were collected at all sites on the same mid-weekday.

10.3.8 ANPR surveys were undertaken at 105 locations within five cordons, with all counts within an individual cordon taken on the same mid-weekday.

10.3.9 The specification for each survey type is given in the following sections.

10.4 Classified link counts

10.4.1 CLCs were conducted to record the type of vehicle and direction of travel along a specified location on the road network.

10.4.2 CLCs were undertaken at 20 locations for a 14-hour period. Counts were undertaken on Tuesday 11 October 2016, from 06:00 to 20:00, for both directions separately.

10.4.3 Counts were taken for nine vehicle types (PC, MC, Cars/taxis, LGV, OGV1, OGV2, Buses, Coaches and Other) by fifteen-minute periods. Pedestrians, equestrians and mobility scooters were excluded from the counts.

10.4.4 Plate 10.1 to Plate 10.5 show the locations of the Classified Link Count sites.

Plate 10.1 Corridor A Classified Link Count Sites

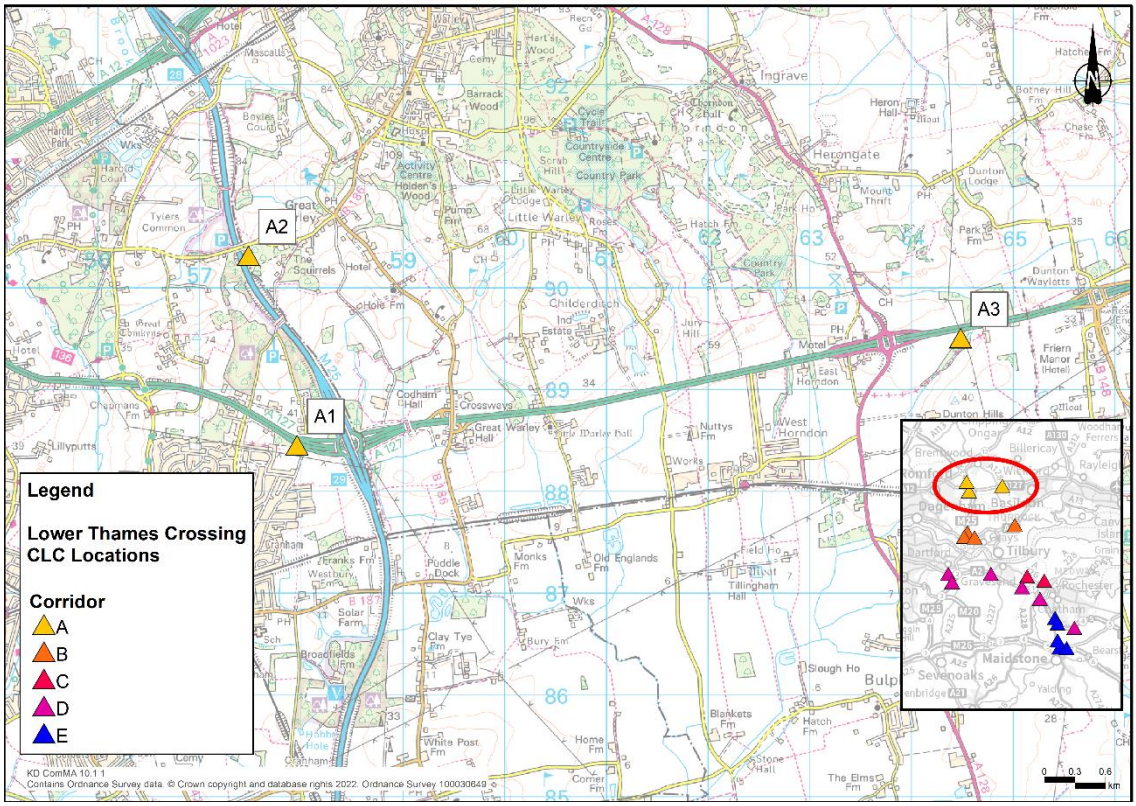


Plate 10.2 Corridor B Classified Link Count Sites

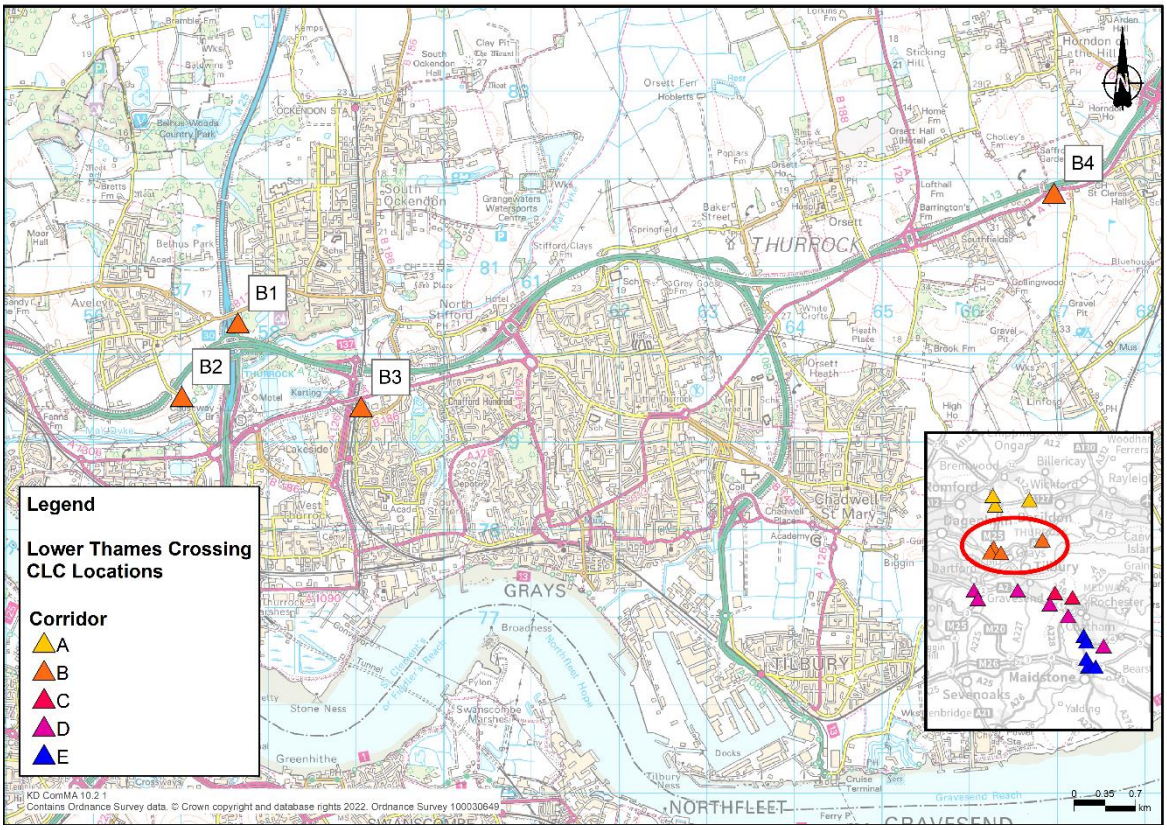


Plate 10.3 Corridor C Classified Link Count Sites

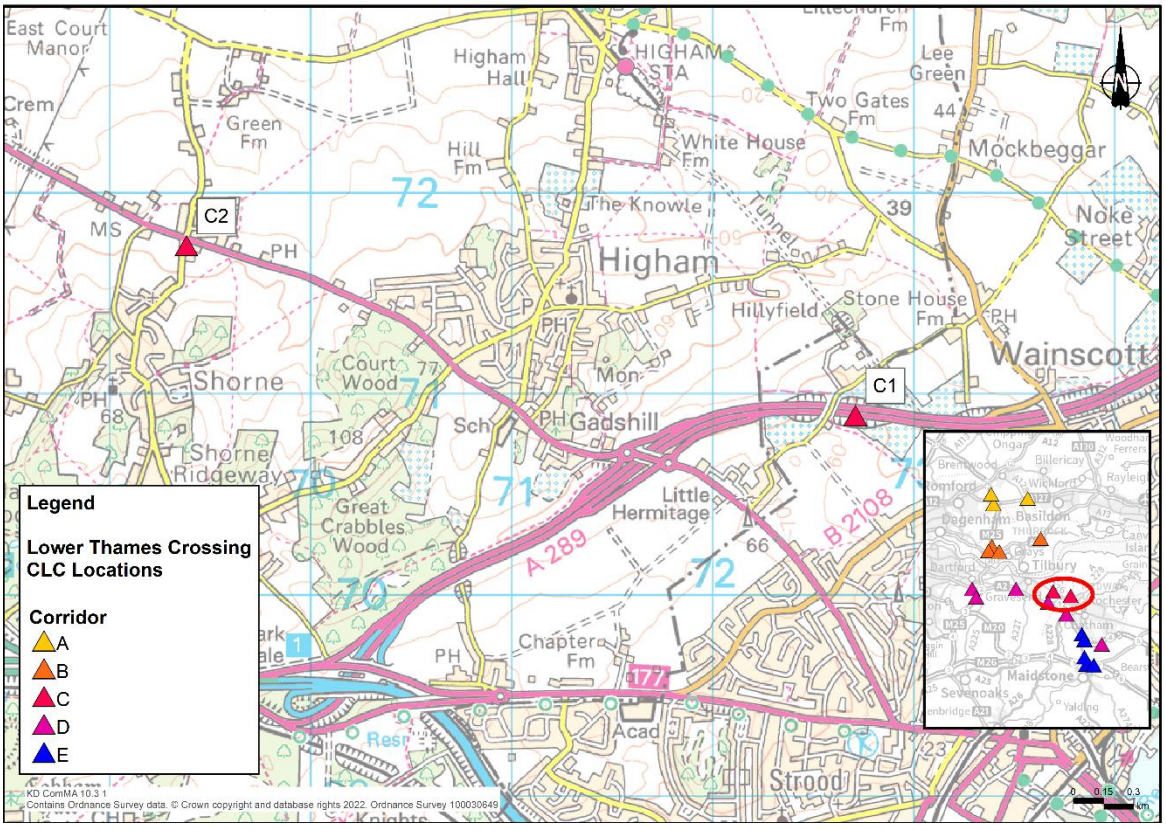


Plate 10.4 Corridor D Classified Link Count Sites

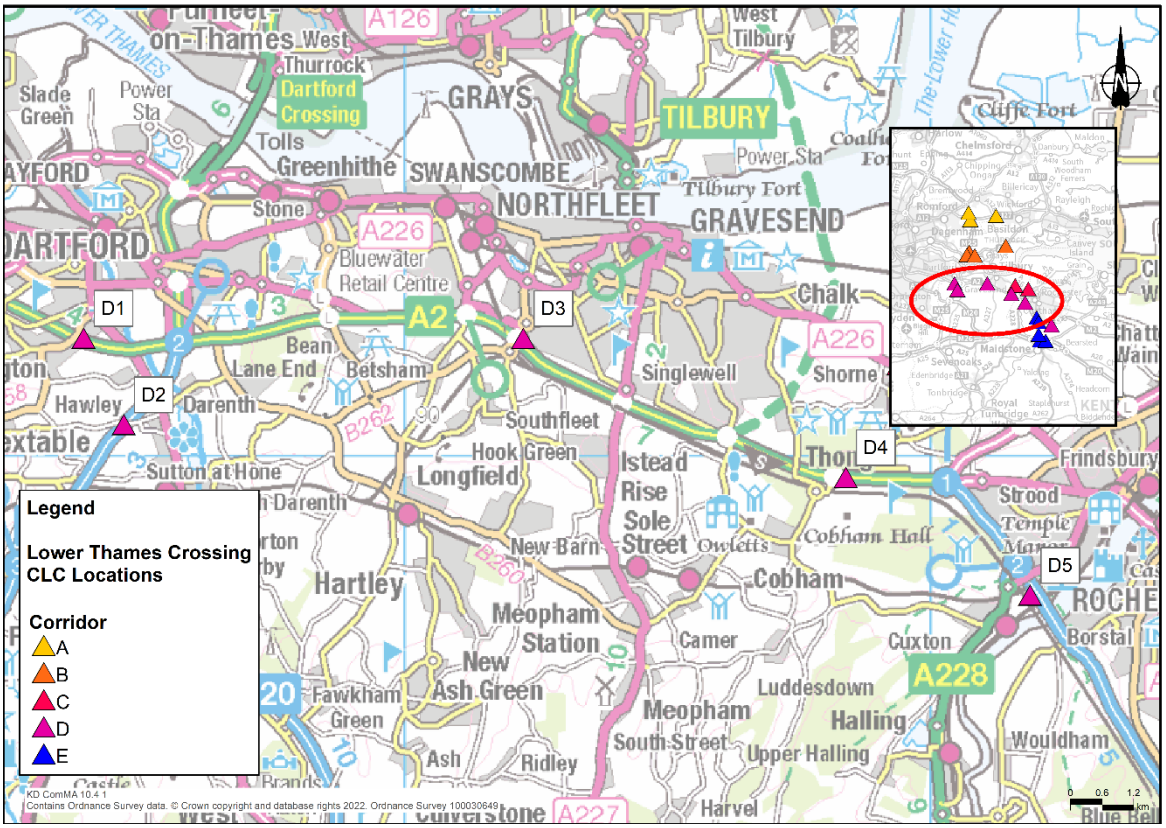
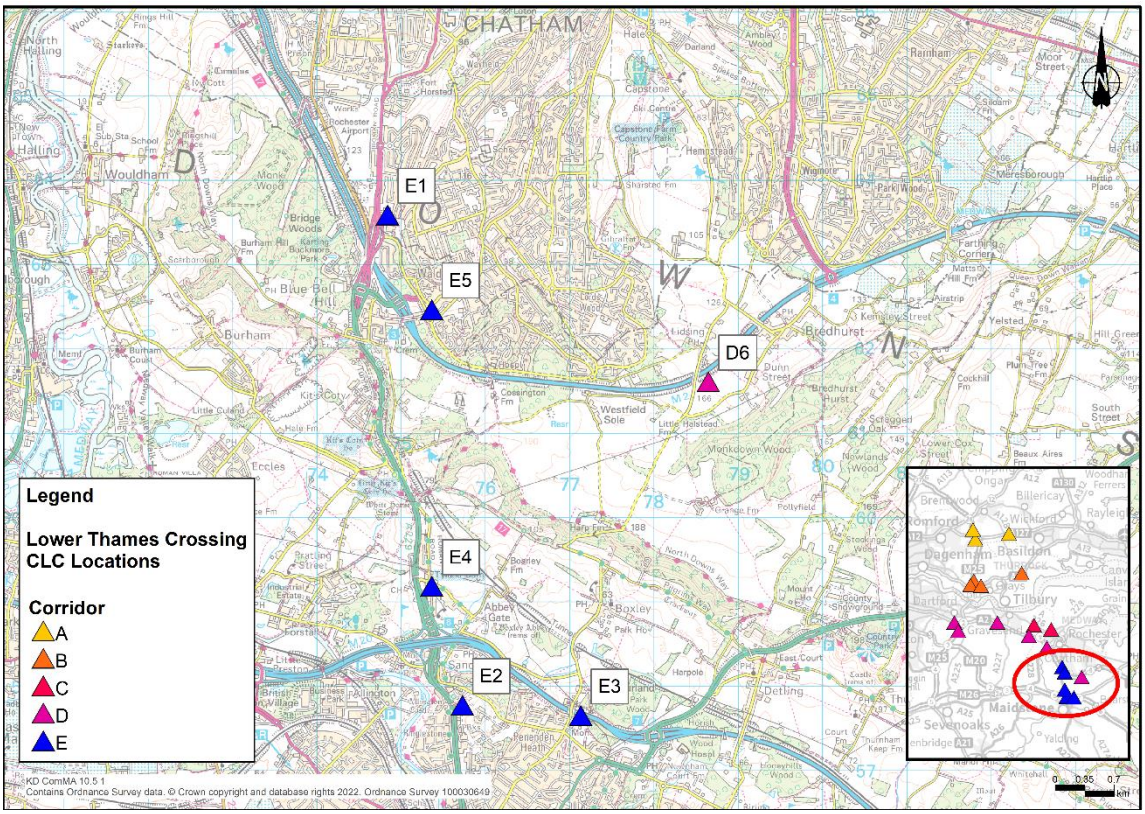


Plate 10.5 Corridor E Classified Link Count Sites



10.4.5 The CLC site locations, as well as their grid references, are shown in Table 10.1.

Table 10.1 CLC Locations

Site No	Road Number	Road Name	X	Y
A1	A127	M25 junction 29	557959	188451
A2	M25	Warley Road	557482	190315
A3	A127	A127 / A128	564483	189504
B1	M25	junction 30	557651	180355
B2	A13	M25 J30	557010	179517
B3	A126	A126 / A13	559057	179398
B4	A13	A13/A1013	566962	181837
C1	A289	A289 / A226	572709	170891
C2	A225	Forge Lane/Green Farm Lane	569383	171735
D1	M25	junction 2	553887	172238
D2	M25	junction 2	554650	170595
D3	A2	-	562247	172235
D4	A2	-	568380	169593
D5	A228	M2 J2 / Sundridge Hill	571885	167357
D6	M2	junction 4	578645	161607
E1	A229	A229 / A2046	574840	163587
E2	A229	A229 / M20	575728	157773
E3	M20	M20 / A229	577132	157649
E4	-	Tyland Lane / A229	575364	159182
E5	A2045	-	575363	162465

10.5 Classified junction counts and queue length surveys

10.5.1 CJCs were conducted to record the type of vehicle, origin arm and destination arm for all specified vehicles passing through each junction.

10.5.2 CJC and QLS were undertaken at 48 locations. All counts were undertaken on Tuesday 11 October 2016 at all sites between 06:00 and 20:00.

10.5.3 Counts were collected for eight vehicle types (PC, MC, Cars/taxis, LGV, OGV1, OGV2, Buses/Coaches and Other) by 15-minute periods. Pedestrians, equestrians and mobility scooters were excluded from the counts. The data was collected using high-mast video camera equipment, followed by office-based transcription to generate the numerical data.

10.5.4 In addition, vehicle queue lengths were also recorded at 41 specified locations on the approach arms to junctions where considered necessary. At signalised junctions queue lengths were recorded when the signal for a particular arm changes to green, whereas at a priority junction, it was recorded at two -minute intervals.

10.5.5 Plate 10.6 to Plate 10.10 show the locations of the classified junction count sites.

Plate 10.6 Corridor A Classified Junction Count Sites

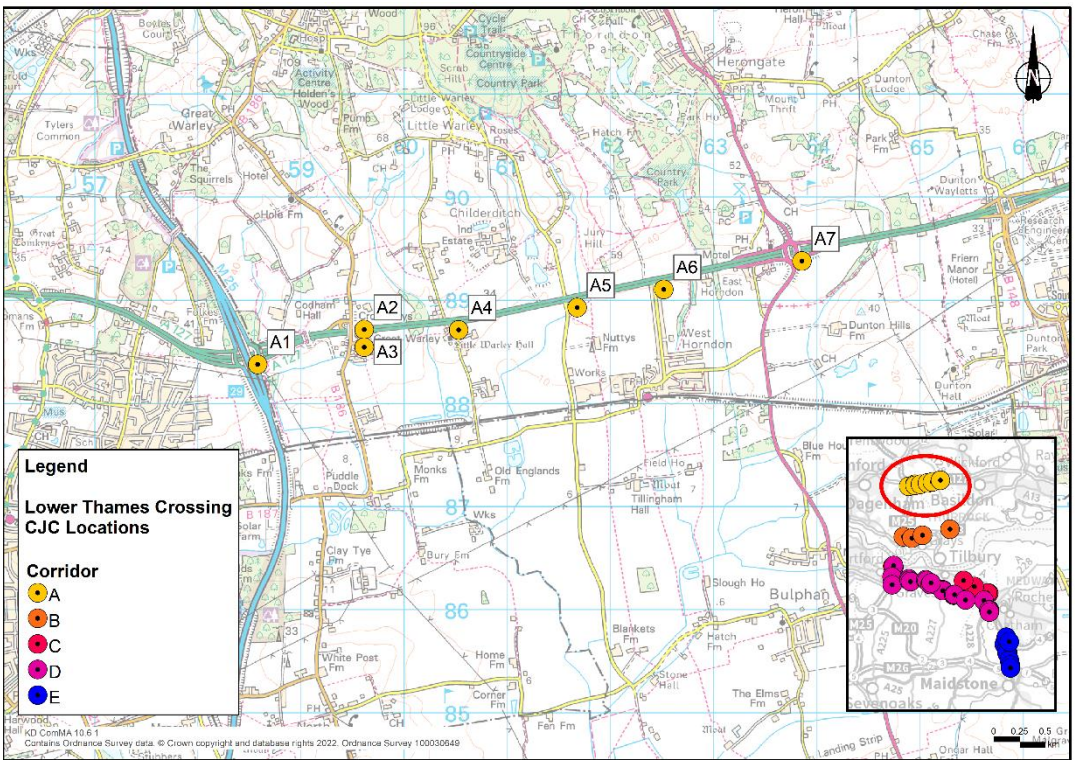


Plate 10.7 Corridor B Classified Junction Count Sites

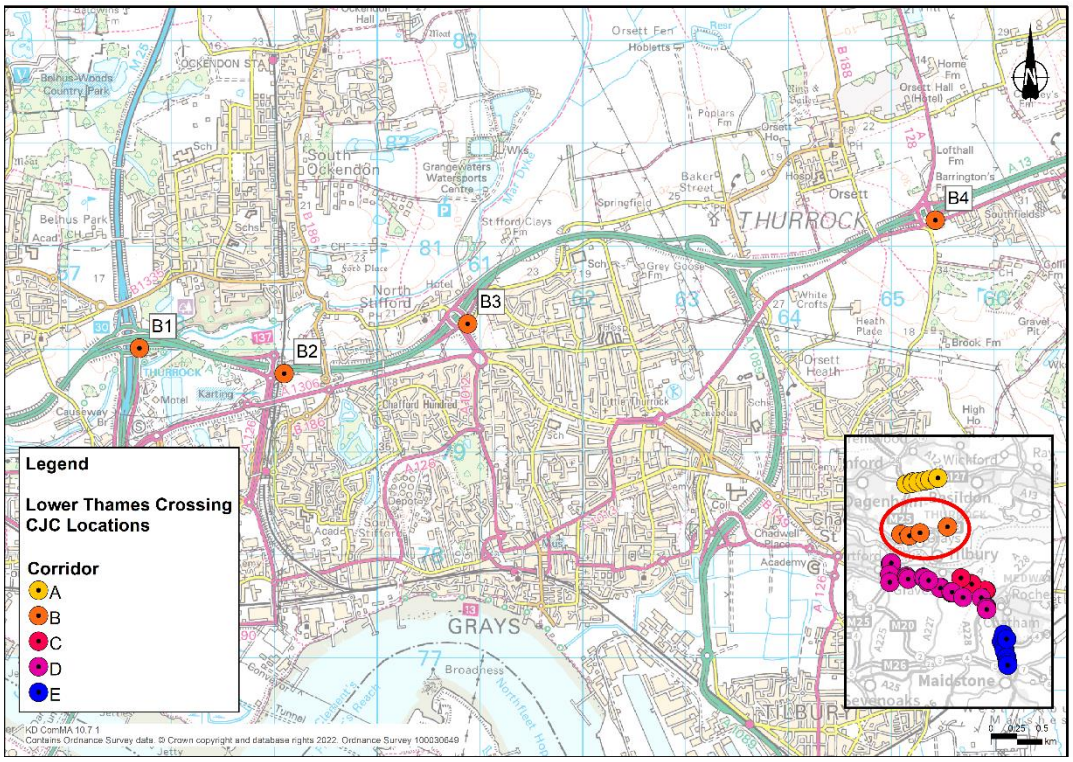


Plate 10.8 Corridor C Classified Junction Count Sites

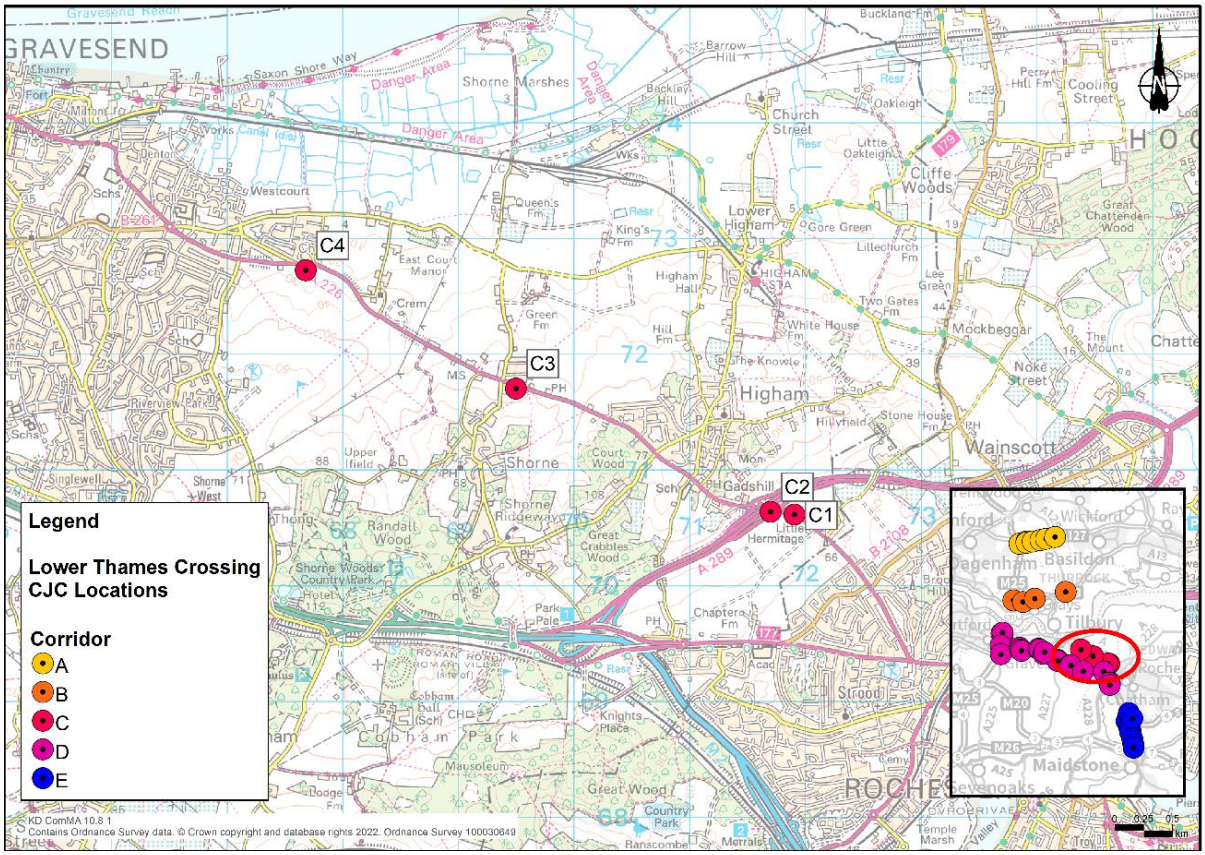


Plate 10.9 Corridor D Classified Junction Count Sites

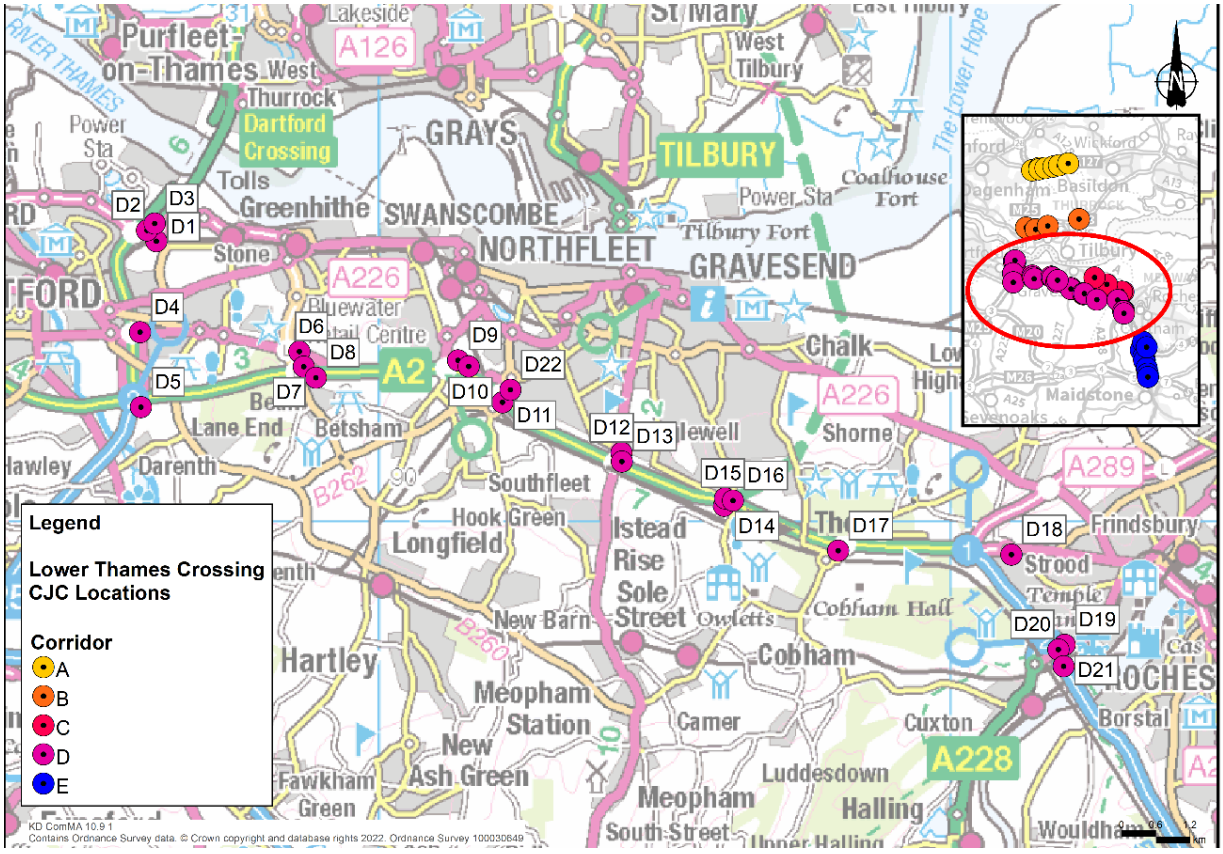
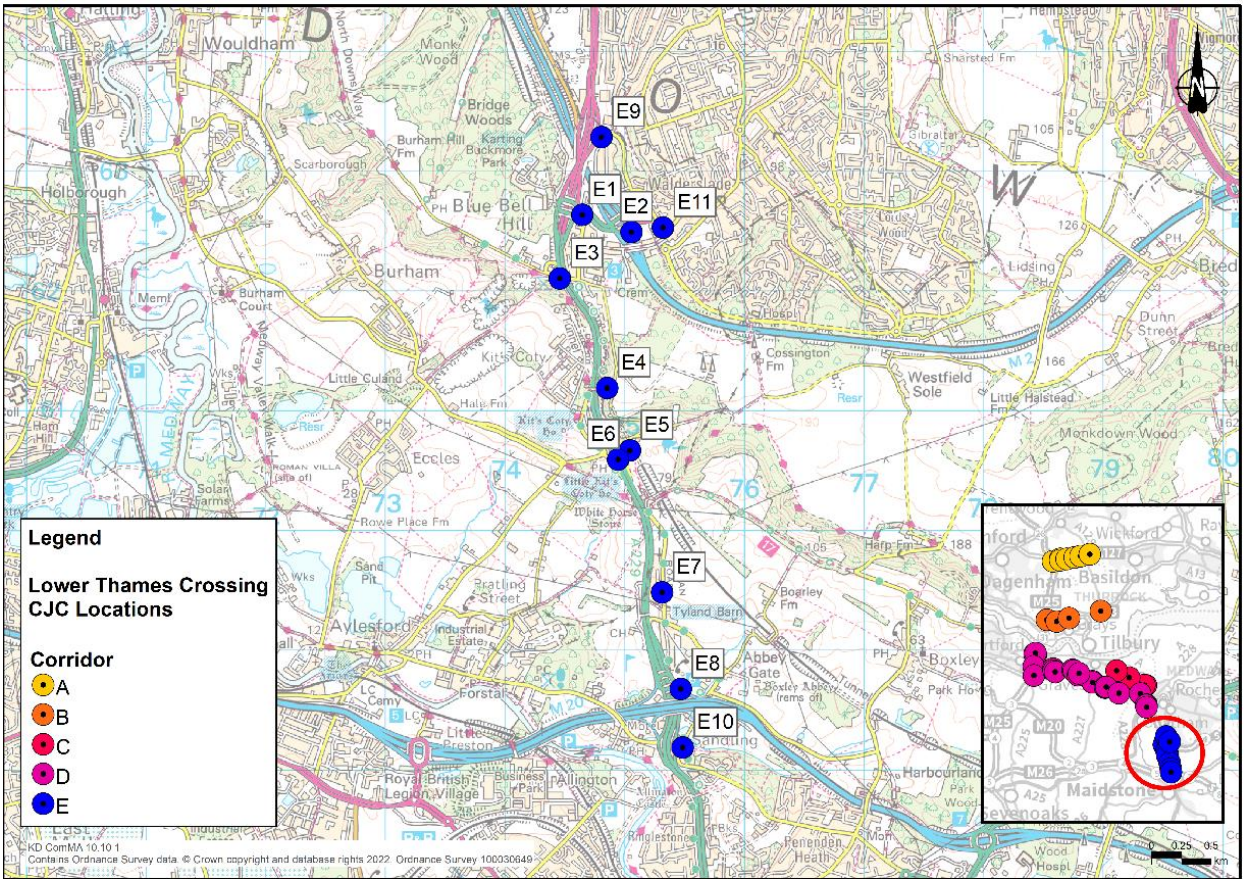


Plate 10.10 Corridor E Classified Junction Count Sites



10.5.6 The CJC site locations, as well as their grid references, are shown in Table 10.2.

Table 10.2 CJC Locations

Site No	Road Number	Junction Name	X	Y
A1	A127 / M25	M25 junction 29	558582	188377
A2	B186	Warley Street j/w A127	559615	188714
A3	A127	Little Warley Hall Lane / A127	559614	188545
A4	A127	Little Warley Hall Lane / A127	560530	188711
A5	A127	Childeritch Lane / A127	561679	188929
A6	A127	Thorndon Avenue / A127	562518	189104
A7	A128 / A127	A128 Brentwood Road / Tilbury Road j/w A127	563857	189380
B1	M25 / A13 / M25	Mar Dyke Interchange	557690	180007
B2	A126 / A13	A126 / A13	559097	179761
B3	A13 / A1012	Stifford Interchange	560882	180245
B4	A13 / A128 / A1013	Orsett Cock	565432	181252
C1	A289 / A226	Gravesend Road/Hasted Road	571905	170615
C2	A289 / A226	Gravesend Road / A289 – Slip Road	571699	170637

Site No	Road Number	Junction Name	X	Y
C3	A226	Gravesend Road	569499	171703
C4	A226	A226/Chalk Road	567683	172724
D1	A206 / A282	Littlebrook Interchange	556108	174909
D2	A206 / A282	Littlebrook Interchange / A282	555941	175100
D3	A206 / A282	Littlebrook/Manor Way Interchange	556076	175219
D4	A282 / A296 / A225	A282/Princes Road	555822	173317
D5	A282 / A2 / M25	M25 junction 2	555835	172007
D6	B225/A296	A296 / B255 / Bean Lane roundabout	558609	172980
D7	B225/A2	A2 / B255 / Bean Lane roundabout	558683	172715
D8	A2	A2 / Bean Lane	558897	172522
D9	A2260/A2	A2260 / A2 / Ebbsfleet Green	561384	172825
D10	A2 / A2260	A2 / A2260 roundabout	561571	172719
D11	A2	A2 / Hall Road roundabout	562163	172090
D12	A2	A2 Westbound / Wrotham Road	564242	171206
D13	A2	A2 Westbound / Wrotham Road	564249	171053
D14	A2	A2 Westbound / Henhurst Road	566038	170280
D15	A2	A2 Eastbound / Hever Court Road / Henhurst Road	566056	170412
D16	A2	A2 Eastbound /Hever Court Road/Valley Drive	566193	170370
D17	A2	A2 Westbound / Brewers Road / Halfpence Lane / Thong Lane	568032	169493
D18	A2	A2 / Old Watling Street	571065	169426
D19	M2	M2/A228	571997	167849
D20	M2 / A228	M2/A228	571888	167765
D21	M2 / A228	A228/M2	571978	167473
D22	A2 / B262	B262 Hall Road/A2	562299	172310
E1	A229	A229 / A2045	574647	162635
E2	M2 / A2045	M2 junction 2	575058	162492
E3	A229	A229 / Common Road	574459	162105
E4	A229	A229 / Salisbury Road	574855	161189
E5	A229	A229 / Rochester Road / Lower Warren Road Junction	575045	160668
E6	A229	A229 / Rochester / Old Chatham Road	574946	160591
E7	A229	Arm North of Cobtree roundabout	575315	159482
E8	M20 / A229	A229 / M20	575471	158676

Site No	Road Number	Junction Name	X	Y
E9	A229 / A2045	A229 / A2045 / B2097	574807	163285
E10	A229 / M20	A229/M20	575487	158186
E11	A2045	A2045 / Walderslade Woods	575321	162529

10.6 Automatic Number Plate Recognition (ANPR) surveys

10.6.1 A total of 105 ANPR sites were selected to be counted on a single weekday. The ANPR sites were divided into five cordon areas. Given the scale of the task and the amount of survey equipment required, it was not possible to have all surveys undertaken on the same day. The surveys were undertaken on the following dates:

a. Cordon A: Tuesday, October 11 2016;

b. Cordon B: Thursday, November 10 2016;

c. Cordon C: Tuesday, October 11 2016;

d. Cordon D: Tuesday, November 1 2016; and

e. Cordon E: Thursday, November 10 2016.

10.6.2 The surveys were undertaken for a continuous 15-hour period between 05:30 and 20:30.

10.6.3 Traffic was monitored using ANPR cameras to capture the traffic movements and entry of cordon to exit of cordon journey times.

10.6.4 The following vehicle classifications were used in the ANPR surveys:

a. Cars and taxis;

b. Light goods vehicles (including vans and ambulances);

c. OGV1 consisting of all goods vehicles with two axles with twin tyres, three axles (rigid);

d. OGV2 consisting of all goods vehicles with three axles (articulated), four axles or more (rigid or articulated);

e. Buses and coaches; and

f. Other vehicles (e.g. agricultural tractors, road rollers).

10.6.5 For each vehicle, the following data were recorded and provided by the survey company:

a. Vehicle type, as classified above;

b. The seven digits (alphanumeric) of its registration plate;

c. The time (hh/mm/ss) of passing the cordon point; and

d. The direction of travel.

10.6.6 Matched flows were presented in 15-minute intervals for each pair of cameras and for each vehicle classification separately.

10.6.7 Plate 10.11 to Plate 10.15 show the locations of the ANPR sites.

Plate 10.11 Corridor A ANPR Sites

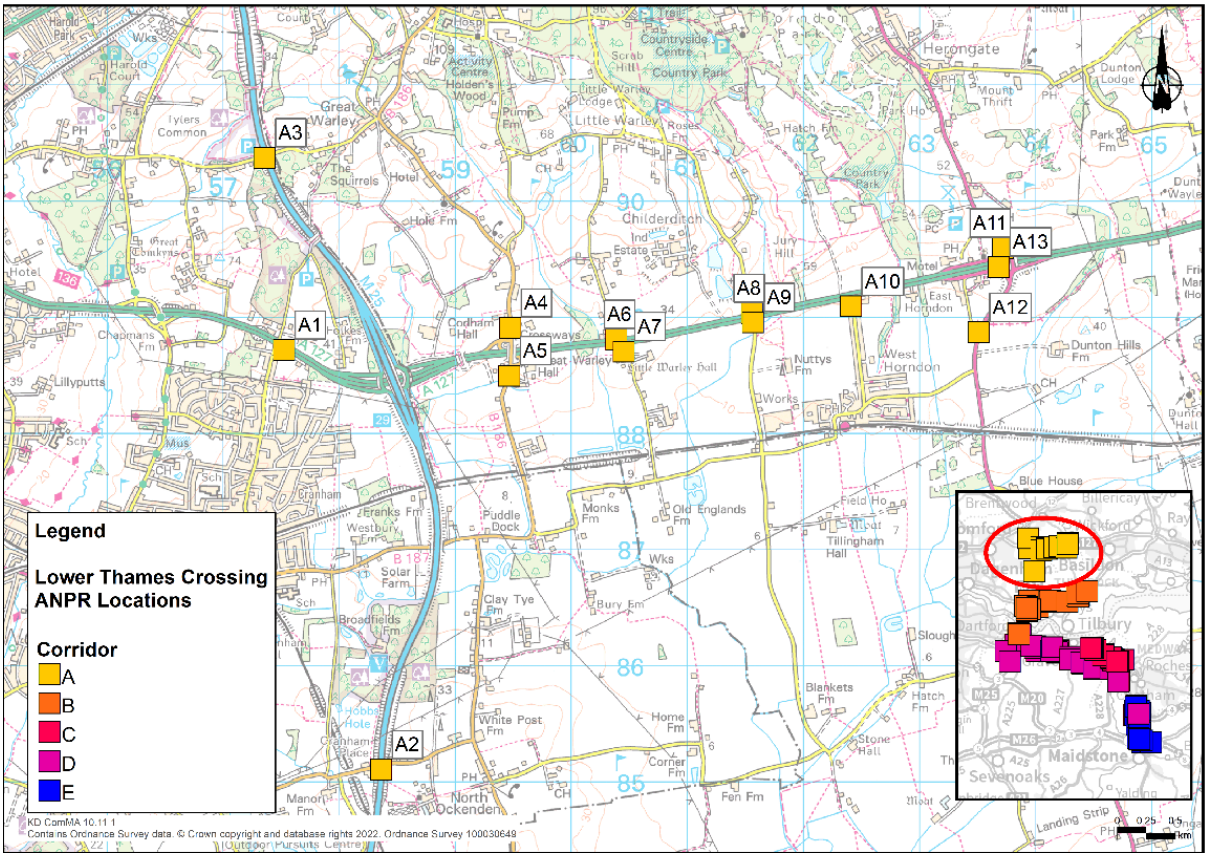


Plate 10.12 Corridor B ANPR Sites

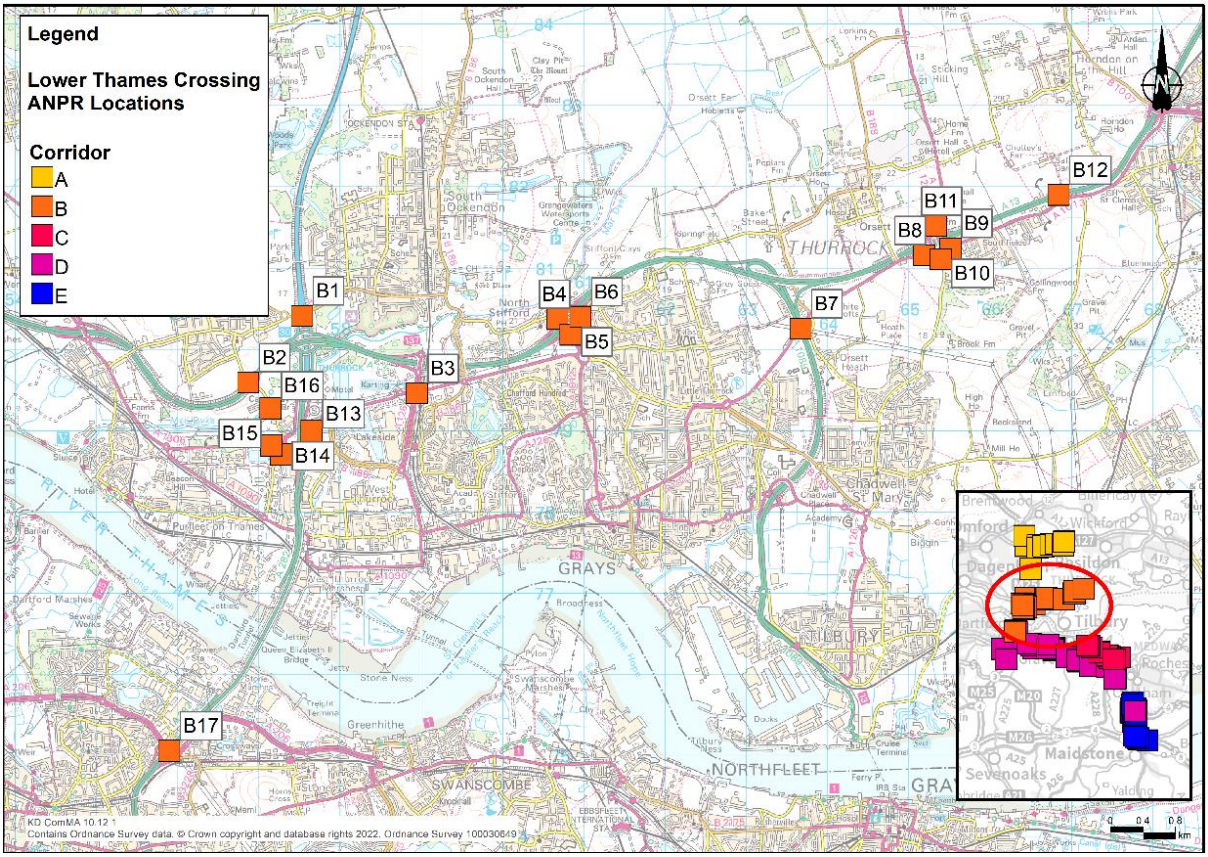


Plate 10.13 Corridor C ANPR Sites

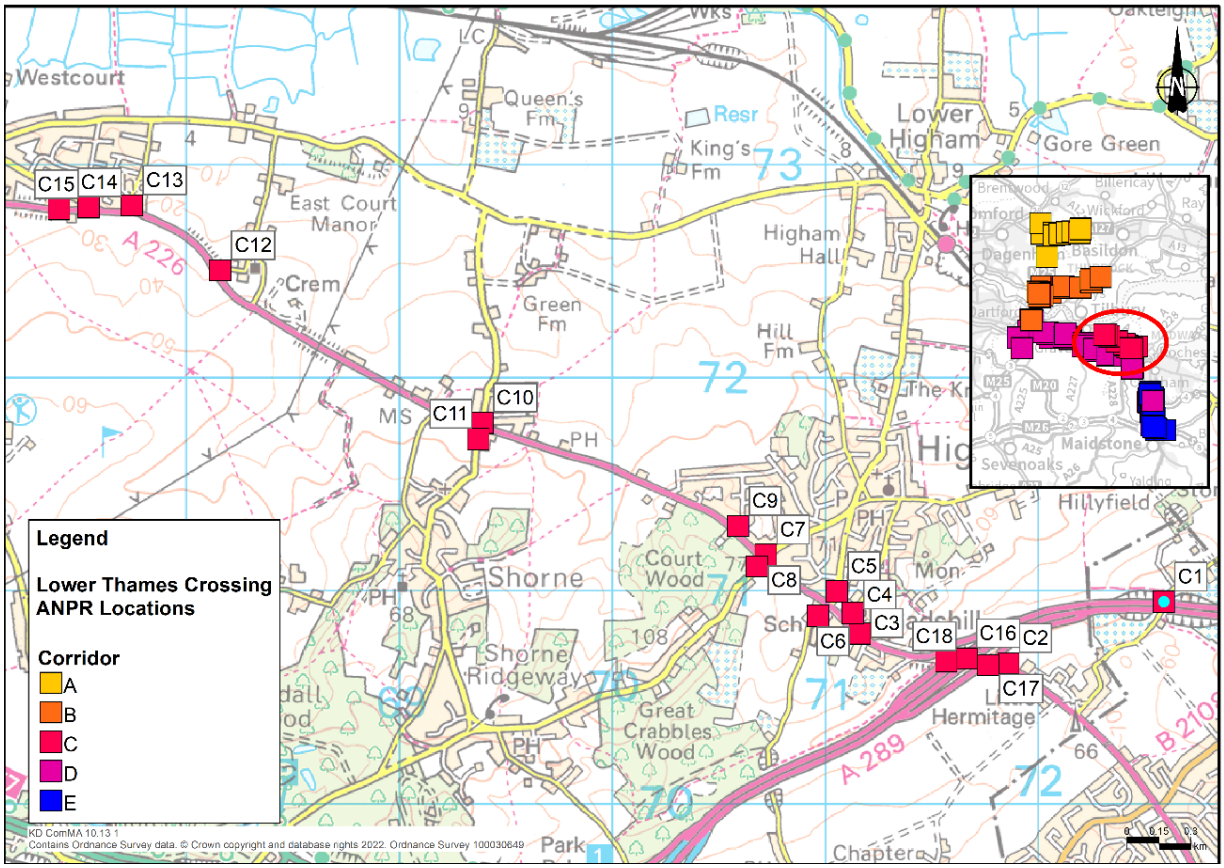


Plate 10.14 Corridor D ANPR Sites

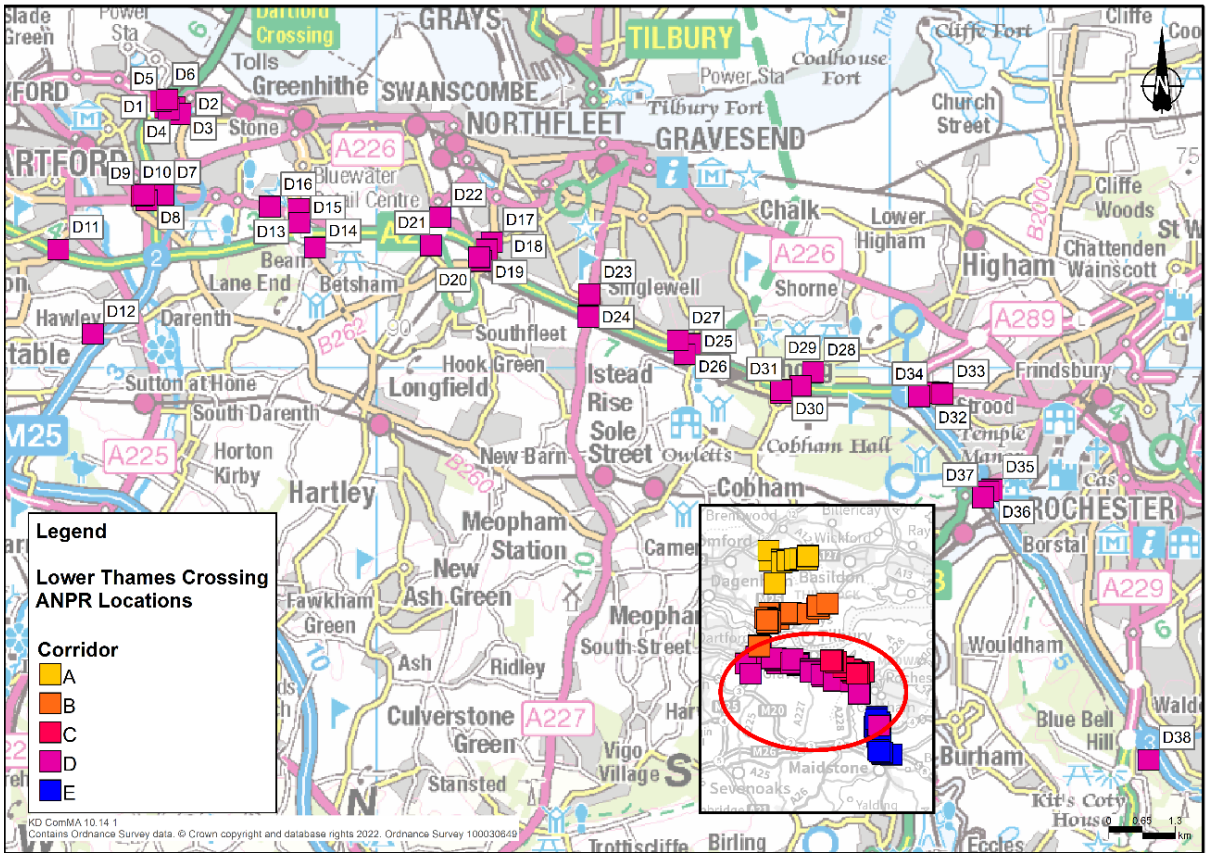
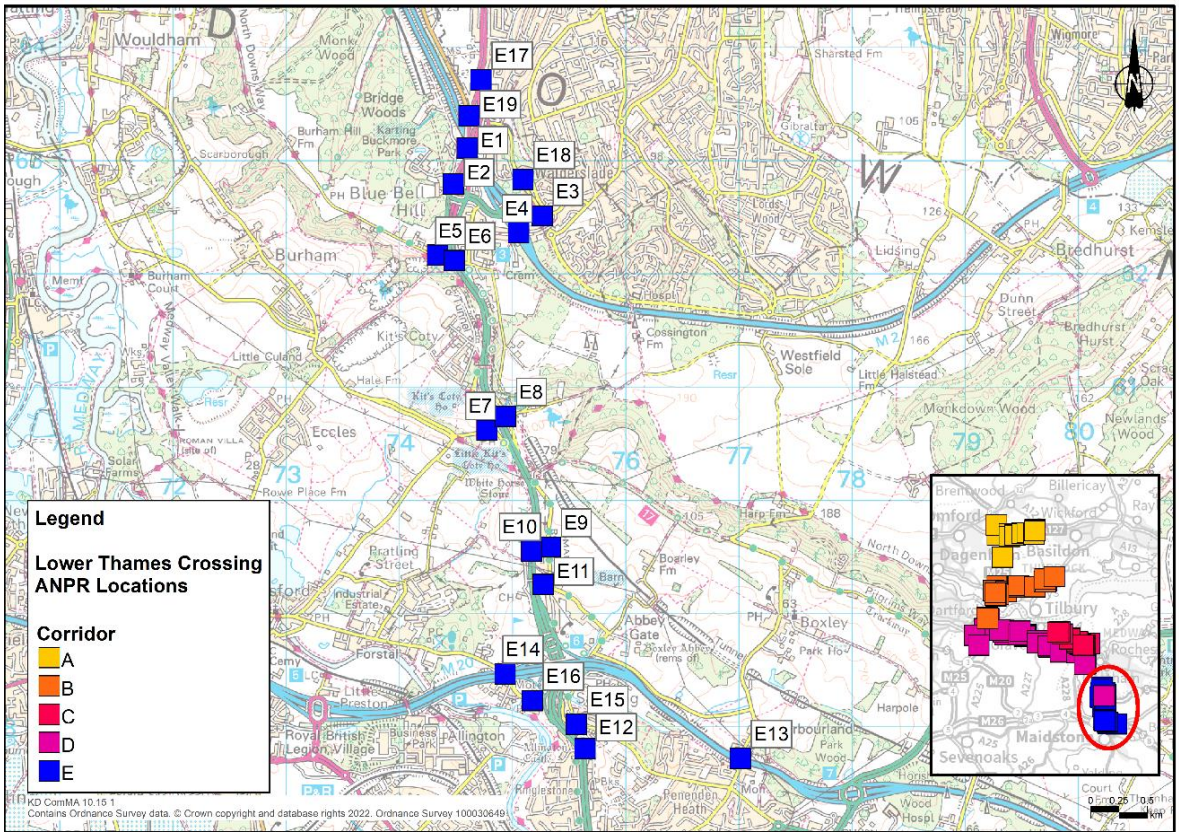


Plate 10.15 Corridor E ANPR Sites



10.6.8 The site locations along with their grid references are given in Table 10.3 to Table 10.7.

Table 10.3 Corridor A ANPR Site Locations

Site No	Road Name	X	Y
A1	A127 - Eastbound/Westbound	557528	188717
A2	M25 - Northbound/Southbound	558364	185105
A3	M25 - Northbound/Southbound	557359	190372
A4	Warley Street (North) -Northbound/Southbound	559476	188908
A5	Warley Street (South) - Northbound/Southbound	559468	188496
A6	Little Warley Hall Lane (North) - Northbound/Southbound	560390	188810
A7	Little Warley Hall Lane (South) - Northbound/Southbound	560454	188704
A8	Childerditch Lane (North) - Northbound/Southbound	561559	189034
A9	Childerditch Lane (South) - Northbound/Southbound	561568	188956
A10	Thorndon Avenue - Northbound/Southbound	562411	189092
A11	A128 (North) - Northbound/Southbound	563720	189595
A12	A128 (South) - Northbound/Southbound	563511	188869
A13	A127 - Eastbound/Westbound	563685	189433

Table 10.4 Corridor B ANPR Site Locations

Site No	Road Name	X	Y
B1	A13/M25 Link - Northbound/Southbound	557534	180411
B2	A13 - Eastbound/Westbound	556872	179591
B3	A126 - Northbound/Southbound	558947	179458
B4	High Road - Eastbound/Westbound	560676	180370
B5	A1012 - Northbound/Southbound	560838	180178
B6	Stifford Clays Road - Northbound/Southbound	560959	180400
B7	A1089 - Northbound/Southbound	563668	180253
B8	A1013 Stanford Road (West) - Eastbound/Westbound	565190	181155
B9	A1013 Stanford Road (East) - Eastbound/Westbound	565513	181242
B10	Brentwood Road (South) - Northbound/Southbound	565392	181104
B11	Brentwood Road (North) - Northbound/Southbound	565335	181516
B12	A13 - Northbound/Southbound	566842	181896
B13	A1306 - Eastbound/Westbound	557651	178997
B14	Stonehouse Lane - Eastbound/Westbound	557275	178706
B15	Arterial Road	557156	178817
B16	Ship Lane	557144	179274
B17	A282 - Northbound/Southbound	555899	175063

Table 10.5 Corridor C ANPR Site Locations

Site No	Road Name	X	Y
C1	A282 Northbound	572589	170947
C2	A206 Crossways Boulevard	571860	170659
C3	Cotton Lane	571163	170798
C4	A282 Southbound	571129	170894
C5	A206 Bob Dunn Way	571055	170996
C6	Unnamed Road	570967	170881
C7	A296 Princes Road	570722	171168
C8	B260 Green Street/Green Road	570680	171113
C9	A296 Princes Road	570591	171302
C10	Park Road	569392	171786
C11	A2	569372	171711
C12	M25 London Orbital Motorway	568162	172502
C13	B225 off-slip	567747	172807
C14	Bean Lane	567544	172797
C15	B255	567405	172788
C16	A296	571665	170681
C17	B262 Hall Road	571766	170650
C18	A2 Watling Street	571569	170667

Table 10.6 Corridor D ANPR Site Locations

Site No	Road Name	X	Y
D1	A282 Northbound	555878	175076
D2	A206 Crossways Boulevard	556058	175083
D3	Cotton Lane	556169	174953
D4	A282 Southbound	555937	175041
D5	A206 Bob Dunn Way	555788	175202
D6	Unnamed Road	555914	175235
D7	A296 Princes Road	555836	173375
D8	B260 Green Street/Green Road	555508	173268
D9	A296 Princes Road	555422	173358
D10	Park Road	555462	173378
D11	A2	553788	172308
D12	M25 London Orbital Motorway	554461	170665
D13	B225 off-slip	558477	173098
D14	Bean Lane	558790	172348
D15	B255	558487	172830

Site No	Road Name	X	Y
D16	A296	557910	173146
D17	B262 Hall Road	562241	172452
D18	A2 Watling Street	562143	172312
D19	New Barn Road	562031	172087
D20	B262 Station Road	561994	172159
D21	Park Corner Road	561050	172393
D22	A2260	561234	172941
D23	Wrotham Road	564147	171434
D24	A227 Wrotham Road	564117	170996
D25	Valley Drive	566107	170471
D26	Henhurst Road	565995	170267
D27	Hever Court Road	565869	170538
D28	Brewers Road	568504	169918
D29	A2	568263	169649
D30	Halfpence Lane	567885	169511
D31	Thong Lane	567881	169571
D32	Old Watling Street - Eastbound/Westbound	570933	169519
D33	A2 Watling Street - Eastbound/Westbound	571029	169497
D34	A2 - Northbound/Southbound	570574	169448
D35	M2 - Northbound/Southbound	571989	167635
D36	A228 Sundridge Hill - Eastbound/Westbound	571920	167595
D37	A228 Sundridge Hill - Eastbound/Westbound	571817	167478
D38	M2 - Eastbound/Westbound	575045	162361

Table 10.7 Corridor E ANPR Locations

Site No	Road Name	X	Y
E1	M2 - Northbound/Southbound	574603	163112
E2	Unnamed Road	574480	162794
E3	A2025 - Eastbound/Westbound	575265	162511
E4	M2 - Northbound/Southbound	575055	162363
E5	A229 Northbound Off-Slip	574341	162165
E6	A229 Northbound/Southbound	574489	162117
E7	Rochester Road - Eastbound/Westbound	574777	160618
E8	Lower Warren Road	574942	160740
E9	A229 Southbound Off Slip/Southbound Old Chatham Road	575339	159586
E10	A229 Northbound On/Southbound Off Slips	575172	159550
E11	A229 Southbound On Slip/Tyland Lane	575275	159255

Site No	Road Name	X	Y
E12	A229 Royal Engineer's Road - Northbound/Southbound	575643	157805
E13	M20 - Eastbound/Southbound	577015	157719
E14	M20 - Northbound/Southbound	574937	158466
E15	Sandling Lane	575568	158021
E16	Forstal Road	575177	158229
E17	A229 Maidstone Road - Northbound/Southbound	574723	163713
E18	Taddington Wood Lane	575095	162834
E19	Rochester Road - Northbound/Southbound	574619	163395

10.7 Traffic signal timing surveys

10.7.1 At each signalised junction surveyed, the survey company were requested to ensure that the traffic signal head was clearly visible. This enabled the green times and cycle times to be recorded.

10.7.2 At some locations additional cameras were required to ensure this information was captured fully.

10.7.3 These surveys were undertaken on the same day as the other surveys at each location.

10.7.4 This data is held electronically with the other video surveys collected.

10.8 Traffic data checks

10.8.1 The volumetric traffic count data was received in Excel spreadsheets. This data was incorporated into traffic flow diagrams.

10.8.2 Once the data was available in a structured form, it was queried for all the survey types to calculate the total vehicle count in 15-minute intervals between 06:00 and 18:45.

10.8.3 The volumetric count data for all the count types was plotted in 15-minute intervals in Excel and a comparison was made between adjacent junctions, wherever possible. This was carried out to determine if there was a difference in the flow profile between adjacent junctions.

10.8.4 The ANPR incoming capture and match rates for each corridor are presented in Table 10.8 to Table 10.12. The match rates were checked to ensure that an acceptable rate of matching occurred to allow for a representative data sample. In all cases below, the capture and match rates are considered acceptable. Where a result in the table is marked N/A, there was no incoming capture or match rate as the ANPR site was either a site internal to the cordon or because the site was on a one-way road.

10.8.5 At the sites with no results, the reason for a lack of data was investigated:

a. Sites A11, C08 and D20 do not have match rates as the vehicle counters failed at these locations, however the ANPR detection was operational.

b. At sites A11 and D20 there are appropriate CJC sites in close proximity which can be used to derive match rates.

c. Whilst there is no appropriate CJC adjacent to site C08, this site is a very minor road and accounts for approximately 1% of captured number plates, therefore this omission is not considered significant.

d. On some of the corridors, the cameras were stolen from site (corridor C in particular). They were replaced before the start of the peak hour, so the peak hours are not affected, but whole day statistics have lower averages than usual.

Table 10.8 Corridor A ANPR Capture Rates

Site	Sample Rate	Match Rate
A01	91%	82%
A02	72%	77%
A03	81%	61%
A04	82%	73%
A05	91%	77%
A06	81%	47%
A07	89%	78%
A08	93%	87%
A09	89%	71%
A10	70%	65%
A11	-	-
A12	88%	50%
A13	91%	79%
Total	82%	71%

Table 10.9 Corridor B ANPR Capture Rates

Site	Sample Rate	Match Rate
B01	67%	71%
B02	90%	81%
B03	88%	80%
B04	95%	85%
B05	90%	89%
B06	90%	85%
B07	78%	63%
B08	85%	79%
B09	86%	69%
B10	91%	85%
B11	91%	82%
B12	92%	83%

Site	Sample Rate	Match Rate
B13	90%	78%
B14	85%	63%
B15	93%	81%
B16	90%	79%
B17	82%	57%
Total	84%	74%

Table 10.10 Corridor C ANPR Capture Rates

Site	Sample Rate	Match Rate
C01	59%	34%
C02	72%	64%
C03	91%	N/A
C04	89%	87%
C05	92%	90%
C06	85%	79%
C07	92%	77%
C08	-	-
C09	65%	60%
C10	89%	83%
C11	90%	80%
C12	91%	83%
C13	89%	87%
C14	87%	75%
C15	94%	86%
C16	71%	N/A
C17	50%	42%
C18	93%	82%
Total	67%	52%

Table 10.11 Corridor D ANPR Capture Rates

Site	Sample Rate	Match Rate
D01	83%	N/A
D02	84%	64%
D03	86%	57%
D04	66%	55%
D05	36%	43%
D06	92%	77%

Site	Sample Rate	Match Rate
D07	88%	78%
D08	87%	63%
D09	90%	69%
D10	89%	71%
D11	88%	78%
D12	81%	79%
D13	76%	71%
D14	80%	44%
D15	55%	78%
D16	84%	48%
D17	92%	86%
D18	64%	N/A
D19	92%	91%
D20	-	-
D21	89%	N/A
D22	66%	49%
D23	78%	60%
D24	70%	83%
D25	92%	82%
D26	92%	87%
D27	88%	85%
D28	89%	65%
D29	82%	N/A
D30	64%	69%
D31	89%	62%
D32	82%	66%
D33	94%	88%
D34	73%	N/A
D35	70%	-N/A
D36	92%	81%
D37	92%	87%
D38	83%	57%
Total	77%	69%

Table 10.12 Corridor E ANPR Capture Rates

Site	Sample Rate	Match Rate
E01	81%	77%
E02	93%	82%
E03	84%	85%
E04	85%	75%
E05	92%	N/A
E06	88%	N/A
E07	91%	85%
E08	66%	57%
E09	95%	N/A
E10	90%	80%
E11	91%	84%
E12	66%	58%
E13	81%	77%
E14	74%	60%
E15	93%	85%
E16	92%	81%
E17	88%	84%
E18	91%	81%
E19	92%	78%
Total	82%	73%

10.9 Port of Tilbury data

10.9.1 As part of assessing the detailed impact of Lower Thames Crossing on the access to the Port of Tilbury, traffic surveys were carried out along the key corridors between the Port and A13.

The requirement for data

10.9.2 The locations and specifications of the data collected is set out in the following paragraphs. The survey specifications for this package included the following:

a. Automatic Traffic Count (ATC);

b. Fully classified turning count (CTC); and

c. Automatic Number Plate Recognition (ANPR) surveys.

Survey schedule

10.9.3 The survey schedule was as follows:

a. The ATC Surveys took place between 00:00-24:00 from Monday 14 May 2018 to Sunday 20 May 2018;

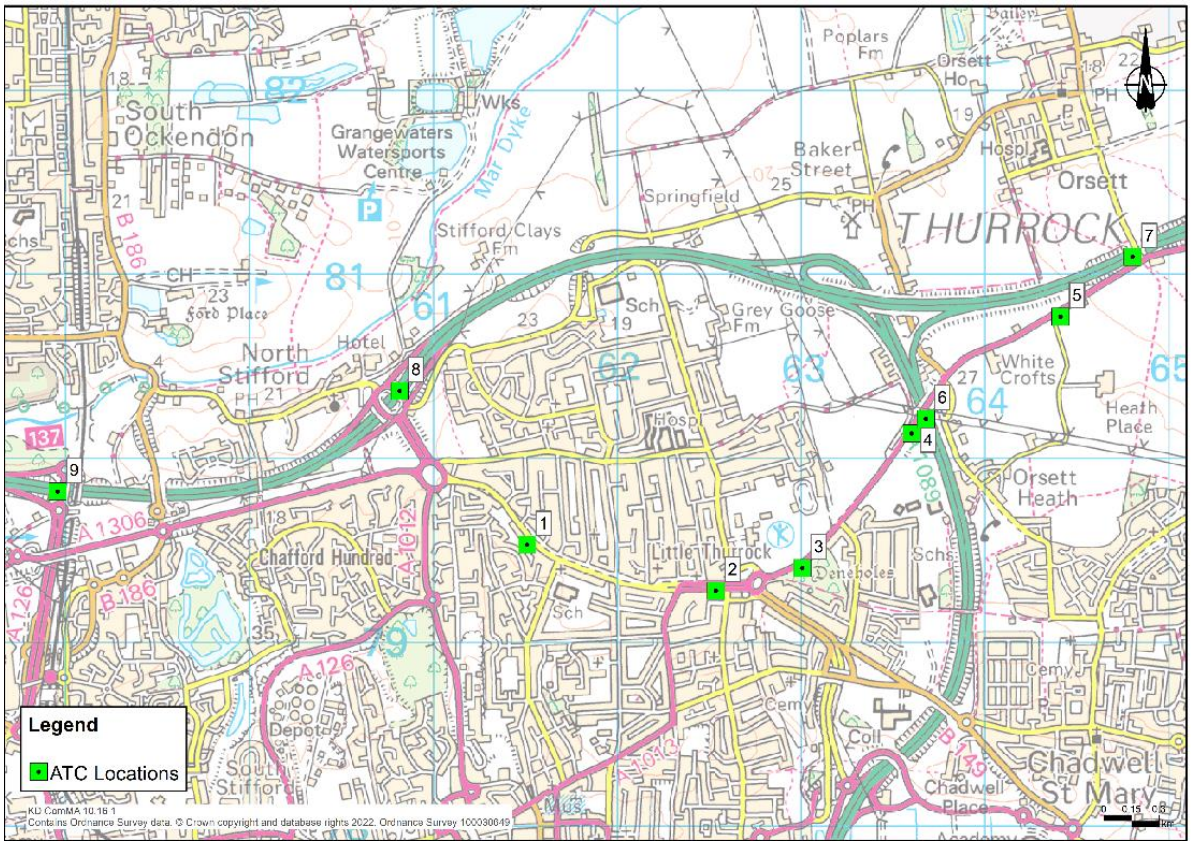
b. The CTC surveys took place on Wednesday 16 May 2018 and Thursday 17 May 2018 between 05:00 and 21:00; and

c. The ANPR surveys were undertaken in two packages. Package 1 surveys were scheduled between Wednesday 16 May 2018 and Sunday 20 May 2018 for 24 hours a day. Package 2 surveys were scheduled between Wednesday 16 May 2018 and Thursday 17 May 2018 between 05:00 and 21:00.

Automatic Traffic Counts

10.9.4 Plate 10.16 shows the location of the ATC data collection sites.

Plate 10.16 Location of ATC sites



10.9.5 Table 10.13 details the coordinates of each ATC data collection site.

Table 10.13 ATC sites

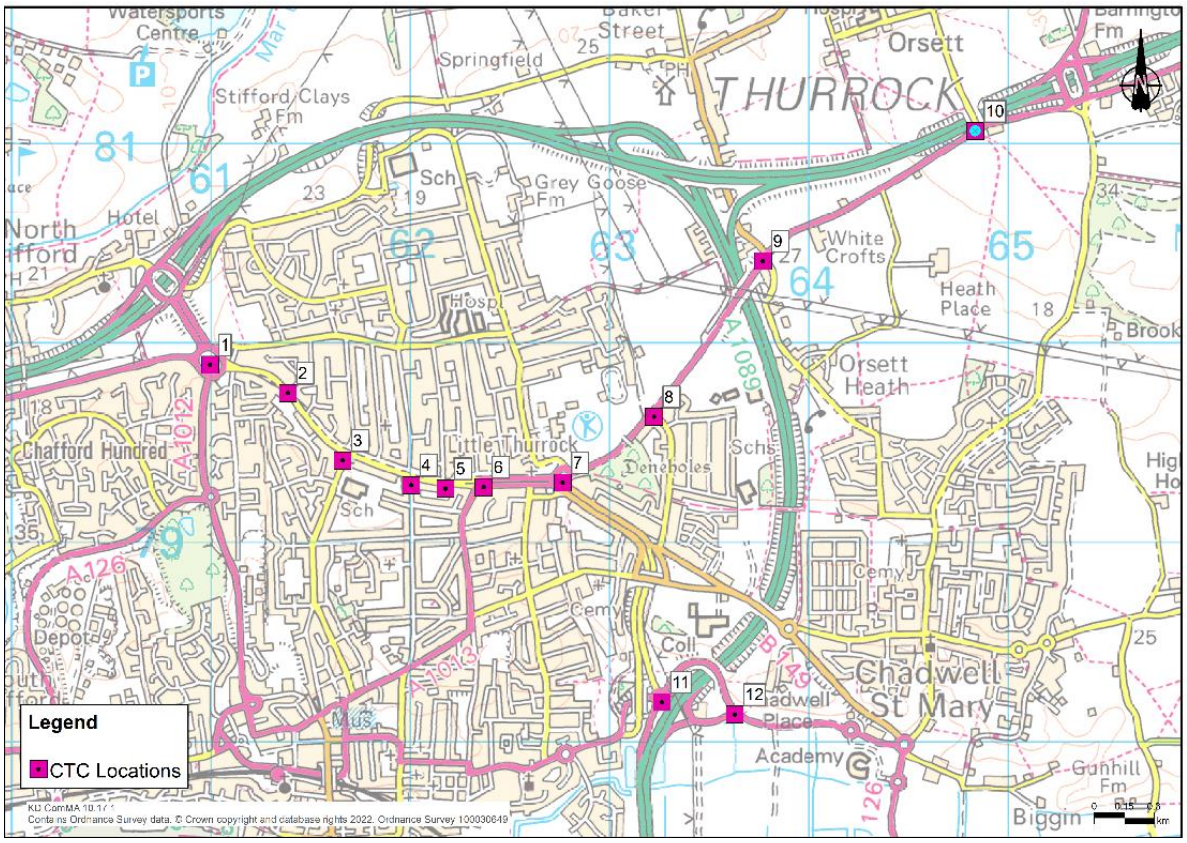
Site Number	Location	X	Y
ATC 1	Lodge Road / Conrad Gardens	561510	179530
ATC 2	Lodge Road / Premier Avenue	562537	179280
ATC 3	A1013 Stanford Road near wood	563006	179403
ATC 4	A1013 Stanford Road near Dock App Road	563601	180135
ATC 5	A1013 Stanford Road / Mill Lane	564410	180770

Site Number	Location	X	Y
ATC 6	A1089 / A1013 Stanford Road	563678	180214
ATC 7	A13 / Rectory Lane (A13 carriageway)	564802	181094
ATC 8	A13 / A1012 (A13 carriageway)	560817	180366
ATC 9	A13 / A126 (A13 carriageway)	558958	179819

Fully Classified Turning Counts

10.9.6 Plate 10.17 shows the location of the CTC data collection sites.

Plate 10.17 CTC Turning Count Sites



10.9.7 Table 10.14 details the coordinates of each CTC data collection site.

Table 10.14 CTC Turning Count Sites

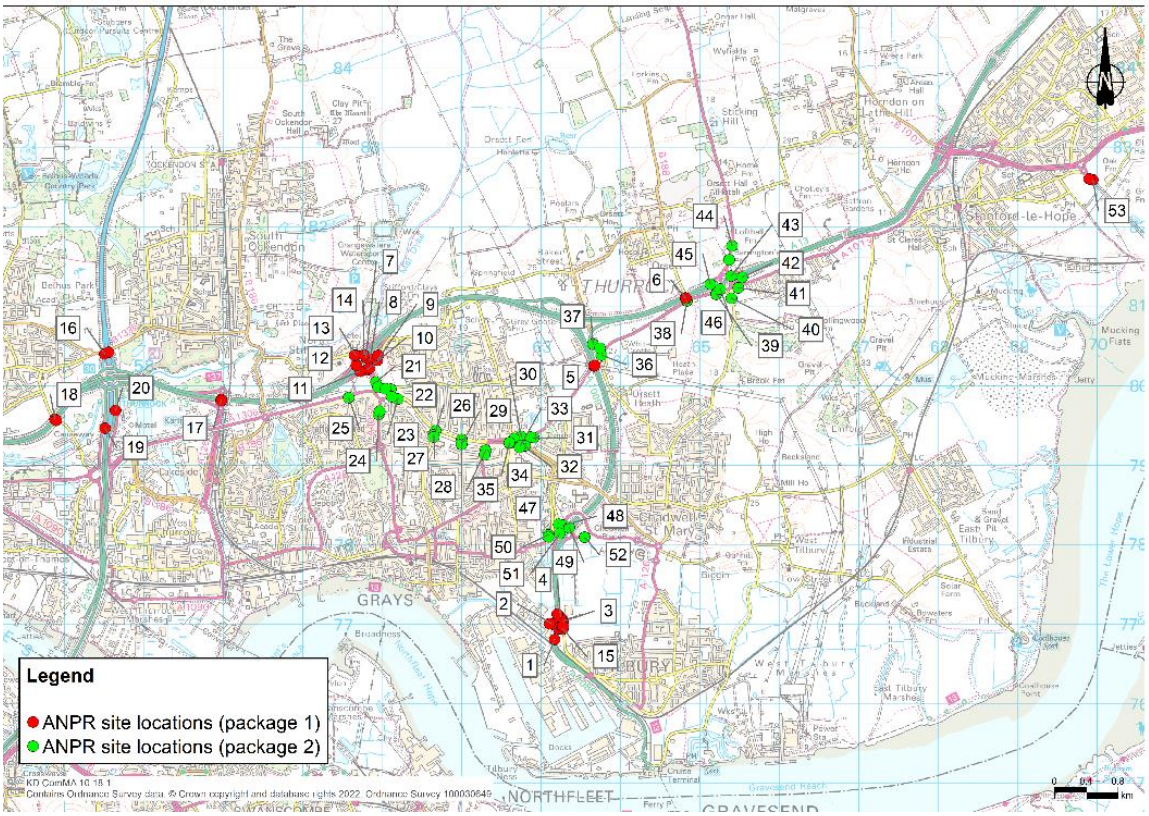
Site Number	Location	X	Y
MCC 1	Lodge Lane / Long Lane / A1012 Elizabeth Road	560994	179892
MCC 2	Lodge Lane / Nutberry Avenue	561385	179749
MCC 3	Lodge Lane / Hathaway Road	561660	179411
MCC 4	Lodge Lane / Connaught Avenue	562003	179287
MCC 5	Lodge Lane / Victoria Avenue	562176	179270
MCC 6	Lodge Road / Southend Road	562366	179277

Site Number	Location	X	Y
MCC 7	A1013 Lodge Road / Blackshots Lane / Wood View	562764	179300
MCC 8	A1013 Stanford Road / King Edward Drive	563222	179630
MCC 9	A1013 Stanford Road / B188 Baker Street / Heath Road	563768	180412
MCC 10	A1013 Stanford Road / Rectory Road	564834	181064
MCC 11	Old Dock Approach Road / Marshfoot Road	563261	178198
MCC 12	Marshfoot Road / Slip Road	563627	178136

Automatic Number Plate Recognition Surveys

10.9.8 Plate 10.18 shows the location of the ANPR data collection sites.

Plate 10.18 ANPR Site Locations



10.9.9 Table 10.15 details the coordinates of each ANPR data collection site for Package 1.

Table 10.15 Package 1 ANPR Site Coordinates

Site Number	Location	X	Y
ANPR 1A	St Andrew's Road - NB	563171	176810
ANPR 1B	St Andrew's Road - SB	563222	176947

Site Number	Location	X	Y
ANPR 2A	Thurrock Park Way - WB	563139	177005
ANPR 2B	Thurrock Park Way - EB	563105	177011
ANPR 3A	Unnamed Road	563282	177045
ANPR 3B	Tilbury - EB	563273	177028
ANPR 4A	Dock Road - SB	563243	177093
ANPR 4B	Dock Road - NB	563205	177130
ANPR 5A	Dock Approach Road NB	563667	180248
ANPR 5B	Dock Approach Road SB	563675	180257
ANPR 6A	A13 EB	564816	181107
ANPR 6B	A13 - WB	564821	181099
ANPR 7A	A13 - EB	560798	180355
ANPR 7B	A13 - WB	560812	180345
ANPR 8	Unnamed Road - WB	560849	180334
ANPR 9A	Stifford Clays Road - WB	560941	180321
ANPR 9B	Stifford Clays Road - EB	560950	180382
ANPR 10A	A1012 - NB	560806	180197
ANPR 10B	A1012 - SB	560839	180218
ANPR 11	Chafford Hundred - WB	560722	180184
ANPR 12	Unnamed Road - EB	560677	180257
ANPR 13A	High Road - SB	560668	180386
ANPR 13B	High Road - NB	560655	180382
ANPR 14	North Stifford - NB	560775	180388
ANPR 15A	Dock Road - NB	563274	176943
ANPR 15B	Dock Road - SB	563276	176974
ANPR 16A	Mar Dyke Interchange (N) - NB	557512	180402
ANPR 16B	Mar Dyke Interchange (N) - SB	557557	180421
ANPR 17A	A13 - EB	558979	179827
ANPR 17B	A13 - WB	558978	179811
ANPR 18A	A13 - EB	556885	179580
ANPR 18B	A13 - WB	556902	179565
ANPR 19	Mar Dyke Interchange (S) - NB	557515	179466
ANPR 20	Mar Dyke Interchange (S) - SB	557647	179692
ANPR 53A	Unnamed Road - SB	569939	182589
ANPR 53B	Unnamed Road - WB	569896	182602

10.9.10 Table 10.16 details the coordinates of each ANPR data collection site for Package 2.

Table 10.16 Package 2 ANPR Site Coordinates

Site Number	Location	X	Y
ANPR 21A	A1012 (SB)	560924	180046
ANPR 21B	A1012 (NB)	560949	179982
ANPR 22A	Long Lane (WB)	561110	179958
ANPR 22B	Long Lane (EB)	561044	179962
ANPR 23A	Lodge Lane (WB)	561201	179834
ANPR 23B	Lodge Lane (EB)	561121	179863
ANPR 24A	Elizabeth Road (NB)	560956	179639
ANPR 24B	Elizabeth Road (SB)	560971	179682
ANPR 25A	A1306 (EB)	560580	179852
ANPR 25B	A1306 (WB)	560580	179852
ANPR 26A	Windsor Avenue (NB)	561674	179435
ANPR 26B	Windsor Avenue (SB)	561674	179435
ANPR 27A	Hathaway Road (NB)	561650	179384
ANPR 27B	Hathaway Road (SB)	561649	179357
ANPR 28A	Connaught Avenue (NB)	562002	179326
ANPR 28B	Connaught Avenue (SB)	562006	179298
ANPR 29A	Bradleigh Avenue (NB)	562000	179265
ANPR 29B	Bradleigh Avenue (SB)	562000	179265
ANPR 30A	Blackshots Lane (SB)	562750	179364
ANPR 30B	Blackshots Lane (NB)	562661	179335
ANPR 31A	A1013 (WB)	562905	179347
ANPR 31B	A1013 (EB)	562870	179356
ANPR 32A	B149 Wood View	562793	179245
ANPR 32B	B149 Wood View	562797	179246
ANPR 33A	Rectory Road (NB)	562742	179249
ANPR 33B	Rectory Road (SB)	562731	179226
ANPR 34A	A1013 Lodge Lane	562602	179279
ANPR 34B	A1013 Lodge Lane	562601	179287
ANPR 35A	A1013 Southend Road	562303	179190
ANPR 35B	A1013 Southend Road (SB)	562289	179133
ANPR 36A	Heath Road	563760	180384
ANPR 36B	Heath Road	563760	180384
ANPR 37A	B188 Baker Street	563655	180524
ANPR 37B	B188 Baker Street	563740	180473
ANPR 38A	Rectory Road (NB)	564834	181068
ANPR 38B	Rectory Road (SB)	564834	181068

Site Number	Location	X	Y
ANPR 39A	A1013 (EB)	565202	181157
ANPR 39B	A1013 (WB)	565204	181150
ANPR 40A	Brentwood Road (NB)	565395	181101
ANPR 40B	Brentwood Road (SB)	565395	181101
ANPR 41A	A1013 (WB)	565480	181233
ANPR 41B	A1013 (EB)	565481	181233
ANPR 42	A13 Sleep Road (WB)	565530	181365
ANPR 43	A13 Sleep Road (EB)	565389	181379
ANPR 44A	Brentwood Road (NB)	565403	181761
ANPR 44B	Brentwood Road (SB)	565368	181586
ANPR 45	A13 Sleep Road (EB)	565128	181279
ANPR 46	A13 Sleep Road (WB)	565253	181218
ANPR 47A	Old Dock Approach Road (SB)	563228	178259
ANPR 47B	Old Dock Approach Road (SB)	563222	178256
ANPR 48A	A126 (SB)	563282	178248
ANPR 48B	A126 (NB)	563282	178248
ANPR 49	A1089 Sleep Road (NB)	563354	178218
ANPR 50A	A126 (EB)	563091	178127
ANPR 50B	A126 (WB)	563092	178102
ANPR 51	A1089 Sleep Road (NB)	563235	178144
ANPR 52A	A126 (EB)	563548	178097
ANPR 52B	A126 (WB)	563548	178097

List of incidents during the survey

10.9.11 Several incidents impacted the traffic surveys. The detailed list of events was:

a. ANPR Site 1: Southbound data was missing between 14:00 and 16:30 on 20 May due to camera failure.

b. ANPR Site 6: One of the two eastbound cameras failed, as a result the sample rate was lower between 00:00 and 07:30 on 16 May. The sample rate was also lower between 10:30 and 13:30 on 19 May for the same reason.

c. ANPR Site 7: One of two cameras in the westbound direction failed causing a lower sample rate between 04:00 and 06:30 on 17 May.

d. ANPR Site 14: Data was missing between 07:45 and 10:30 on 20 May in both directions due to camera failure.

e. ANPR Site 16: Northbound data was missing between 15:30 and 17:30 on 20 May due to a battery failure.

f. ANPR Site 18: All four cameras were vandalised due to which data between 13:00 and 15:00 on 17 May was lost.

g. ANPR Site 19: Data was missing between 22:30 on 19 and 08:00 on 20 May due to delayed battery change. This was due to human error.

h. ANPR Site 20: Data was missing between 23:30 on 19 and 08:00 on 20 May due to a delayed battery change. This was due to human error.

i. ANPR Site 29: Southbound data was missing between 13:00 and 14:00 on 17 May due to camera failure.

j. ANPR Site 41: The ANPR camera had difficulties picking up plates between 13:00 and 18:30 on 17 May due to glare from the sun reflecting off the road which resulted in a low sample rate.

k. ANPR Site 45: Due to camera failure, data was unavailable for between 05:00 – 05:30 and 18:45 – 21:00 on 17 May.

l. ANPR Site 53: Both cameras were setup on a private road and so were re-located and any data collected prior to removal was deleted. Due to this incident there is no available data prior to 18:00 on 16 May.

m. MCC Site 7: One of the cameras was stolen prior to the start of the survey period, although it was replaced before data collection commenced. In addition, the site was vandalised and so no data was available between 14 – 16 May.

n. MCC Site 2: A camera was vandalised due to which footage between on 16 and 17 May was lost. Data from 18 – 24 May was collected instead.

o. MCC site 10: A camera suffered footage loss between 05:00 and 07:46 on 16 May due to a faulty recording box.

p. All four ATC units did not record between 17:00 on Sunday 20 May and 15:00 on Tuesday 22 May due to human error.

10.9.12 With respect to the ANPR surveys, data for 17 May was nearly intact at peak times and as such was identified as the most representative day to be used for analysis.

10.9.13 With respect to the other survey types, remediation was undertaken at a number of locations as listed, otherwise it was decided that the data that was collected was acceptable.

ANPR Survey Match Rate

10.9.14 On Thursday 17 May 2018, the match rate of the ANPR survey with the video camera count was considered excellent, typically with a 90% capture rate or above.

10.10 2019 data collection

10.10.1 A further series of counts were undertaken to support work in the areas of non-motorised users and to assist with work undertaken by the environment team.

10.10.2 The surveys were undertaken by Nationwide Data Collection. The following survey types were commissioned:

a. Automatic Traffic Count (ATC)

b. Fully classified turning count (CTC)

c. Pedestrian Counts

d. Automatic Number Plate Recognition (ANPR).

Survey Schedule

10.10.3 The surveys took place in two sub-packages due to the different approval processes required by Essex and Kent County Councils, as well as for practical reasons of equipment availability. The survey schedule was as follows:

a. Essex

i. The ATC surveys took place from 00:00-24:00 between Monday 13 May 2019 and Sunday 19 May 2019

ii. The CTC surveys and the pedestrian surveys took place between 06:00 and 10:00 and between 15:00 and 19:00 on Thursday 16 May 2019 and from 10:00 to 16:00 on Saturday 15 June 2019.

b. Kent

i. The ATC Surveys took place from 00:00-24:00 between Monday 10 June 2019 and Sunday 16 June 2019; and

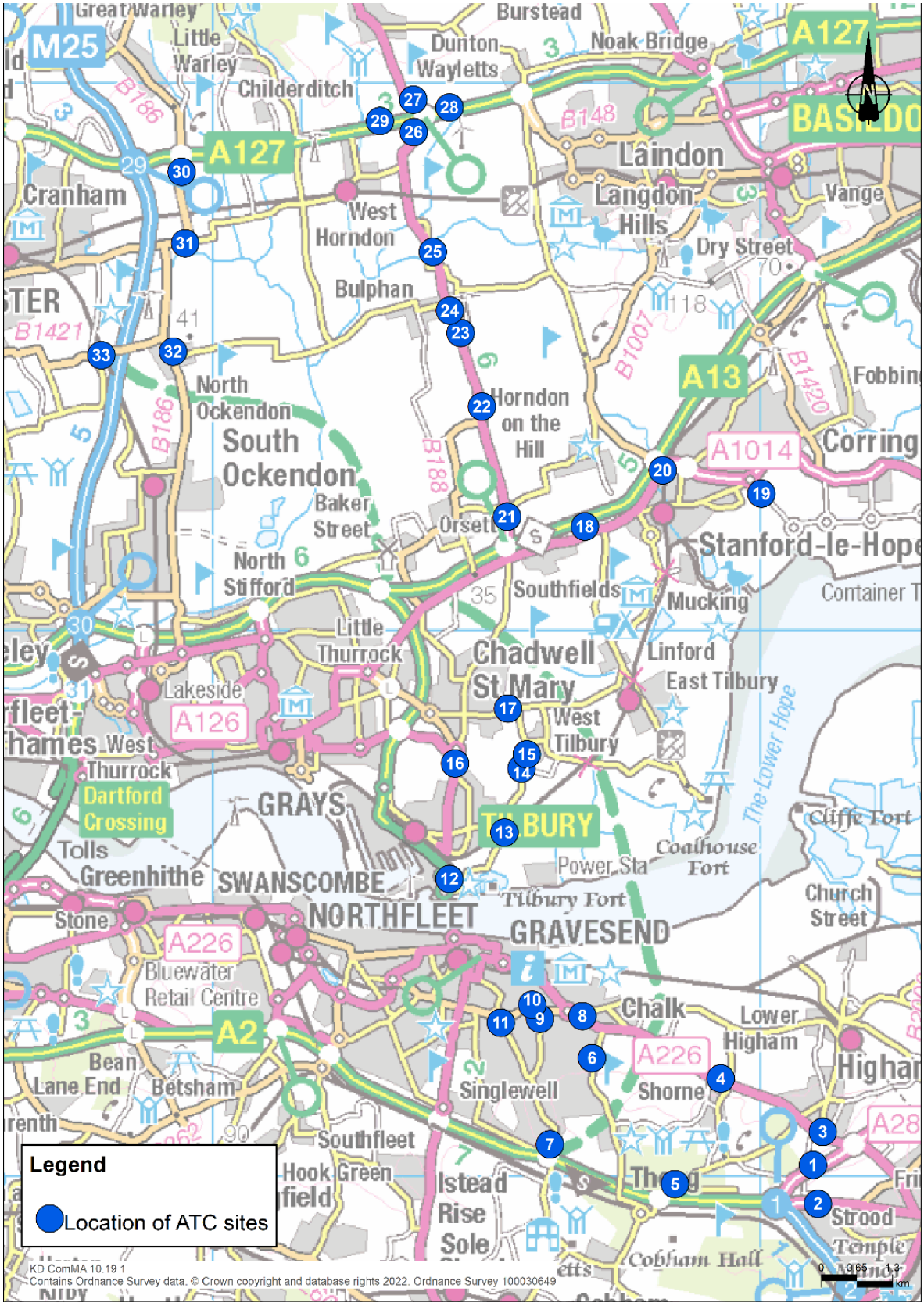
ii. The CTC surveys and the pedestrian surveys took place between 06:00 and 10:00 and between 15:00 and 19:00 on Wednesday 12 June 2019 and from 10:00 to 16:00 on Saturday 18 May 2019.

10.10.4 The ANPR survey took place from 00:00-24:00 between Wednesday 12 July 2019 to Tuesday 18 July 2019.

Automatic Traffic Counts

10.10.5 Plate 10.19 shows the location of the ATC data collection sites.

Plate 10.19 2019 ATC sites



10.10.6 Table 10.17 details the coordinates of each ATC data collection site.

Table 10.17 Proposed ATC sites

ID	Site	X	Y
1	A289	570965	170207
2	A2-Watling Street	571055	169498
3	A226/Gravesend Road East	571145	170814
4	A226/Gravesend Road West	569277	171789
5	Brewers Road	568442	169857
6	Thong Lane	566925	172161
7	Valley Drive South	566158	170586
8	A226/Rochester Road	566752	172932
9	Valley Drive North	565975	172880
10	B261	565832	173136
11	Whitehill Road	565260	172807
12	A1089/Ferry Road	564322	175440
13	Fort Road South	565326	176289
14	Ford Road North	565639	177461
15	Gun Hill	565734	177720
16	A126	564424	177554
17	Linford Road	565389	178559
18	A13-Stanford-le-Hope Bypass	566794	181885
19	Unnamed Road	570020	182485
20	A1014/The Manorway	568216	182913
21	A128/Brentwood Road	565373	182063
22	A128 Brentwood Road South	564913	184078
23	A128 Brentwood Road North	564526	185424
24	A128 Bulphan By-Pass	564330	185834
25	A128 Bulphan By-Pass	564015	186908
26	A128 Tilbury Road	563668	189097
27	A128	563659	189689
28	A127 Southend Arterial Road East	564320	189548
29	A127 Southend Arterial Road West	563049	189300
30	B186 Warley Street	559425	188370
31	B187 St. Marys Lane	559492	187065
32	B186 Ockendon Road	559270	185081
33	B1421 Ockendon Road	557957	185017

Fully Classified Turning Counts

10.10.7 Plate 10.20 shows the location of the CTC data collection sites, with pedestrian counts shown in yellow.

Plate 10.20 Classified Junction and Pedestrian Count locations

10.10.8 Table 10.18 and Table 10.19 detail the coordinates of each CTC data collection site.

Table 10.18 CTC Turning Count Sites and Coordinates for weekdays

ID	Site	X	Y
1	Rochester roundabout	570952	169493
2	Brewers Road/A2 slip roads junction	568399	169816
3	A226/Peartree Lane junction	570706	171143
4	A289/A226 West roundabout	571575	170703
5	A289/A226 East roundabout	571784	170678
6	Gravesend East roundabout - Nell's Cafe	566076	170430
7	Gravesend East roundabout - Hever Court Road	565941	170475
8	Gravesend East junction - Henhurst Road	565923	170343
9	A1089/Fort Road roundabout	564341	175197
10	Maritime Railport Tilbury roundabout	564299	175318
11	Fort Road roundabout	564562	175283
12	Fort Road/Brennan Road junction	565349	176485
13	Ockendon Road/Pea Lane junction	558004	185025
14	Ockendon Road/Pike Lane junction	557884	185029
15	B186/St.Marys Lane junction	559663	187114
16	B186/B187 roundabout	559182	187077
17	B186/Ockendon Road junction	559168	185326
18	B186/West Road roundabout	559447	182961
19	A226/Thong Lane junction	567103	172818
20	Old Road E/Whitehill Road roundabout	565194	172965
21	Lion roundabout	566493	173092
22	Valley Drive/Whitehill Lane	565766	171686
23	Old Road E/Valley Drive junction	566042	173071
24	A226/Forge Lane junction	569383	171758
25	Brewers Road/Thong Lane roundabout	567918	169549
26	The Manorway roundabout	568036	182928
27	A1014/DP World roundabout	569832	182710
28	B186/A127 North junction	559494	188767
29	B186/A127 South junction	559497	188604
30	A126/B149 roundabout	564473	177962
31	St. Chads Road roundabout	564441	177794
32	Linford Road/Turnpike Lane junction	565596	178602
33	Fort Road/Gun Hill junction	565729	177498

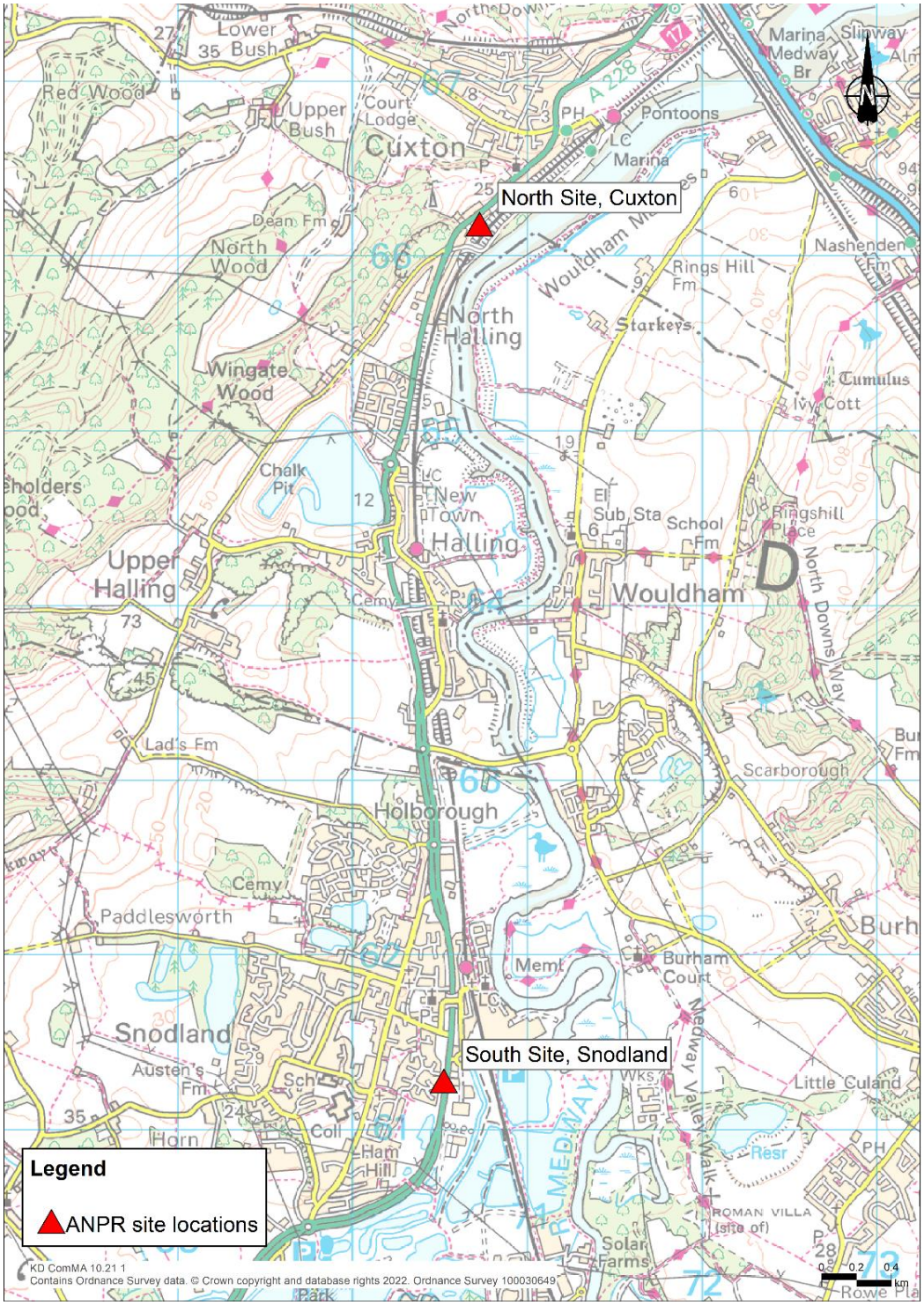
Table 10.19 CTC Turning Count Sites and Coordinates for weekday and weekend (Saturday)

ID	Site	X	Y
21	Lion roundabout	566493	173092
22	Valley Drive/Whitehill Lane	565766	171686
23	Old Road E/Valley Drive junction	566042	173071
24	A226/Forge Lane junction	569383	171758
25	Brewers Road/Thong Lane roundabout	567918	169549
26	The Manorway roundabout	568036	182928
27	A1014/DP World roundabout	569832	182710
28	B186/A127 North junction	559494	188767
29	B186/A127 South junction	559497	188604

Automatic Number Plate Recognition Surveys

10.10.9 Plate 10.21 shows the location of the ANPR data collection sites.

Plate 10.21 ANPR Site Locations



10.10.10 Table 10.20 details the coordinates of each ANPR data collection site.

Table 10.20 ANPR Site Coordinates

ID	Site	X	Y
1	North Site, Cuxton	570728	166183
2	South Site, Snodland	570523	161279

List of incidents during the surveys

10.10.11 Several incidents impacted the surveys. The detailed list of events was:

a. Due to a closure (48 weeks) on Fort Road for the Tilbury2 works which would have an impact on Fort Road, the A1089, Muckingford Road and Ferry Road traffic movements, the junction surveys specified in the original brief at sites 9, 10, 11, 12, 30, 31, 32 & 33 were removed from the programme. For the same reason the 7-day ATC link counts at sites 9, 10, 11 & 12 were also cancelled.

b. Site A19 (Un-named Road) in Essex

This road is privately owned, and a request was received to remove the ATC, so no data was provided for this location.

c. Site 23, Old Road E/Valley Drive junction in Kent

On the original survey date there was a temporary road closure put in place by the police between 10:00 and 10:45. To record data for the period of the survey impacted by the above closure the survey was repeated on Saturday 22 June 2019.

10.10.12 It was considered that given the nature of the incidents above, the data collected was suitable.

10.11 Summary

10.11.1 This chapter has set out additional traffic data collected to support the development of a Lower Thames Crossing.

10.11.2 Details of the data collection for ANPR, CLC, CJC and QLS surveys which were undertaken in October and November 2016 was provided.

10.11.3 Details of the data collection at the Tilbury Port access area was also provided, together with the ATC, CLC and ANPR surveys undertaken in May 2018.

10.11.4 Details of further data collection in 2019 have also been set out.

11 Data storage and outputs to model development

11.1 Introduction

11.1.1 This chapter sets out how the data processed in support of the LTAM was stored and how outputs are provided to other teams within the Project.

11.2 Count database

11.2.1 A count database was prepared in Excel which contains details of 1,399 survey locations and includes information for each row such as:

a. survey location information (including a unique site ID, Easting and Northing, corresponding A Node and B Node, site direction and corresponding LTAM screenline/cordon)

b. survey information (including survey dates, the count sources and the original ID)

c. ATC and CLC data for each survey location

d. flows in the AM, Inter-Peak and PM peak periods, split by:

   i. cars

   ii. LGVs

   iii. HGVs.

11.2.2 In addition, for each survey location a single Excel file has been prepared which contains the following information:

a. Count information

b. Confidence Interval test results

c. Raw data

d. Data formatted to a standardised template

e. Data analysis, including flow profiles

f. Factors for vehicle composition.

11.3 Trip database

11.3.1 Trip data was received in a range of different formats as defined in Table 11.1.

Table 11.1 Trip Record Data Formats

Data Source	Data Format
SERTM Demand Matrices	SATURN Binary Matrix Format (.UFM)
Provisional Mobile Phone Data	Comma Separated Variable File (.CSV)
Census Journey to Work	MS Excel Spreadsheet Tables (.XLSX)
Teletrac OD	Comma Separated Variable (.TXT)
National Travel Survey	Space Delimited Text File (.TAB)

11.3.2 During processing the data was converted into MS Access database format.

11.3.3 Outputs to the highway model development are in SATURN .UFM Binary Matrix Format.

11.3.4 Outputs to the variable demand model development are in Comma Separated Variable format .CSV.

11.4 Journey time database

11.4.1 The journey time data used for the validation of the LTAM is a combination of individual journey time records (Teletrac JTDB) and GIS data (Integrated Transport Network ITN) which provides the spatial component of the data. The different formats are shown in Table 11.2.

Table 11.2 Journey Time Database Data Formats

Data Source	Data Format
Teletrac JTDB	Comma Separated Variable (.CSV)
Integrated Transport Network (ITN)	ESRI Shape File (.SHP)

11.4.2 The individual journey time routes are specified as a series of ITN links which is achieved using GIS and PostgreSQL/PostGIS. The PostGIS tool utilises a Dijkstra with Turn Bans algorithm which checks the completeness of the identified routes and ensures that there are no gaps or links in the wrong direction. This process also sorts the ITN links into ordered lists starting at one end of the route and finishing at the other.

11.4.3 In order to isolate these links from the full .CSV dataset a Python script was used to select the data for the relevant links. This reduces the size of the dataset to approximately 1/10 of its original size.

11.4.4 In line with the method adopted in the development of the Regional Traffic Models, the data was processed and the median (50th percentile) journey time on each link was calculated. Links where median speed is greater than the maximum speed for that vehicle class were set to the maximum speed for that vehicle class.

11.4.5 Once the data was processed it was aggregated into the required time periods and vehicle type classifications for use in model validation. Where data was not available for a particular vehicle class for a particular time period, relationships between observed speeds by different vehicle classes were used to infill the missing data.

11.4.6 Correspondence between the ITN link set for each journey time route and the SATURN highway assignment model network was defined using the Joyride facility within SATURN. Locations that are consistent between the ITN and SATURN network were selected as appropriate intermediate timing points.

11.5 Summary

11.5.1 This chapter has set out how data processed in support of the LTAM is stored:

a. A count database providing detailed information of 1,399 survey locations

b. An access database containing the various trip record data

c. A journey time database for the identified routes, with significant post processing undertaken to reduce the size of the data, ensure its suitability and that it corresponds with the ITN.

12 Conclusions

12.1.1 This Traffic Data Package sets out the work undertaken to collect, process and analyse data to support the development of the LTAM and operational data collection.

12.1.2 The TDP sets out the following for the LTAM strategic modelling:

a. A total of 1,237 survey locations selected to enable the calibration and validation of the model on the 20 screenlines and cordons that have been developed

b. Trip data sourced from the South East Regional Traffic Model used as the primary source for developing the LTAM matrices. This was supported by additional trip record data for verification purposes

c. Journey Time Data sourced from the Teletrac Journey Time Database. A set of 72 journey time routes were defined.

12.1.3 For the operational assessments, a range of ATC, ANPR, CLC, CJC and traffic signal data were collected.

12.1.4 Overall, it is considered that the data collected and processed are suitable and sufficiently robust to be used for the development, calibration and validation of the LTAM and operational assessments.

References

Department for Transport (2013) – Review of Lower Thames Crossing Options: Final Review Report https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/210625/final-review-report.pdf

Department for Transport (2020) – Traffic Count Database https://roadtraffic.dft.gov.uk [Accessed May 2016]

Department for Transport (2020a) – National Travel Survey https://www.gov.uk/government/collections/national-travel-survey-statistics [Accessed June 2015]

Department for Transport (2020b) - TAG unit M1-2 data sources and surveys https://www.gov.uk/government/publications/webtag-tag-unit-m1-2-data-sources-and-surveys

Highways England (2014) – Road Investment Strategy: 2015 to 2020 https://www.gov.uk/government/collections/road-investment-strategy

Highways England (2020) – WebTRIS [redacted]

Highways England (2020a) – TRIS Journey Time Database [redacted] [Accessed 2016]

Glossary

Term	Abbreviation	Explanation
Annual Average Daily Traffic	AADT	An estimate of the average daily traffic along a defined segment of roadway. This value is calculated from short-term counts taken along the same section, which are then factored to produce the estimate of AADT. Because of this process, the most recent AADT for any given roadway will always be for the previous year.
Average Weekday Traffic	AWT	
Benefit Cost Ratio	BCR	The ratio of benefits to costs
Design Freeze 3	DF3	
Department for Transport	DfT	
Do Minimum	DM	Do Minimum in reference to the term “Without Scheme” used in previous LTC documentation
Design Manual for Roads and Bridges	DMRB	A comprehensive manual which contains requirements, advice and other published documents relating to works on motorway and all-purpose trunk roads for which one of the Overseeing Organisations (National Highways, Transport Scotland, the Welsh Government or the Department for Regional Development (Northern Ireland)) is the highway authority. For the A122 Lower Thames Crossing, the Overseeing Organisation is National Highways.
Do Something	DS	A future year scenario in LTAM which includes changes to the road network and planned development that is forecast to go ahead, and the Lower Thames Crossing.
Do Something Eastern Southern Link	DS ESL	
Do Something Western Southern Link	DS WSL	
Lower Thames Area Model	LTAM	
Lower Thames Crossing	LTC	
October	Oct	
Off-peak period	OP	The hours between 18:00-06:00 within the Project traffic model (LTAM).
Passenger car unit	PCU	Passenger car unit - A metric to allow different vehicle types within a traffic model to be assessed in a consistent manner.

Term	Abbreviation	Explanation
PostGIS		A GIS software package
PostgreSQL		A SQL database software package
Road Investment Strategy	RIS	
Transport Analysis Guidance	TAG	Transport Analysis Guidance published by DfT
Transport for London	TfL	Transport for London - The integrated body responsible for London's transport system
Vehicles	Veh	

Annexes

Annex A Existing volumetric data

A.1.1 This Annex provides the details of the existing count data collected for use in developing the LTAM from the range of sources as specified in the tables.

Table A.1 TRIS count locations used in the LTAM development

TRIS ref	Site description	Dates used	Easting	Northing
30013021	A2 westbound between A258 and A256 near Whitfield (east)	29/02/16 - 20/03/16	632533	144099
30013022	A2 eastbound between A256 near Whitfield (east) and A258	29/02/16 - 20/03/16	632538	144102
30013023	A2 westbound within the A256 near Whitfield (east) junction	29/02/16 - 20/03/16	631327	144596
30013024	A2 westbound access from A256 near Whitfield (east)	29/02/16 - 20/03/16	631326	144575
30013026	A2 eastbound exit for A256 near Whitfield (east)	29/02/16 - 20/03/16	631181	144644
30013027	A2 westbound between A256 near Whitfield (west) and A260	05/10/15 - 25/10/15	626126	146454
30013028	A2 eastbound between A260 and A256 near Whitfield (west)	05/10/15 - 25/10/15	626126	146459
30013029	M2 westbound between junction 2 and junction 1	29/02/16 - 20/03/16	570137	169561
30013030	M2 junction 1 westbound exit	29/02/16 - 20/03/16	570139	169489
30013034	A20 eastbound between B2011 and A256 near Dover (west)	29/02/16 - 20/03/16	630111	139671
30013035	A20 westbound between A256 near Dover (west) and B2011	29/02/16 - 20/03/16	627893	138979
30013037	A20 eastbound between A256 near Dover (east) and A2	29/02/16 - 20/03/16	632612	141480
30013038	A21 northbound access from A26 near Tonbridge (east)	29/02/16 - 20/03/16	559653	144759
30013039	A21 northbound exit for A26 near Tonbridge (east)	29/02/16 - 20/03/16	559649	144760
30013040	A21 southbound access from A26 near Tonbridge (east)	29/02/16 - 20/03/16	559903	144816
30013054	A21 southbound within the A26 near Tonbridge (east) junction	29/02/16 - 20/03/16	559476	144872
30013055	A21 southbound exit for A26 near Tonbridge (east)	29/02/16 - 20/03/16	559476	144887
30013056	A21 southbound between A26 near Tonbridge (west) and A26 near Tonbridge (east)	29/02/16 - 20/03/16	558154	144994

TRIS ref	Site description	Dates used	Easting	Northing
30013057	A21 southbound exit for A26 near Tonbridge (west)	29/02/16 - 20/03/16	558156	145014
30013058	A21 northbound access from A26 near Tonbridge (west)	29/02/16 - 20/03/16	557799	145068
30013059	A21 northbound within the A225 junction	29/02/16 - 20/03/16	554450	150962
30013060	A21 northbound exit for A225	29/02/16 - 20/03/16	554437	150950
30013061	A21 southbound within the A225 junction	29/02/16 - 20/03/16	554152	151482
30013062	A21 southbound exit for A225	29/02/16 - 20/03/16	554167	151491
30013063	A21 southbound exit for A25 west	29/02/16 - 20/03/16	550120	155605
30013064	A21 northbound within the M25xA25 junction before exit for A25 east	29/02/16 - 20/03/16	549985	155722
30013065	A21 northbound exit for A25 west	29/02/16 - 20/03/16	549974	155705
30013066	A21 northbound exit for A25 east	29/02/16 - 20/03/16	549829	155897
30013067	A21 southbound within the M25xA25 junction before exit for A25 west	29/02/16 - 20/03/16	549903	155854
30013068	M25 clockwise exit for A21xA25	29/02/16 - 20/03/16	549918	155869
30013095	A249 northbound access from B2005	29/02/16 - 20/03/16	590461	167029
30013098	A249 southbound between A250 near Sheerness (north) and B2007	29/02/16 - 20/03/16	590842	173249
30013099	A249 northbound between B2007 and A250 near Sheerness (north)	29/02/16 - 20/03/16	590837	173249
30013155	M2 eastbound within junction 4	29/02/16 - 20/03/16	579882	162756
30013156	M2 J4 eastbound exit	29/02/16 - 20/03/16	579878	162769
30013157	M2 westbound within junction 4	29/02/16 - 20/03/16	580250	162892
30013168	M23 southbound within junction 10	29/02/16 - 20/03/16	530180	138924
30013169	M23 junction 10 southbound exit	29/02/16 - 20/03/16	530206	138917
30013184	link road from A1089 northbound to A13 eastbound	29/02/16 - 20/03/16	563458	180694
30013185	link road from A1089 northbound to A13 westbound	29/02/16 - 20/03/16	563439	180687
30013187	A12 southbound exit for M25	29/02/16 - 20/03/16	556949	192583
30013190	A13 westbound between A1012 and A126	09/04/15 - 29/04/15	559323	179785

TRIS ref	Site description	Dates used	Easting	Northing
30013191	A13 eastbound between A126 and A1012	02/05/15 - 14/05/15	559323	179785
30013199	A13 eastbound exit for A1012	29/02/16 - 20/03/16	560635	180204
30013202	A13 westbound within the A1012 junction	29/02/16 - 20/03/16	560981	180566
30013203	A13 westbound exit for A1012	29/02/16 - 20/03/16	561000	180557
30013206	A2 westbound within the A2018 junction	29/02/16 - 20/03/16	551664	172936
30013207	A2 westbound exit for A2018	29/02/16 - 20/03/16	551657	172916
30013208	A2 eastbound within the A2018 junction	29/02/16 - 20/03/16	551306	173218
30013209	A2 eastbound exit for A2018	29/02/16 - 20/03/16	551320	173234
30013219	A3 northbound within the M25 junction	29/02/16 - 20/03/16	507954	159042
30013220	A3 northbound exit for M25	29/02/16 - 20/03/16	507938	159049
30013221	A3 southbound within the M25 junction	29/02/16 - 20/03/16	508205	159487
30013222	A3 southbound exit for M25	29/02/16 - 20/03/16	508216	159479
30013223	A3 Portsmouth Road	29/02/16 - 20/03/16	509371	160541
30013224	A3 Portsmouth Road	29/02/16 - 20/03/16	509361	160559
30013236	A405 North Orbital Road	29/02/16 - 20/03/16	512533	202933
30013237	A405 North Orbital Road	01/16/15 - 21/06/15	512570	202954
30013273	M25 anti-clockwise within junction 30	29/02/16 - 20/03/16	557541	179391
30013285	M26 eastbound within junction 2A	29/02/16 - 20/03/16	562430	158330
30013286	M26 junction 2A eastbound exit	29/02/16 - 20/03/16	562426	158349
30013287	M26 junction 2A westbound exit	29/02/16 - 20/03/16	563176	158558
30013323	A12 northbound within the A1023 junction	29/02/16 - 20/03/16	562013	196648
30013324	A12 northbound exit for A1023	29/02/16 - 20/03/16	562006	196655
30013325	A12 southbound within the A1023 junction	29/02/16 - 20/03/16	562443	196743
30013326	A12 southbound exit for A1023	29/02/16 - 20/03/16	562444	196721

TRIS ref	Site description	Dates used	Easting	Northing
30013327	A12 southbound within the B1007 junction	29/02/16 - 20/03/16	570690	201586
30013328	A12 southbound exit for B1007	29/02/16 - 20/03/16	570697	201571
30013330	A12 northbound exit for B1007	29/02/16 - 20/03/16	570306	201630
30013331	A12 northbound within the A414 near Chelmsford (west) junction	29/02/16 - 20/03/16	567585	202276
30013332	A12 northbound exit for A414 near Chelmsford (west)	29/02/16 - 20/03/16	567579	202295
30013333	A12 southbound within the A414 near Chelmsford (west) junction	29/02/16 - 20/03/16	567897	202425
30013334	A12 southbound exit for A414 near Chelmsford (west)	29/02/16 - 20/03/16	567907	202411
30013335	A12 northbound within the A1114xA130 junction	29/02/16 - 20/03/16	573853	203279
30013336	A12 northbound exit for A1114xA130	29/02/16 - 20/03/16	573839	203289
30013339	A12 northbound within the A414 near Chelmsford (east) junction	29/02/16 - 20/03/16	574780	205227
30013340	A12 northbound exit for A414 near Chelmsford (east)	29/02/16 - 20/03/16	574760	205226
30013341	A12 southbound within the A414 near Chelmsford (east) junction	29/02/16 - 20/03/16	574761	205501
30013342	A12 southbound exit for A414 near Chelmsford (east)	29/02/16 - 20/03/16	574791	205505
30013347	A12 northbound within the B1389 junction near Witham	29/02/16 - 20/03/16	580555	212694
30013348	A12 northbound exit for B1389 near Witham	29/02/16 - 20/03/16	580542	212710
30013349	A12 London Road	05/10/15 - 25/10/15	583095	215753
30013350	A12 southbound exit for B1389 near Witham	05/10/15 - 25/10/15	583116	215748
30014637	A249 southbound within the B2005 junction	29/02/16 - 20/03/16	590500	167011
30014638	A249 southbound exit for B2005	29/02/16 - 20/03/16	590519	166995
30014641	A249 southbound within the B2006 junction	29/02/16 - 20/03/16	588956	165040
30014642	A249 southbound exit for B2006	29/02/16 - 20/03/16	588967	165026
30014643	A249 northbound within the B2006 junction	29/02/16 - 20/03/16	588672	164799
30014644	A249 northbound exit for B2006	29/02/16 - 20/03/16	588661	164814
30014648	M23 northbound between junction 8 and junction 7	29/02/16 - 20/03/16	528689	154987

TRIS ref	Site description	Dates used	Easting	Northing
30014649	M23 southbound between junction 7 and junction 8	29/02/16 - 20/03/16	529051	154410
30014652	M11 southbound between junction 5 and junction 4	29/02/16 - 20/03/16	542073	192263
30014653	A12 northbound within the M25 junction	29/02/16 - 20/03/16	556566	192247
30014654	A2 westbound access from A2018	29/02/16 - 20/03/16	551362	173119
30014656	A20 westbound between B2173 and A223	29/02/16 - 20/03/16	548948	169993
30014682	A30 Staines By-Pass	29/02/16 - 20/03/16	503803	172261
30014684	A30 Staines By-Pass	29/02/16 - 20/03/16	503846	172236
30014751	A259 Guldeford Lane	05/10/15 - 23/10/15	597309	124057
30014752	A259 Guldeford Lane	05/10/15 - 23/10/15	597313	124054
30014807	A2 westbound between A20 and A258	29/02/16 - 20/03/16	633042	141872
30014808	A2 eastbound between A258 and A20	29/02/16 - 20/03/16	633046	141874
30014817	A249 southbound access from B2006	29/02/16 - 20/03/16	588734	164804
30014818	A282 southbound within junction 31	29/02/16 - 20/03/16	557529	178685
30014819	M25 J31 clockwise access	29/02/16 - 20/03/16	557550	178687
30014820	M25 clockwise distributor junction 30 to junction 31	29/02/16 - 20/03/16	557637	179670
30014826	M3 westbound within junction 2	29/02/16 - 20/03/16	502137	167897
30014827	link road from M3 junction 2 westbound to M25 junction 12	29/02/16 - 20/03/16	502145	167871
30015253	M23 spur (Gatwick) eastbound between junction 9A and M23	29/02/16 - 20/03/16	529950	141730
30015254	M23 spur (Gatwick) westbound between M23 and junction 9A	29/02/16 - 20/03/16	530240	141693
30015256	M40 northbound within junction 1A before M25 junction 16 anti-clockwise access	29/02/16 - 20/03/16	502412	185634
30015257	link road from M40 junction 1A northbound to M25 junction 16	29/02/16 - 20/03/16	502461	185563
30015268	M26 westbound between junction 2A and M25/A21	29/02/16 - 20/03/16	550180	157290
30015273	A21 northbound within the A26 near Tonbridge (east) junction	29/02/16 - 20/03/16	559405	144862
30015279	link road from M25 junction 12 clockwise to M3 junction 2 westbound	29/02/16 - 20/03/16	501665	167716

TRIS ref	Site description	Dates used	Easting	Northing
30015347	M23 southbound within junction 8	29/02/16 - 20/03/16	530770	153130
30015350	link road from M25 junction 12 clockwise to M3 junction 2 eastbound	29/02/16 - 20/03/16	501681	167738
30015864	M40 junction 1 southbound exit	29/02/16 - 20/03/16	503919	185877
30015865	M40 southbound within junction 1	29/02/16 - 20/03/16	503923	185834
30015880	A3113 Airport Way	29/02/16 - 20/03/16	504388	175287
30015881	A3113 Airport Way	29/02/16 - 20/03/16	504384	175271
30015963	A120 Coggeshall Road	29/02/16 - 20/03/16	582325	222755
30015964	A120 Coggeshall Road	29/02/16 - 20/03/16	582326	222752
30015968	A120 eastbound within the M11 junction	29/02/16 - 20/03/16	552104	221874
30015969	connector at A120/M11 junction 8	29/02/16 - 20/03/16	552494	221543
30015970	A120 westbound within the M11 junction	29/02/16 - 20/03/16	552501	221555
30015971	A120 eastbound exit at a minor junction between M11 and B1256 near Great Dunmow (West)	29/02/16 - 20/03/16	554110	221895
30015972	A120 eastbound at a minor junction between M11 and B1256 near Great Dunmow (west)	29/02/16 - 20/03/16	554113	221886
30015974	A120 westbound at a minor junction between B1256 near Great Dunmow (west) and M11	05/10/15 - 25/10/15	555341	221983
30015975	A120 eastbound exit for B1256 near Great Dunmow (west)	29/02/16 - 20/03/16	559902	221735
30015997	A120 eastbound within the B1256 junction near Great Dunmow (west)	29/02/16 - 20/03/16	559896	221711
30015998	A120 westbound exit for B1256 near Great Dunmow (west)	29/02/16 - 20/03/16	560233	221553
30015999	A120 westbound within the B1256 junction near Great Dunmow (west)	29/02/16 - 20/03/16	560237	221569
30016002	A120 westbound exit for B1008xB1256	29/02/16 - 20/03/16	564043	220569
30016003	A120 westbound within the B1008xB1256 junction	29/02/16 - 20/03/16	564040	220578
30016004	A120 eastbound between B1008xB1256 and B1256 near Rayne (west)	29/02/16 - 20/03/16	569214	222897
30016007	A120 eastbound exit for A131 (south)	29/02/16 - 20/03/16	574321	222078
30016008	A120 eastbound within the A131 (south) junction	29/02/16 - 20/03/16	574323	222060

TRIS ref	Site description	Dates used	Easting	Northing
30016009	A120 westbound exit for A131 (south)	29/02/16 - 20/03/16	574750	221971
30016010	A120 westbound within the A131 (south) junction	29/02/16 - 20/03/16	574757	221983
30016011	A120 eastbound access at a minor junction between A131 (south) and B1018	29/02/16 - 20/03/16	575233	221744
30016012	A120 eastbound at a minor junction between A131 (south) and B1018	29/02/16 - 20/03/16	575225	221733
30016013	A120 westbound exit at a minor junction between B1018 and A131 (south)	29/02/16 - 20/03/16	575187	221722
30016014	A120 westbound at a minor junction between B1018 and A131 (south)	29/02/16 - 20/03/16	575195	221735
30016015	A120 eastbound between B1018 and A131 (north)	29/02/16 - 20/03/16	578000	222706
30016016	A120 westbound between A131 (north) and B1018	29/02/16 - 20/03/16	578016	222706
30016274	connector at A120/M11 junction 8	05/10/15 - 25/10/15	552215	221769
30016275	roundabout at A120/M11 (eastern)	05/10/15 - 25/10/15	552315	221725
30016276	connector at A120/M11 junction 8	05/10/15 - 25/10/15	552374	221660
30016284	A13 eastbound exit for A1306 near Aveley	29/02/16 - 20/03/16	554613	180280
30016343	A2 eastbound exit for A2050 near Canterbury (west)	29/02/16 - 20/03/16	611728	158067
30016344	A2 eastbound between A2050 near Canterbury (west) and A28	29/02/16 - 20/03/16	611729	158040
30016346	A2 westbound access from A2050 near Canterbury (west)	29/02/16 - 20/03/16	611883	157972
30016347	A2 westbound exit for A28	29/02/16 - 20/03/16	613734	156651
30016348	A2 westbound between A28 and A2050 near Canterbury (west)	29/02/16 - 20/03/16	613766	156644
30016350	A2 eastbound access from A28	29/02/16 - 20/03/16	613780	156672
30016351	A2 eastbound exit at minor junction between A28 and A2050 near Canterbury (south)	29/02/16 - 20/03/16	617894	155198
30016352	A2 eastbound access from A2050 near Canterbury (south)	29/02/16 - 20/03/16	617479	155286
30016353	A2 eastbound between A2050 near Canterbury (south) and A260	29/02/16 - 20/03/16	617886	155195
30016354	A2 westbound within the for A2050 near Canterbury (south) junction	02/11/15 - 22/11/15	617783	155212
30016355	A2 westbound exit for A2050 near Canterbury (south)	02/11/15 - 22/11/15	617773	155202
30016356	A2 eastbound exit for A260	29/02/16 - 20/03/16	621674	150226

TRIS ref	Site description	Dates used	Easting	Northing
30016357	A2 eastbound access from A260	29/02/16 - 20/03/16	621725	150165
30016359	A2 westbound access from A260	29/02/16 - 20/03/16	621639	150174
30016360	A2 westbound exit for A260	29/02/16 - 20/03/16	622491	148897
30016361	A2 westbound within the A260 junction	29/02/16 - 20/03/16	622493	148896
30016362	A2 eastbound between A260 and A256 near Whitfield (west)	29/02/16 - 20/03/16	622526	148874
30020060	M25 junction 12 anti-clockwise access	29/02/16 - 20/03/16	502045	167370
30020063	link road from M25 junction 12 clockwise to M3 junction 2	29/02/16 - 20/03/16	502001	167383
30020066	link road from M25 junction 7 anti-clockwise to M23 junction 8 southbound	29/02/16 - 20/03/16	530826	153191
30020067	link connector on M23 from M25 at junction 7 (Southbound)	29/02/16 - 20/03/16	530999	153109
30020071	link road from M23 junction 8 southbound to M25 junction 7 clockwise	29/02/16 - 20/03/16	530433	153279
30020073	link road from M25 junction 7 anti-clockwise to M23 junction 8 northbound	29/02/16 - 20/03/16	530431	153507
30020075	link road from M25 junction 7 anti-clockwise to M23 junction 8	29/02/16 - 20/03/16	530055	153415
30020077	M25 anti-clockwise within junction 7	29/02/16 - 20/03/16	531110	153213
30020078	link road from M25 junction 7 clockwise to M23 junction 8 northbound	29/02/16 - 20/03/16	531230	153119
30020080	link road from M23 junction 8 southbound to M25 junction 7 anti-clockwise	29/02/16 - 20/03/16	530851	153505
30020086	M20 junction 2 eastbound exit	29/02/16 - 20/03/16	559813	160097
30020091	M20 junction 9 eastbound exit	29/02/16 - 20/03/16	600574	144195
30020093	M20 junction 12 eastbound exit	29/02/16 - 20/03/16	619242	137136
30020094	M20 junction 12 westbound exit	29/02/16 - 20/03/16	619446	137160
30020095	M20 junction 13 eastbound exit	29/02/16 - 20/03/16	621009	137690
30020096	A20 eastbound exit for A260	29/02/16 - 20/03/16	622167	138827
30020097	A20 westbound within the A260 junction	29/02/16 - 20/03/16	622274	138931
30020098	A20 westbound access from A260	29/02/16 - 20/03/16	622289	138921
30020100	A20 eastbound within the A260 junction	29/02/16 - 20/03/16	622265	138941

TRIS ref	Site description	Dates used	Easting	Northing
30020101	A20 eastbound access from A260	29/02/16 - 20/03/16	622188	138919
30020102	M20 eastbound within junction 13	29/02/16 - 20/03/16	621112	137660
30020103	A20 eastbound access from M20xA259xA2034	29/02/16 - 20/03/16	621105	137691
30020106	M20 junction 11 eastbound exit	29/02/16 - 20/03/16	613460	137401
30020107	M20 junction 11 westbound exit	29/02/16 - 20/03/16	613794	137279
30020110	M20 junction 11A westbound access	29/02/16 - 20/03/16	617492	137261
30020127	M26 eastbound between junction 2A and junction 3	29/02/16 - 20/03/16	564259	159142
30020129	M20 junction 2 westbound access	29/02/16 - 20/03/16	561555	159349
30020132	M20 junction 7 eastbound access	29/02/16 - 20/03/16	578113	157455
30020138	M20 eastbound within junction 6	29/02/16 - 20/03/16	573580	158150
30020141	M20 junction 5 eastbound exit to distributor	29/02/16 - 20/03/16	573581	158164
30020143	M20 junction 8 westbound access	29/02/16 - 20/03/16	582296	154994
30020144	M20 westbound within junction 8	29/02/16 - 20/03/16	582496	154829
30020145	M20 junction 8 eastbound access	29/02/16 - 20/03/16	582571	154833
30020146	M20 eastbound within junction 8	29/02/16 - 20/03/16	582250	155105
30020147	M20 westbound between junction 9 and junction 8	29/02/16 - 20/03/16	594892	147341
30020148	M20 junction 8 westbound exit	29/02/16 - 20/03/16	582513	154757
30020149	M20 junction 8 eastbound exit	29/02/16 - 20/03/16	582268	155115
30020150	M20 eastbound between junction 8 and junction 9	29/02/16 - 20/03/16	594903	147356
30020151	M20 westbound within junction 9	29/02/16 - 20/03/16	600532	144135
30020152	M20 junction 9 westbound access	29/02/16 - 20/03/16	600496	144100
30020154	M20 junction 10 westbound access	29/02/16 - 20/03/16	603329	142041
30020155	M20 junction 10 eastbound exit	29/02/16 - 20/03/16	603612	141768
30020156	M20 eastbound within junction 10	29/02/16 - 20/03/16	603600	141755

TRIS ref	Site description	Dates used	Easting	Northing
30020158	M20 eastbound within junction 9	29/02/16 - 20/03/16	600789	143976
30020159	M20 junction 9 eastbound access	29/02/16 - 20/03/16	600811	144005
30020163	M20 junction 12 eastbound access	29/02/16 - 20/03/16	619391	137252
30020164	M20 westbound within junction 11	29/02/16 - 20/03/16	613741	137315
30020165	M20 junction 11 westbound access	29/02/16 - 20/03/16	613446	137322
30020166	M20 eastbound within junction 11	29/02/16 - 20/03/16	613742	137335
30020167	M20 junction 11 eastbound access	29/02/16 - 20/03/16	613807	137353
30020168	M20 junction 13 westbound access	29/02/16 - 20/03/16	621017	137621
30020169	M20 westbound within junction 13	29/02/16 - 20/03/16	621121	137644
30020170	M20 junction 9 westbound exit	29/02/16 - 20/03/16	600860	143886
30020172	link road from A21 northbound to M25 junction 5 clockwise	29/02/16 - 20/03/16	549354	156720
30020175	link road from M25 junction 5 anti-clockwise to A21 southbound	29/02/16 - 20/03/16	549760	157252
30020176	M26 westbound between junction 3 and junction 2A	29/02/16 - 20/03/16	564400	159048
30020196	M2 junction 5 westbound exit	29/02/16 - 20/03/16	585736	162091
30020197	M2 junction 5 eastbound exit	29/02/16 - 20/03/16	585407	162505
30020199	M2 junction 6 eastbound exit	29/02/16 - 20/03/16	601298	159746
30020200	M2 eastbound within junction 7	29/02/16 - 20/03/16	604012	159874
30020218	M2 westbound between junction 6 and junction 5	29/02/16 - 20/03/16	594317	159017
30020219	M2 junction 5 westbound access	29/02/16 - 20/03/16	585790	162128
30020221	M2 junction 5 eastbound access	29/02/16 - 20/03/16	585444	162483
30020224	M2 westbound within junction 6	29/02/16 - 20/03/16	601625	159646
30020225	M2 junction 6 westbound access	29/02/16 - 20/03/16	601600	159621
30020226	M2 eastbound within junction 6	29/02/16 - 20/03/16	601310	159711
30020227	M2 junction 6 eastbound access	29/02/16 - 20/03/16	601337	159742

TRIS ref	Site description	Dates used	Easting	Northing
30020228	M2 eastbound between junction 5 and junction 6	29/02/16 - 20/03/16	594315	159031
30020500	link road from M25 junction 16 anti-clockwise to M40 junction 1A southbound	29/02/16 - 20/03/16	501974	185791
30020501	M40 southbound within junction 1A after M25 junction 16 clockwise access	29/02/16 - 20/03/16	502183	185651
30020502	link road from M25 junction 16 clockwise to M40 J1A northbound	29/02/16 - 20/03/16	501870	185390
30021469	M20 eastbound between junction 11A and junction 12	29/02/16 - 20/03/16	617692	137293
30021496	M25 anti-clockwise between junction 16 and junction 15	29/02/16 - 20/03/16	504199	182547
30021499	link road from M4 junction 4B westbound to M25 junction 15 clockwise	29/02/16 - 20/03/16	504452	178604
30021500	link road from M25 junction 15 anti-clockwise to M4 junction 4B eastbound	29/02/16 - 20/03/16	504818	178581
30021501	link road from M25 junction 15 clockwise to M4 junction 4B eastbound	29/02/16 - 20/03/16	504532	178327
30021634	M11 northbound between junction 9 and junction 10	03/10/16 - 23/10/16	549722	242775
30021654	M11 southbound between junction 10 and junction 9	03/10/16 - 23/10/16	549732	242786
30021655	M11 junction 9 southbound access from A11	03/10/16 - 23/10/16	550017	242630
30021656	M11 junction 9 northbound to A11 northbound	03/10/16 - 23/10/16	549807	242812
30021666	M11 northbound within junction 6 before M25 junction 27 anti-clockwise access	29/02/16 - 20/03/16	547048	200047
30021669	M11 southbound within junction 6 after M25 junction 27 clockwise access	29/02/16 - 20/03/16	546841	199670
30021670	link road from M25 junction 27 anti-clockwise to M11 junction 6 southbound	29/02/16 - 20/03/16	546831	199601
30021778	M25 anti-clockwise within junction 5	29/02/16 - 20/03/16	549496	156984
30021798	M25 anti-clockwise between junction 12 and junction 11	29/02/16 - 20/03/16	502558	166631
30021799	M25 junction 11 clockwise access	29/02/16 - 20/03/16	503766	165212
30021802	M25 clockwise between junction 10 and junction 11	29/02/16 - 20/03/16	505584	161496
30021803	M25 junction 11 anti-clockwise access	29/02/16 - 20/03/16	503936	164964
30021804	M25 anti-clockwise within junction 11	29/02/16 - 20/03/16	503874	165050
30021808	M25 junction 13 clockwise access	29/02/16 - 20/03/16	502387	172974
30021813	M25 clockwise between junction 8 and junction 9	29/02/16 - 20/03/16	520803	155412

TRIS ref	Site description	Dates used	Easting	Northing
30021814	M25 junction 9 clockwise access	29/02/16 - 20/03/16	517072	157502
30021815	M25 clockwise within junction 9	29/02/16 - 20/03/16	517161	157380
30021816	M25 junction 9 anti-clockwise access	29/02/16 - 20/03/16	516484	158526
30021819	M25 anti-clockwise between junction 9 and junction 8	29/02/16 - 20/03/16	520815	155425
30021821	M25 anti-clockwise within junction 8	29/02/16 - 20/03/16	526033	152683
30021823	M25 junction 8 clockwise access	29/02/16 - 20/03/16	525760	152532
30021835	M25 junction 13 anti-clockwise exit	29/02/16 - 20/03/16	502443	172941
30021837	M25 junction 9 anti-clockwise exit	29/02/16 - 20/03/16	516193	158677
30021838	M25 junction 8 anti-clockwise exit	29/02/16 - 20/03/16	525612	152577
30021840	M25 junction 13 clockwise exit	29/02/16 - 20/03/16	502100	172197
30021842	A20 westbound exit for M20/A259/A2034	29/02/16 - 20/03/16	621388	137681
30021848	M25 anti-clockwise within junction 12	29/02/16 - 20/03/16	501952	167581
30021859	M20 eastbound between junction 2 and junction 3	29/02/16 - 20/03/16	559795	160052
30021860	M20 westbound between junction 3 and junction 2	29/02/16 - 20/03/16	561560	159361
30022390	M25 clockwise within junction 11	29/02/16 - 20/03/16	503936	164787
30022391	M25 clockwise within junction 12	29/02/16 - 20/03/16	501932	167577
30022402	M25 anti-clockwise within junction 9	29/02/16 - 20/03/16	516136	158668
30022408	M25 anti-clockwise within junction 13	29/02/16 - 20/03/16	502412	172933
30022411	M25 junction 11 clockwise exit	29/02/16 - 20/03/16	503852	164942
30022412	M25 junction 9 clockwise exit	29/02/16 - 20/03/16	517132	157338
30022682	M4 eastbound within junction 4B	29/02/16 - 20/03/16	505549	178376
30022684	M25 anti-clockwise within junction 15	29/02/16 - 20/03/16	504618	178630
30022687	M25 clockwise within junction 15	29/02/16 - 20/03/16	504572	178762
30022731	M25 clockwise within junction 13	29/02/16 - 20/03/16	502104	172197

TRIS ref	Site description	Dates used	Easting	Northing
30022737	M25 clockwise between junction 7 and junction 8	29/02/16 - 20/03/16	529451	153442
30022738	M25 clockwise within junction 8	29/02/16 - 20/03/16	528005	153742
30022743	M25 clockwise between junction 11 and junction 12	29/02/16 - 20/03/16	503370	165872
30022745	M25 anti-clockwise between junction 8 and junction 7	29/02/16 - 20/03/16	527988	153760
30023466	M25 clockwise between junction 15 and junction 16	29/02/16 - 20/03/16	503371	184057
30023636	M40 southbound within junction 1A before M25 junction 16 clockwise access	29/02/16 - 20/03/16	500405	186000
30024290	M20 westbound within junction 6	29/02/16 - 20/03/16	573721	158132
30024330	link road from M25 junction 15 to M4 junction 4B eastbound	29/02/16 - 20/03/16	505436	178381
30024434	link road from M25 junction 15 anti-clockwise to M4 junction 4B	29/02/16 - 20/03/16	504632	178814
30024436	M40 northbound within junction 1A after M25 junction 16 anti-clockwise access	29/02/16 - 20/03/16	502004	185643
30024450	M4 westbound between junction 4B and junction 5	29/02/16 - 20/03/16	503226	178162
30024453	link road from M4 junction 4B eastbound to M25 junction 15	29/02/16 - 20/03/16	504071	178384
30024456	link road from M25 junction 15 to M4 junction 4B westbound	29/02/16 - 20/03/16	504122	178336
30024461	link road from M4 junction 4B westbound to M25 junction 15	29/02/16 - 20/03/16	505415	178331
30024462	M4 westbound within junction 4B	29/02/16 - 20/03/16	505413	178347
30024468	link road from M25 junction 27 anti-clockwise to M11 junction 6 northbound	29/02/16 - 20/03/16	547038	200074
30024538	A249 northbound between M2 and A2	29/02/16 - 20/03/16	585433	162132
30024539	A249 southbound between A2 and M2	29/02/16 - 20/03/16	585445	162123
30025123	M25 anti-clockwise between junction 13 and junction 12	29/02/16 - 20/03/16	501660	169960
30025129	M25 clockwise between junction 6 and junction 7	29/02/16 - 20/03/16	531830	152900
30025130	link road from M25 junction 7 clockwise to M23 junction 8 northbound	29/02/16 - 20/03/16	531391	153051
30025150	M25 anti-clockwise between junction 4 and junction 3	29/02/16 - 20/03/16	550958	165574
30025168	M25 clockwise between junction 4 and junction 5	29/02/16 - 20/03/16	550545	160317
30025173	link road from M25 junction 5 clockwise to A21	29/02/16 - 20/03/16	549850	157960

TRIS ref	Site description	Dates used	Easting	Northing
30025198	M25 junction 4 clockwise exit	29/02/16 - 20/03/16	550280	163502
30025199	M25 junction 4 anti-clockwise exit	29/02/16 - 20/03/16	550260	162772
30025200	M25 junction 4 anti-clockwise access	29/02/16 - 20/03/16	550230	163422
30025201	M25 anti-clockwise within junction 4	29/02/16 - 20/03/16	550268	162831
30025207	M25 clockwise between junction 3 and junction 4	29/02/16 - 20/03/16	550982	165572
30025212	M25 anti-clockwise between junction 5 and junction 4	29/02/16 - 20/03/16	549620	157560
30025223	M25 junction 4 clockwise access	29/02/16 - 20/03/16	550302	162779
30025224	M25 clockwise within junction 4	29/02/16 - 20/03/16	550270	163415
30025229	M25 clockwise between junction 13 and junction 14	29/02/16 - 20/03/16	502910	173900
30025232	M25 anti-clockwise between junction 14 and junction 13	29/02/16 - 20/03/16	502780	173410
30025241	M25 clockwise between junction 12 and junction 13	29/02/16 - 20/03/16	501530	171070
30025245	M25 junction 14 clockwise exit	29/02/16 - 20/03/16	503296	174839
30025252	M2 eastbound within junction 1	29/02/16 - 20/03/16	569885	169578
30025274	M2 eastbound between junction 2 and junction 3	29/02/16 - 20/03/16	573892	164700
30025275	M2 westbound between junction 3 and junction 2	29/02/16 - 20/03/16	573846	164693
30025282	M2 eastbound within junction 3	29/02/16 - 20/03/16	574793	162807
30025291	M2 westbound between junction 4 and junction 3	29/02/16 - 20/03/16	576913	161555
30025302	M2 eastbound between junction 3 and junction 4	29/02/16 - 20/03/16	579471	162514
30025306	M20 eastbound within junction 5	29/02/16 - 20/03/16	572932	158375
30025307	M20 junction 5 eastbound exit	29/02/16 - 20/03/16	573036	158324
30025308	M20 junction 5 westbound access	29/02/16 - 20/03/16	573000	158290
30025310	M20 junction 5 eastbound access to distributor	29/02/16 - 20/03/16	573540	158180
30025313	M20 junction 5 westbound exit from distributor	29/02/16 - 20/03/16	573918	158127
30025315	M20 junction 5 eastbound exit to distributor	29/02/16 - 20/03/16	574070	158224

TRIS ref	Site description	Dates used	Easting	Northing
30025321	M20 westbound distributor junction 6 to junction 5	29/02/16 - 20/03/16	574869	158433
30025323	M20 eastbound distributor junction 5 to junction 6	29/02/16 - 20/03/16	575328	158543
30025326	M20 junction 6 eastbound exit from distributor	29/02/16 - 20/03/16	575213	158606
30025328	M20 junction 6 westbound exit	29/02/16 - 20/03/16	575267	158442
30025329	M20 junction 6 eastbound access	29/02/16 - 20/03/16	575566	158615
30025336	M20 junction 6 westbound exit	29/02/16 - 20/03/16	575775	158527
30025337	M20 eastbound between junction 6 and junction 7	29/02/16 - 20/03/16	576170	158355
30025343	M20 westbound within junction 7	29/02/16 - 20/03/16	577702	157403
30025345	M20 junction 7 westbound access	29/02/16 - 20/03/16	577741	157378
30025349	M20 junction 7 westbound exit	29/02/16 - 20/03/16	578412	157422
30025357	M20 eastbound between junction 7 and junction 8	29/02/16 - 20/03/16	579936	157054
30025358	M20 westbound between junction 8 and junction 7	29/02/16 - 20/03/16	579932	157037
30025450+30025451	M4 eastbound between junction 4B and junction 4	29/02/16 - 20/03/16	506242	178475
30025452+30025453	M4 westbound between junction 4 and junction 4B	29/02/16 - 20/03/16	506242	178368
30025506	M25 anti-clockwise between junction 15 and junction 14	29/02/16 - 20/03/16	504234	177169
30025525	M2 junction 2 westbound exit	29/02/16 - 20/03/16	571875	167734
30025526	M2 eastbound within junction 2	29/02/16 - 20/03/16	571938	167748
30025527	M2 westbound within junction 2	29/02/16 - 20/03/16	571894	167748
30025528	M2 junction 2 eastbound access	29/02/16 - 20/03/16	571951	167759
30025534	A2 westbound within the B255 junction	29/02/16 - 20/03/16	558900	172702
30025535	A2 westbound exit for B255	29/02/16 - 20/03/16	558899	172686
30025548	M20 eastbound between junction 4 and junction 5	29/02/16 - 20/03/16	571644	158765
30025650	link road from M25 J15 clockwise to M4 junction 4B	29/02/16 - 20/03/16	504525	177825
30025815	M20 eastbound between junction 3 and junction 4	29/02/16 - 20/03/16	568276	159696

TRIS ref	Site description	Dates used	Easting	Northing
30025816	M20 westbound between junction 4 and junction 3	29/02/16 - 20/03/16	568276	159682
30025831	M23 southbound between junction 8 and junction 9	29/02/16 - 20/03/16	531087	147493
30025832	M23 northbound between junction 9 and junction 8	29/02/16 - 20/03/16	531053	147418
30025843	link road from M23 junction 8 northbound to M25 junction 7	29/02/16 - 20/03/16	530764	152933
30025844	M23 northbound within junction 8	29/02/16 - 20/03/16	530829	152837
30025845	link road from M23 junction 8 northbound to M25 junction 7 anti-clockwise	29/02/16 - 20/03/16	530688	153086
30025846	link road from M23 junction 8 northbound to M25 junction 7 clockwise	29/02/16 - 20/03/16	530678	153081
30025854	M23 junction 9 northbound access	29/02/16 - 20/03/16	530573	141829
30025856	M23 junction 9 southbound exit	29/02/16 - 20/03/16	530623	141783
30025857	M23 southbound within junction 9	29/02/16 - 20/03/16	530601	141791
30025858	M23 junction 9 southbound access	29/02/16 - 20/03/16	530528	141409
30025860	M23 junction 9 northbound exit	29/02/16 - 20/03/16	530460	141335
30025903	M20 junction 4 eastbound exit	29/02/16 - 20/03/16	568782	159612
30025905	M20 junction 4 westbound access	29/02/16 - 20/03/16	568779	159586
30025907	M20 junction 4 eastbound access	29/02/16 - 20/03/16	569422	159336
30025909	M20 junction 4 westbound exit	29/02/16 - 20/03/16	569400	159296
30025916	M20 westbound between junction 5 and junction 4	29/02/16 - 20/03/16	571728	158720
30025919	M20 eastbound within junction 7	29/02/16 - 20/03/16	577547	157494
30026006	link road from A2 westbound to M25 J2 anti-clockwise	29/02/16 - 20/03/16	556220	172145
30026051	M23 northbound within junction 9	29/02/16 - 20/03/16	530559	141726
30026053	M23 southbound between junction 9 and junction 10	29/02/16 - 20/03/16	530460	140916
30026064	A2 westbound access from M25/A282	29/02/16 - 20/03/16	555428	171990
30026065	A2 eastbound within the M25/A282 junction	29/02/16 - 20/03/16	555735	172087
30026066	A2 westbound within the M25/A282 junction	29/02/16 - 20/03/16	555708	172063

TRIS ref	Site description	Dates used	Easting	Northing
30026067	A2 eastbound access from M25/A282	29/02/16 - 20/03/16	555951	172157
30026071	A2 eastbound after M25 junction 2 roundabout access	29/02/16 - 20/03/16	556215	172197
30026072	A2 westbound before M25 junction 2 roundabout exit	29/02/16 - 20/03/16	556304	172192
30026077	A2 westbound between B255 and M25/A282	29/02/16 - 20/03/16	557179	172271
30026080	A2 eastbound between M25/A282 and B255	29/02/16 - 20/03/16	557664	172408
30026098	A2 westbound between B259 and B255	29/02/16 - 20/03/16	560181	172661
30026100	A2 eastbound between B255 and B259	29/02/16 - 20/03/16	560587	172687
30026102	A2 westbound within the B259 junction	29/02/16 - 20/03/16	560676	172671
30026106	A2 eastbound exit for B259	29/02/16 - 20/03/16	560976	172720
30026107	A2 westbound exit for B259	29/02/16 - 20/03/16	561086	172667
30026108	A2 westbound between A2260 and B259	29/02/16 - 20/03/16	561271	172681
30026109	A2 eastbound within the B259 junction	29/02/16 - 20/03/16	561574	172655
30026110	A2 eastbound access from B259	29/02/16 - 20/03/16	561678	172634
30026592	M23 northbound between junction 10 and junction 9	29/02/16 - 20/03/16	530240	139364
30026594	M23 junction 10 northbound access	29/02/16 - 20/03/16	530147	138971
30026595	M23 northbound within junction 10	29/02/16 - 20/03/16	530117	138475
30026596	M23 junction 10 northbound exit	29/02/16 - 20/03/16	530088	138473
30026597	M23 northbound between junction 10A and junction 10	29/02/16 - 20/03/16	530127	137875
30026604	roundabout at M2 junction 7 A2	29/02/16 - 20/03/16	603959	159897
30026605	roundabout at M2 junction 7 A2	29/02/16 - 20/03/16	604098	159863
30027336	M25 anti-clockwise within junction 14	29/02/16 - 20/03/16	503957	176111
30027343	M25 clockwise within junction 14	29/02/16 - 20/03/16	503846	175751
30027345	M25 clockwise between junction 14 and junction 15	29/02/16 - 20/03/16	504378	177454
30027487	link road from M4 junction 4B to M25 junction 15 anti-clockwise	29/02/16 - 20/03/16	504633	177982

TRIS ref	Site description	Dates used	Easting	Northing
30027498	M25 junction 14 anti-clockwise exit for (Heathrow) T5	29/02/16 - 20/03/16	504032	176239
30027499	M25 junction 14 anti-clockwise exit to roundabout at A3113	29/02/16 - 20/03/16	504003	176245
30027982	M20 junction 5 westbound access from distributor	29/02/16 - 20/03/16	573917	158131
30027988	M20 junction 11A westbound exit to A20	29/02/16 - 20/03/16	617503	137256
30027990	A249 southbound between M2 and M20	29/02/16 - 20/03/16	578066	157507
30027992	M2 junction 2 eastbound exit	29/02/16 - 20/03/16	571670	168177
30027993	M2 junction 2 westbound access	29/02/16 - 20/03/16	571605	168149
30027995	M2 junction 3 eastbound exit	29/02/16 - 20/03/16	574814	162819
30027996	M2 junction 3 westbound access	29/02/16 - 20/03/16	574728	162811
30028010	M2 junction 3 eastbound access	29/02/16 - 20/03/16	575068	162392
30028011	M2 junction 3 westbound exit	29/02/16 - 20/03/16	574999	162378
30028039	M11 northbound within junction 6 after M25 junction 27 anti-clockwise access	29/02/16 - 20/03/16	547284	200350
30028040	link road from M11 junction 6 southbound to M25 junction 27	29/02/16 - 20/03/16	547366	200411
30028056	M11 southbound between junction 7 and junction 6	29/02/16 - 20/03/16	548227	203990
30028069	M11 junction 7 southbound access	29/02/16 - 20/03/16	547659	206810
30028071	M11 junction 7 southbound exit	05/10/15 - 25/10/15	547791	207288
30028073	M11 junction 7 northbound access	05/10/15 - 25/10/15	547735	207325
30028136	M11 northbound between junction 7 and junction 8	29/02/16 - 20/03/16	550628	215310
30028712	link road from M25 junction 2 clockwise to A2 eastbound	29/02/16 - 20/03/16	556448	172239
30028870	A2 westbound exit for A227	29/02/16 - 20/03/16	564443	170981
30028873	A2 eastbound between A227 and M2/A289	29/02/16 - 20/03/16	565056	170731
30028874	A2 westbound between M2/A289 and A227	29/02/16 - 20/03/16	565241	170609
30028877	A2 eastbound exit at a minor junction between A227 and M2/A289	29/02/16 - 20/03/16	565721	170489
30028878	A2 westbound access at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	565718	170406

TRIS ref	Site description	Dates used	Easting	Northing
30028879	A2 westbound at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	565719	170427
30028880	A2 westbound within the A227 junction	29/02/16 - 20/03/16	564072	171178
30028881	A2 westbound access from A227	29/02/16 - 20/03/16	564050	171137
30028882	A2 eastbound access from A227	29/02/16 - 20/03/16	564181	171221
30028883	A2 eastbound within the A227 junction	29/02/16 - 20/03/16	564197	171148
30028887	A2 eastbound exit for A227	29/02/16 - 20/03/16	563713	171398
30028888	A2 westbound between A227 and A2260	29/02/16 - 20/03/16	563138	171640
30028889	A2 eastbound between A2260 and A227	29/02/16 - 20/03/16	563070	171712
30028892	A2 westbound within the A2260 junction	29/02/16 - 20/03/16	562323	172140
30028893	A2 westbound exit for A2260	29/02/16 - 20/03/16	562315	172128
30028894	A2 eastbound between B259 and A2260	29/02/16 - 20/03/16	562177	172277
30028895	A2 eastbound access from A2260	29/02/16 - 20/03/16	562203	172304
30028897	A2 Watling Street	29/02/16 - 20/03/16	567411	169811
30028899	A2 Watling Street	29/02/16 - 20/03/16	567886	169703
30028900	A2 westbound access at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	567886	169660
30028901	A2 westbound at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	568143	169628
30028902	A2 westbound exit at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	568143	169621
30028903	A2 eastbound exit at a minor junction between A227 and M2/A289	29/02/16 - 20/03/16	568441	169717
30028904	A2 eastbound at a minor junction between A227 and M2/A289	29/02/16 - 20/03/16	568477	169674
30028909	A2 eastbound at a minor junction between A227 and M2/A289	29/02/16 - 20/03/16	566165	170360
30028910	A2 eastbound access at a minor junction between A227 and M2/A289	29/02/16 - 20/03/16	566169	170381
30028912	A2 westbound exit at a minor junction between M2/A289 and A227	29/02/16 - 20/03/16	566158	170317
30028997	M25 junction 14 anti-clockwise entry slip from roundabout at A3113	29/02/16 - 20/03/16	503561	175085
30028998	M25 junction 14 anti-clockwise from (Heathrow) T5 before A3113 anti-clockwise access	29/02/16 - 20/03/16	503560	175093

TRIS ref	Site description	Dates used	Easting	Northing
30029166	M20 westbound distributor junction 6 to junction 5	29/02/16 - 20/03/16	575267	158488
30029167	M20 J6 westbound access to distributor	29/02/16 - 20/03/16	575151	158440
30029223	M40 southbound between junction 2 and junction 1A	29/02/16 - 20/03/16	500405	186002
30029737	link road from M25 junction 3 clockwise to M20 junction 1 eastbound	29/02/16 - 20/03/16	553409	168889
30029738	M25 clockwise within junction 3 before A20 roundabout access	29/02/16 - 20/03/16	553404	168892
30029741	link road from M20 junction 1 westbound to M25 junction 3 anti-clockwise	29/02/16 - 20/03/16	553182	168682
30029742	M25 anti-clockwise within junction 3 after A20 roundabout access	29/02/16 - 20/03/16	553081	168535
30029748	M25 junction 3 clockwise exit	29/02/16 - 20/03/16	552872	168066
30029750	M25 clockwise within junction 3 before A20 roundabout access	29/02/16 - 20/03/16	552905	168176
30029751	M25 junction 3 anti-clockwise access	29/02/16 - 20/03/16	552818	168057
30029753	M25 anti-clockwise within junction 3 before A20 roundabout access	29/02/16 - 20/03/16	552833	168052
30029758	A20 westbound access from M25/M20	29/02/16 - 20/03/16	552405	167836
30029761	M20 junction 1 eastbound access	29/02/16 - 20/03/16	552950	167746
30029767	M25 junction 3 anti-clockwise exit	29/02/16 - 20/03/16	552524	167318
30029781	M25 anti-clockwise between v3 and junction 2	29/02/16 - 20/03/16	554766	170905
30029782	M25 clockwise between junction 2 and junction 3	29/02/16 - 20/03/16	554916	171018
30029794	M25 clockwise within junction 2	29/02/16 - 20/03/16	555769	172429
30029797	M25 junction 2 clockwise exit	29/02/16 - 20/03/16	555807	172620
30029799	M25 junction 2 anti-clockwise access	29/02/16 - 20/03/16	555731	172272
30029801	M25 junction 2 anti-clockwise exit	29/02/16 - 20/03/16	555583	171794
30029802	M25 anti-clockwise within junction 2	29/02/16 - 20/03/16	555590	171770
30029804	M25 junction 2 clockwise access	29/02/16 - 20/03/16	555664	171844
30029805	M25 J2 clockwise exit	29/02/16 - 20/03/16	555753	173003
30029807	A282 southbound distributor between A296xA225 and A2	29/02/16 - 20/03/16	555759	173011

TRIS ref	Site description	Dates used	Easting	Northing
30029815	A282 northbound access from A296xA225	29/02/16 - 20/03/16	555668	173545
30029816	A282 northbound within the A296xA225 junction	29/02/16 - 20/03/16	555675	173661
30029818	A282 northbound between A296xA225 and A206	29/02/16 - 20/03/16	555550	174027
30029819	A282 southbound between A206 and A296xA225	29/02/16 - 20/03/16	555494	174539
30029821	A282 northbound exit for A206	29/02/16 - 20/03/16	555670	174832
30029824	A282 southbound access from A206	29/02/16 - 20/03/16	555766	174862
30029825	A282 southbound within the A206 junction	29/02/16 - 20/03/16	555745	174868
30030176	A282 southbound exit for A296xA225	29/02/16 - 20/03/16	555711	173648
30031307	M25 clockwise within J16 before M40 J1A southbound exit	29/02/16 - 20/03/16	502129	185085
30031309	M25 anti-clockwise within J16 after M40 J1A northbound exit	29/02/16 - 20/03/16	501988	185487
30031310	link road from M25 J16 anti-clockwise to M40 J1A northbound	29/02/16 - 20/03/16	502001	185489
30031311	M25 clockwise within J16 after M40 J1A southbound exit	29/02/16 - 20/03/16	501814	185933
30031312	link road from M25 J16 clockwise to M40 J1A southbound	29/02/16 - 20/03/16	501684	186002
30031325	link road from M40 J1A to M25 J16 clockwise	29/02/16 - 20/03/16	501692	186366
30031327	M25 anti-clockwise within J16 before M40 J1A northbound exit	29/02/16 - 20/03/16	501775	186133
30031608	M25 clockwise between J16 and J17	29/02/16 - 20/03/16	502553	193317
30031611	M25 anti-clockwise between J17 and J16	29/02/16 - 20/03/16	502730	193570
30031612	M25 clockwise within J17	29/02/16 - 20/03/16	502915	193889
30031613	M25 anti-clockwise within J17	29/02/16 - 20/03/16	502928	193872
30031614	M25 J17 clockwise exit	29/02/16 - 20/03/16	502925	193910
30031700	M1 northbound between J6 and J6A	29/02/16 - 20/03/16	511515	203657
30031701	link road from M1 J6A southbound to M25 J21	29/02/16 - 20/03/16	511572	203672
30031702	M1 southbound within J6A	05/10/15 - 25/10/15	511457	203940
30032036	M25 J17 anti-clockwise access	29/02/16 - 20/03/16	502929	193863

TRIS ref	Site description	Dates used	Easting	Northing
30032051	M25 within J14 from (Heathrow) T5 before J14 clockwise access	29/02/16 - 20/03/16	503831	176072
30032052	M25 J14 clockwise exit slip for (Heathrow) T5	29/02/16 - 20/03/16	503800	176100
30032055	M25 J14 anti-clockwise from (Heathrow) T5 before A3113 anti-clockwise access	29/02/16 - 20/03/16	504055	176033
30032227	M25 J17 anti-clockwise exit	29/02/16 - 20/03/16	503512	194518
30032231	M25 anti-clockwise between J18 and J17	29/02/16 - 20/03/16	503649	194711
30032236	M25 J18 clockwise exit	29/02/16 - 20/03/16	504079	196025
30032238	M25 clockwise between J17 and J18	29/02/16 - 20/03/16	504001	195805
30032242	M25 J18 anti-clockwise exit	29/02/16 - 20/03/16	504281	196622
30032267	M25 anti-clockwise between J28 and J27	29/02/16 - 20/03/16	551911	197057
30032362	M25 clockwise between J27 and J28	29/02/16 - 20/03/16	548383	199245
30032389	A2 eastbound between A227 and M2xA289	29/02/16 - 20/03/16	569399	169578
30032430	A282 northbound distributor between A2 and A296xA225	29/02/16 - 20/03/16	555661	172375
30032434	M25 anti-clockwise within J18	29/02/16 - 20/03/16	504236	196289
30032436	M25 J18 anti-clockwise access	29/02/16 - 20/03/16	504163	196084
30032586	M25 clockwise between J18 and J19	29/02/16 - 20/03/16	505461	198181
30032594	M25 J19 clockwise exit	05/10/15 - 25/10/15	506804	198873
30032596	link road from A41 roundabout to M25 J19 anti-clockwise	29/02/16 - 20/03/16	506995	198997
30032600	M25 anti-clockwise between J19 and J18	29/02/16 - 20/03/16	504275	197295
30032761	M25 anti-clockwise between J11 and J10	29/02/16 - 20/03/16	507373	159489
30032772	M25 anti-clockwise between J10 and J9	29/02/16 - 20/03/16	509463	158373
30032780	M25 clockwise within J10	29/02/16 - 20/03/16	507831	159351
30032781	M25 J10 clockwise access	29/02/16 - 20/03/16	507818	159331
30032783	M25 J10 anti-clockwise exit	29/02/16 - 20/03/16	507871	159377
30032805	M25 J28 anti-clockwise access	29/02/16 - 20/03/16	556545	192601

TRIS ref	Site description	Dates used	Easting	Northing
30032806	M25 anti-clockwise within J28	29/02/16 - 20/03/16	556559	192618
30032807	M25 anti-clockwise between J29 and J28	29/02/16 - 20/03/16	557285	190698
30032811	M25 clockwise between J28 and J29	29/02/16 - 20/03/16	557626	189862
30032833	M25 anti-clockwise between J20 and J19	29/02/16 - 20/03/16	507415	199650
30032837	M25 clockwise within J21	29/02/16 - 20/03/16	511526	203173
30032840	M25 clockwise between J20 and J21	29/02/16 - 20/03/16	509291	202848
30032858	M25 J28 clockwise access	29/02/16 - 20/03/16	556975	192157
30032862	M25 J28 clockwise exit	29/02/16 - 20/03/16	556475	192782
30032863	M25 clockwise within J28	29/02/16 - 20/03/16	556470	192780
30032891	link road from M25 J21 clockwise to M1 J6A northbound	29/02/16 - 20/03/16	511192	203073
30032895	link road from M1 J6A southbound to M25 J21 anti-clockwise	29/02/16 - 20/03/16	511304	203075
30032896	M25 anti-clockwise within J21	29/02/16 - 20/03/16	511295	203079
30032897	M25 J21A anti-clockwise access	29/02/16 - 20/03/16	511980	203191
30032899	M25 anti-clockwise between J21 and J20	29/02/16 - 20/03/16	508875	202630
30032909	M25 J20 clockwise exit	29/02/16 - 20/03/16	507460	200810
30032910	M25 clockwise within J20	29/02/16 - 20/03/16	507468	200814
30032911	M25 J20 anti-clockwise access	29/02/16 - 20/03/16	507500	200792
30032912	M25 anti-clockwise within J20	29/02/16 - 20/03/16	507484	200788
30033133	M25 J21A clockwise exit	29/02/16 - 20/03/16	512104	203211
30033134	M25 clockwise between J21 and J21A	29/02/16 - 20/03/16	512427	203145
30033135	M25 anti-clockwise between J21A and J21	29/02/16 - 20/03/16	512420	203130
30033136	link road from M1 J6A southbound to M25 J21 clockwise	29/02/16 - 20/03/16	512430	203156
30033137	link road from M25 J21 anti-clockwise to M1 J6A northbound	29/02/16 - 20/03/16	512417	203122
30033140	M25 clockwise within J21A	29/02/16 - 20/03/16	512847	202972

TRIS ref	Site description	Dates used	Easting	Northing
30033141	M25 J21A clockwise access	29/02/16 - 20/03/16	512853	202989
30033144	M25 J21A anti-clockwise exit	29/02/16 - 20/03/16	512925	202899
30033160	M25 anti-clockwise between J22 and J21A	29/02/16 - 20/03/16	516105	202781
30034080	M25 clockwise between J29 and J30	29/02/16 - 20/03/16	558183	183949
30034095	M25 anti-clockwise between J30 and J29	29/02/16 - 20/03/16	558345	184950
30034104	M25 J30 clockwise exit	29/02/16 - 20/03/16	557566	180373
30034106	M25 J30 anti-clockwise access	29/02/16 - 20/03/16	557515	180390
30034110	M25 anti-clockwise between J23 and J22	29/02/16 - 20/03/16	520986	202075
30034111	M25 clockwise between J22 and J23	29/02/16 - 20/03/16	520838	202212
30034119	M25 clockwise within J22	29/02/16 - 20/03/16	519055	203329
30034120	M25 anti-clockwise within J22	29/02/16 - 20/03/16	519050	203309
30034121	M25 clockwise between J21A and J22	29/02/16 - 20/03/16	518436	203048
30034151	M25 J22 anti-clockwise access	29/02/16 - 20/03/16	518737	203209
30034153	M25 J22 clockwise exit	29/02/16 - 20/03/16	518829	203302
30034155	M25 J22 anti-clockwise exit	29/02/16 - 20/03/16	519375	203282
30034157	M25 J22 clockwise access	29/02/16 - 20/03/16	519393	203327
30034168	M25 J23 clockwise exit	29/02/16 - 20/03/16	522192	200434
30034169	M25 clockwise within J23	29/02/16 - 20/03/16	522186	200429
30034170	M25 J23 anti-clockwise access	29/02/16 - 20/03/16	522283	200245
30034172	M25 J29 clockwise exit	29/02/16 - 20/03/16	558263	188962
30034173	M25 clockwise within J29	29/02/16 - 20/03/16	558253	188956
30034175	M25 J29 anti-clockwise access	29/02/16 - 20/03/16	558291	188768
30034178	M25 anti-clockwise within J29	29/02/16 - 20/03/16	558509	188303
30034179	M25 J29 clockwise access	29/02/16 - 20/03/16	558555	188309

TRIS ref	Site description	Dates used	Easting	Northing
30034190	M25 J29 anti-clockwise exit	29/02/16 - 20/03/16	558567	188125
30034341	M25 anti-clockwise within J10	29/02/16 - 20/03/16	508314	159151
30034342	M25 J10 anti-clockwise access	29/02/16 - 20/03/16	508326	159164
30034343	M25 J10 clockwise exit	29/02/16 - 20/03/16	508365	159083
30034345	A282 northbound within the A296xA225 junction	29/02/16 - 20/03/16	555752	172540
30034441	M25 J6 anti-clockwise exit	29/02/16 - 20/03/16	534633	152801
30034553	M25 clockwise between J9 and J10	29/02/16 - 20/03/16	510496	157763
30035027	M25 clockwise at the Clacket Lane services between J5 and J6	29/02/16 - 20/03/16	542554	154604
30035029	M25 clockwise at the Clacket Lane services slip road between J5 and J6	29/02/16 - 20/03/16	542549	154588
30035031	M25 anti-clockwise at the Clacket Lane services between J6 and J5	29/02/16 - 20/03/16	542082	154528
30035032	M25 anti-clockwise at the Clacket Lane services slip road between J6 and J5	29/02/16 - 20/03/16	542090	154553
30035035	M25 clockwise between J5 and J6	29/02/16 - 20/03/16	541153	154098
30035054	M25 anti-clockwise between J6 and J5	29/02/16 - 20/03/16	547514	156220
30035065	M25 clockwise between J5 and J6	29/02/16 - 20/03/16	548774	156504
30035070	link road from M25 J5 anti-clockwise to M26xA21	29/02/16 - 20/03/16	549304	156767
30035071	M25 clockwise within J6	29/02/16 - 20/03/16	534891	152821
30035072	M25 anti-clockwise within J6	29/02/16 - 20/03/16	534901	152839
30035075	M25 J6 anti-clockwise access	29/02/16 - 20/03/16	535491	152888
30035093	M25 anti-clockwise between J6 and J5	29/02/16 - 20/03/16	538588	154068
30035102	M25 clockwise between J23 and J24	29/02/16 - 20/03/16	525961	199930
30035104	M25 J24 clockwise exit	29/02/16 - 20/03/16	526368	200178
30035106	M25 J24 anti-clockwise access	29/02/16 - 20/03/16	526399	200115
30035107	M25 anti-clockwise within J24	29/02/16 - 20/03/16	526395	200139
30035108	M25 J24 clockwise access	29/02/16 - 20/03/16	526734	200372

TRIS ref	Site description	Dates used	Easting	Northing
30035109	M25 clockwise within J24	29/02/16 - 20/03/16	526737	200348
30035110	M25 J24 anti-clockwise exit	29/02/16 - 20/03/16	526731	200297
30035114	M25 clockwise between J24 and J25	29/02/16 - 20/03/16	527696	200179
30035123	M25 anti-clockwise between J24 and J23	29/02/16 - 20/03/16	525159	199997
30035143	M25 J23 anti-clockwise exit	29/02/16 - 20/03/16	522721	199964
30035144	M25 anti-clockwise within J23	05/10/15 - 25/10/15	522570	200072
30035153	M25 J25 clockwise exit	29/02/16 - 20/03/16	534588	200051
30035155	M25 J25 anti-clockwise access	29/02/16 - 20/03/16	534584	199998
30035156	M25 anti-clockwise within J25	29/02/16 - 20/03/16	534581	200014
30035159	M25 J25 clockwise access	29/02/16 - 20/03/16	535298	200069
30035160	M25 clockwise within J25	29/02/16 - 20/03/16	535295	200054
30035161	M25 J25 anti-clockwise exit	29/02/16 - 20/03/16	535277	200019
30035177	M25 anti-clockwise between J25 and J24	29/02/16 - 20/03/16	532421	200703
30035759	A20 eastbound between M20 J11A and M20 J12	29/02/16 - 20/03/16	619147	137191
30035760	A20 westbound between M20 J12 and M20 J11A	29/02/16 - 20/03/16	619150	137182
30035826	M25 J26 anti-clockwise exit	29/02/16 - 20/03/16	540969	199827
30035829	M25 clockwise between J25 and J26	29/02/16 - 20/03/16	537946	199865
30035831	M25 anti-clockwise between J26 and J25	29/02/16 - 20/03/16	538926	199842
30035846	M25 clockwise between J26 and J27	29/02/16 - 20/03/16	543811	200928
30035849	M25 anti-clockwise between J27 and J26	29/02/16 - 20/03/16	544101	200965
30035850	M25 clockwise within J27 before M11 J6 northbound access	29/02/16 - 20/03/16	546898	200014
30035864	M25 J26 clockwise exit	29/02/16 - 20/03/16	540204	199664
30035873	M25 anti-clockwise within J27 before M11 J6 southbound access	29/02/16 - 20/03/16	546884	200003
30035875	M25 J26 clockwise access	29/02/16 - 20/03/16	540495	199704

TRIS ref	Site description	Dates used	Easting	Northing
30035876	M25 J26 anti-clockwise access	29/02/16 - 20/03/16	540503	199654
30035881	link road from M25 J27 clockwise to M11 J6 northbound	29/02/16 - 20/03/16	547082	200200
30035882	link road from M25 J27 clockwise to M11 J6 southbound	29/02/16 - 20/03/16	547044	200138
30035883	link road from M11 J6 northbound to M25 J27 anti-clockwise	29/02/16 - 20/03/16	546584	200022
30035886	link road from M11 J6 southbound to M25 J27 clockwise	29/02/16 - 20/03/16	547312	199963
30035887	M25 clockwise within J27 after M11 J6 northbound access	29/02/16 - 20/03/16	547380	199892
30035890	link road from M11 J6 northbound to M25 J27 clockwise	29/02/16 - 20/03/16	547095	200029
30036473	A282 southbound exit for A206	29/02/16 - 20/03/16	555982	175115
30360380	M2 eastbound between J6 and J7	05/10/15 - 25/10/15	602808	159482
30360381	M2 westbound between J7 and J6	29/02/16 - 20/03/16	602790	159438
30360384	M2 eastbound between J4 and J5	29/02/16 - 20/03/16	582338	163599
30360400	M20 westbound between J11 and J10	05/10/15 - 25/10/15	605773	140076
30360416	M20 eastbound between J11 and J11A	29/02/16 - 20/03/16	614684	137164
30360417	M20 westbound between J11A and J11	29/02/16 - 20/03/16	614906	137084
30360423	A21 southbound between A228 and B2160	29/02/16 - 20/03/16	563928	140189
30360425	A21 northbound between A26 near Tonbridge (west) and A225	29/02/16 - 20/03/16	557004	145171
30360426	A21 southbound between A225 and A26 near Tonbridge (west)	29/02/16 - 20/03/16	557077	145158
30360428	A21 northbound between A225 and A25	29/02/16 - 20/03/16	553854	151708
30360436	A21 Pembury Road	29/02/16 - 20/03/16	560181	144603
30360437	A21 southbound between A26 near Tonbridge (east) and A228	29/02/16 - 20/03/16	560241	144563
30360479	A21 London Road	05/10/15 - 25/10/15	573239	127764
30360480	A21 London Road	05/10/15 - 25/10/15	573247	127767
30360512	M3 westbound between J1 and J2	29/02/16 - 20/03/16	505889	167180
30360514	A2 westbound between M25xA282 and A2018	29/02/16 - 20/03/16	554850	171999

TRIS ref	Site description	Dates used	Easting	Northing
30360515	A2 eastbound between A2018 and M25xA282	29/02/16 - 20/03/16	554822	172019
30360516	M20 westbound between J2 and J1	06/10/15 - 25/10/15	558969	160423
30360517	M20 eastbound between J1 and J2	29/02/16 - 20/03/16	559140	160332
30360519	link road from M20 J1 westbound to M25 J3	29/02/16 - 20/03/16	553520	167459
30360520	M26 eastbound between M25xA21 and J2A	29/02/16 - 20/03/16	552993	158427
30360529	A13 eastbound between A1306 near Aveley and M25_A282	09/04/15 - 29/04/15	555563	179765
30360530	A13 westbound between M25_A282 and A1306 near Aveley	09/04/15 - 29/04/15	555613	179668
30360535	M11 northbound access from A406 (north)	29/02/16 - 20/03/16	541474	190630
30360537	M11 southbound between J6 and J5	29/02/16 - 20/03/16	545334	196691
30360538	M11 northbound between J5 and J6	29/02/16 - 20/03/16	545224	196556
30360553	link road from M40 J1A southbound to M25 J16 clockwise	29/02/16 - 20/03/16	501421	185907
30360555	link road from M40 J1A northbound to M25 J16 clockwise	29/02/16 - 20/03/16	501813	185473
30360556	link road from M40 J1A southbound to M25 J16 anti-clockwise	29/02/16 - 20/03/16	501888	185402
30360575	M25 spur (Orpington) eastbound between A224 and M25	29/02/16 - 20/03/16	549500	162942
30360576	M25 spur (Orpington) westbound between M25 and A224	29/02/16 - 20/03/16	549388	162963
30360624	link road from M11 J6 southbound to M25 J27 anti-clockwise	02/11/15 - 22/11/15	547155	199849
30360636	M3 westbound between J1 and J2	05/10/15 - 25/10/15	505889	167166
30360664	A23 southbound between A237 and B2031	29/02/16 - 20/03/16	528931	157041
30360665	A23 northbound between B2031 and A237	29/02/16 - 20/03/16	528916	157044
30360669	A20 eastbound exit for M25xM20	29/02/16 - 20/03/16	552528	167880
30360670	M20 eastbound within J1 before M25 J3 roundabout access	29/02/16 - 20/03/16	552497	167861
30360699	A120 eastbound between B1256 near Great Dunmow (West) and B1008_B1256	05/10/15 - 25/10/15	562096	221213
30360700	A120 westbound between B1008/B1256 and B1256 near Great Dunmow (west)	05/10/15 - 25/10/15	562077	221200
30360701	A12 northbound between A414 near Chelmsford (west) and B1007	29/02/16 - 20/03/16	569105	202406

TRIS ref	Site description	Dates used	Easting	Northing
30360702	A12 southbound between B1007 and A414 near Chelmsford (west)	29/02/16 - 20/03/16	569104	202395
30360707	A12 southbound between A1023 and M25	29/02/16 - 20/03/16	558366	194241
30360708	A12 northbound between M25 and A1023	29/02/16 - 20/03/16	558354	194244
30025309+30027981	M20 westbound within J5	29/02/16 - 20/03/16	573320	158154
30025338+30033128	M20 westbound between J7 and J6	29/02/16 - 20/03/16	576152	158340
30030177+30030178	A282 southbound within the A296xA225 junction	29/02/16 - 20/03/16	555728	173207
30032828+30032829	M25 clockwise between J19 and J20	29/02/16 - 20/03/16	507328	199457
30033138+30033139	M25 anti-clockwise within J21A	29/02/16 - 20/03/16	512727	203010
30035013+30035014	M25 anti-clockwise between J7 and J6	29/02/16 - 20/03/16	534131	152715
30036472+30036475	A282 northbound Dartford Crossing	29/02/16 - 20/03/16	556211	175420

Table A.2 DfT count locations used in the LTAM development

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
16072	A1	08/05/15	522070	199000	Hertfordshire	A	2-Way
36079	A1	10/09/15	521110	196000	Greater London (North)	A	2-Way
8383	A1(M)	10/06/15	522400	209935	Hertfordshire	A	2-Way
28519	A1(M)	19/05/15	521497	206562	Hertfordshire	A	2-Way
16174	A10	17/04/15	534880	199900	Greater London (East)	A	2-Way
26179	A10	03/09/15	535930	204557	Hertfordshire	A	2-Way
26180	A10	07/05/15	533960	195000	Greater London (East)	A	2-Way
36184	A10	03/11/15	535300	202000	Hertfordshire	A	2-Way
48303	A10	02/06/15	535148	200498	Hertfordshire	A	2-Way
17424	A1000	22/04/15	523000	208000	Hertfordshire	A	2-Way
47499	A1000	15/05/15	525223	205435	Hertfordshire	A	2-Way
37542	A1010	14/04/15	536040	199900	Greater London (East)	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
16185	A104	01/07/15	540460	193180	Greater London (East)	A	2-Way
26199	A104	06/05/15	539940	191700	Greater London (East)	A	2-Way
26645	A104	28/04/15	539350	190330	Greater London (East)	A	2-Way
58392	A1055	18/09/15	536680	198000	Greater London (East)	A	2-Way
28478	A1060	24/09/15	570700	206600	Essex	A	2-Way
16644	A1089	07/05/15	563800	176170	Thurrock	A	2-Way
83001	A1090	28/04/15	556214	178452	Thurrock	A	2-Way
18737	A110	15/04/15	532690	196560	Greater London (North)	A	2-Way
28884	A110	07/07/15	532500	196470	Greater London (North)	A	2-Way
78362	A111	09/09/15	527140	199000	Greater London (North)	A	2-Way
17472	A1112	22/04/15	548440	188980	Greater London (East)	A	2-Way
38635	A1114	21/05/15	569800	205430	Essex	A	2-Way
16626	A112	08/06/15	537360	193000	Greater London (East)	A	2-Way
48115	A113	09/09/15	546500	196700	Essex	A	2-Way
8584	A1158	05/10/15	585915	187000	Southend-on-Sea	A	2-Way
70217	A1158	14/09/15	585950	188020	Southend-on-Sea	A	2-Way
70218	A1158	10/07/15	586100	187950	Southend-on-Sea	A	2-Way
38134	A1168	09/10/15	544400	195350	Essex	A	2-Way
6209	A12	16/06/15	582976	215001	Essex	A	2-Way
16196	A12	25/06/15	558600	194800	Essex	A	2-Way
18311	A12	22/04/15	574160	207400	Essex	A	2-Way
26209	A12	17/06/15	584000	216600	Essex	A	2-Way
26211	A12	19/06/15	550830	190000	Greater London (East)	A	2-Way
36212	A12	17/06/15	566900	202100	Essex	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
36213	A12	01/10/15	545000	188330	Greater London (East)	A	2-Way
38409	A12	24/04/15	570000	201700	Essex	A	2-Way
46211	A12	01/10/15	555000	191400	Greater London (East)	A	2-Way
48393	A12	23/04/15	574800	205000	Essex	A	2-Way
48454	A12	22/04/15	577800	211350	Essex	A	2-Way
56211	A12	01/06/15	550000	189130	Greater London (East)	A	2-Way
28743	A120	19/05/15	578000	222800	Essex	A	2-Way
80208	A120	21/05/15	561700	221200	Essex	A	2-Way
80209	A120	29/06/15	565300	221900	Essex	A	2-Way
80883	A120	18/06/15	553270	221700	Essex	A	2-Way
26670	A123	05/10/15	544340	190000	Greater London (East)	A	2-Way
38101	A1245	18/09/15	577800	194050	Essex	A	2-Way
7889	A125	01/07/15	552000	183400	Greater London (East)	A	2-Way
16643	A125	02/06/15	551000	189100	Greater London (East)	A	2-Way
26673	A125	16/06/15	552000	185000	Greater London (East)	A	2-Way
78381	A126	10/07/15	558920	179250	Thurrock	A	2-Way
16646	A127	30/06/15	568300	190000	Essex	A	2-Way
26676	A127	14/04/15	560000	188700	Essex	A	2-Way
36697	A127	09/10/15	571400	190930	Essex	A	2-Way
46683	A127	19/06/15	581000	189570	Essex	A	2-Way
56662	A127	16/06/15	575000	190940	Essex	A	2-Way
56663	A127	21/09/15	554050	190000	Greater London (East)	A	2-Way
56675	A127	23/04/15	579700	189700	Essex	A	2-Way
77131	A127	18/09/15	567000	190190	Essex	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
78379	A127	28/09/15	557600	188670	Greater London (East)	A	2-Way
99319	A127	09/06/15	585200	188300	Southend-on-Sea	A	2-Way
99380	A127	22/04/15	584000	188290	Southend-on-Sea	A	2-Way
99492	A127	15/06/15	586920	187850	Southend-on-Sea	A	2-Way
6664	A128	13/03/15	560500	193160	Essex	A	2-Way
16648	A129	26/06/15	570400	191780	Essex	A	2-Way
16651	A129	09/09/15	578417	191856	Essex	A	2-Way
77202	A129	17/04/15	578000	192120	Essex	A	2-Way
6213	A13	13/03/15	569000	184400	Thurrock	A	2-Way
7911	A13	20/05/15	560000	179800	Thurrock	A	2-Way
18526	A13	08/10/15	545000	183238	Greater London (East)	A	2-Way
27931	A13	27/04/15	562400	181080	Thurrock	A	2-Way
38462	A13	14/04/15	566000	181600	Thurrock	A	2-Way
46216	A13	11/09/15	554000	180360	Greater London (East)	A	2-Way
56214	A13	01/06/15	572000	186800	Essex	A	2-Way
56327	A13	03/07/15	564560	181000	Thurrock	A	2-Way
70027	A13	09/06/15	558200	180000	Thurrock	A	2-Way
71000	A13	21/10/15	549010	182900	Greater London (East)	A	2-Way
73500	A13	23/06/15	581500	186770	Essex	A	2-Way
74608	A13	16/06/15	563550	180810	Thurrock	A	2-Way
84030	A13	24/06/15	574600	188110	Essex	A	2-Way
84031	A13	11/09/15	576054	188284	Essex	A	2-Way
84032	A13	21/04/15	576092	188469	Essex	A	2-Way
99819	A13	15/04/15	556000	179330	Thurrock	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
99902	A13	20/05/15	547000	183620	Greater London (East)	A	2-Way
99903	A13	12/10/15	551300	181730	Greater London (East)	A	2-Way
56682	A130	25/09/15	577275	185478	Essex	A	2-Way
75042	A130	11/05/15	574120	209420	Essex	A	2-Way
77130	A130	22/04/15	575600	199000	Essex	A	2-Way
77150	A130	13/04/15	577819	184737	Essex	A	2-Way
80706	A130	04/06/15	577330	193680	Essex	A	2-Way
84033	A130	05/06/15	576251	188637	Essex	A	2-Way
84034	A130	03/07/15	577300	190000	Essex	A	2-Way
74510	A1306	01/07/15	548800	183550	Greater London (East)	A	2-Way
78380	A1306	10/07/15	554320	181500	Greater London (East)	A	2-Way
83002	A1306	23/09/15	556500	178780	Thurrock	A	2-Way
6670	A132	24/04/15	573000	188760	Essex	A	2-Way
47950	A132	22/06/15	573210	191000	Essex	A	2-Way
77199	A132	25/06/15	574000	191820	Essex	A	2-Way
80768	A132	20/05/15	577160	195230	Essex	A	2-Way
6097	A2	15/06/15	550000	174100	Greater London (East)	A	2-Way
16092	A2	08/07/15	558059	172559	Kent	A	2-Way
26102	A2	02/07/15	545080	175090	Greater London (East)	A	2-Way
36099	A2	23/04/15	555000	172000	Kent	A	2-Way
36100	A2	24/04/15	568260	169610	Kent	A	2-Way
36497	A2	11/09/15	548451	174316	Greater London (East)	A	2-Way
38664	A2	19/06/15	543000	175000	Greater London (East)	A	2-Way
46097	A2	07/10/15	560000	172670	Kent	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
56095	A2	12/06/15	595000	162520	Kent	A	2-Way
56098	A2	07/10/15	567000	170000	Kent	A	2-Way
56104	A2	22/06/15	618090	155087	Kent	A	2-Way
70214	A2	25/09/15	576300	167560	Medway	A	2-Way
81428	A2	08/07/15	563145	171597	Kent	A	2-Way
81429	A2	15/06/15	564022	171236	Kent	A	2-Way
81430	A2	05/05/15	564979	170785	Kent	A	2-Way
6243	A20	24/06/15	542000	173300	Greater London (East)	A	2-Way
16232	A20	08/05/15	582700	154400	Kent	A	2-Way
36247	A20	30/06/15	551885	167878	Kent	A	2-Way
36248	A20	01/06/15	563020	158300	Kent	A	2-Way
36249	A20	18/06/15	573290	157900	Kent	A	2-Way
36252	A20	12/05/15	606000	140000	Kent	A	2-Way
46245	A20	23/09/15	546400	170630	Greater London (East)	A	2-Way
46249	A20	20/05/15	583100	154225	Kent	A	2-Way
56229	A20	25/09/15	554000	167300	Kent	A	2-Way
7548	A2011	05/05/15	529000	138420	West Sussex	A	2-Way
74581	A2014	23/04/15	559580	144920	Kent	A	2-Way
58369	A2016	07/07/15	546340	179820	Greater London (East)	A	2-Way
17512	A2022	08/05/15	532000	160900	Greater London (South)	A	2-Way
80608	A2044	15/05/15	526140	148680	Surrey	A	2-Way
78138	A2050	09/07/15	612300	158120	Kent	A	2-Way
26783	A206	05/11/15	550000	178460	Greater London (East)	A	2-Way
6762	A207	16/10/15	551200	174780	Greater London (East)	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
38727	A207	05/11/15	551474	174742	Greater London (East)	A	2-Way
17755	A217	03/07/15	525370	150200	Surrey	A	2-Way
36820	A217	17/04/15	525000	160700	Surrey	A	2-Way
28022	A22	18/06/15	535700	152380	Surrey	A	2-Way
36263	A22	24/06/15	535000	153200	Surrey	A	2-Way
56264	A22	01/07/15	541960	132000	East Sussex	A	2-Way
57734	A22	29/06/15	531480	161370	Greater London (South)	A	2-Way
60087	A220	16/04/15	549965	174230	Greater London (East)	A	2-Way
46256	A224	03/06/15	550408	160335	Kent	A	2-Way
36832	A225	16/06/15	555000	173340	Kent	A	2-Way
36833	A225	24/04/15	553545	153203	Kent	A	2-Way
36835	A226	15/09/15	553600	174180	Kent	A	2-Way
6791	A228	09/09/15	573000	168800	Medway	A	2-Way
56827	A228	10/09/15	575461	171564	Medway	A	2-Way
81215	A228	18/05/15	568441	159060	Kent	A	2-Way
26818	A229	03/06/15	575701	157048	Kent	A	2-Way
26820	A229	05/06/15	575700	132000	Kent	A	2-Way
28679	A229	21/10/15	574680	163200	Kent	A	2-Way
46829	A229	20/04/15	575200	160000	Kent	A	2-Way
74854	A229	19/05/15	576000	155470	Kent	A	2-Way
74855	A229	23/06/15	576220	155550	Kent	A	2-Way
80735	A229	01/10/15	574730	162610	Kent	A	2-Way
26272	A23	02/06/15	528730	156000	Surrey	A	2-Way
38692	A23	26/06/15	531148	161740	Greater London (South)	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
56796	A230	15/09/15	575000	165200	Medway	A	2-Way
36279	A24	16/06/15	522300	163000	Surrey	A	2-Way
56650	A240	01/07/15	520000	165500	Greater London (South)	A	2-Way
38112	A243	09/09/15	516800	158000	Surrey	A	2-Way
78149	A244	19/06/15	515500	159310	Surrey	A	2-Way
17760	A245	10/09/15	501000	160320	Surrey	A	2-Way
46911	A245	24/04/15	510000	160544	Surrey	A	2-Way
78395	A245	25/06/15	508000	161110	Surrey	A	2-Way
7792	A246	28/09/15	513700	154430	Surrey	A	2-Way
6817	A249	05/05/15	587560	164000	Kent	A	2-Way
36857	A249	24/09/15	579197	158412	Kent	A	2-Way
7785	A25	13/10/15	525450	150280	Surrey	A	2-Way
36285	A25	07/07/15	525540	150300	Surrey	A	2-Way
36287	A25	10/09/15	546800	155000	Kent	A	2-Way
78272	A25	01/10/15	537500	151860	Surrey	A	2-Way
36858	A251	20/05/15	600917	153070	Kent	A	2-Way
16795	A255	21/04/15	636800	165000	Kent	A	2-Way
17812	A256	10/09/15	631330	142000	Kent	A	2-Way
57883	A256	12/05/15	637600	167970	Kent	A	2-Way
84050	A256	11/06/15	633414	161288	Kent	A	2-Way
56878	A26	01/06/15	558260	139800	Kent	A	2-Way
36875	A260	21/04/15	621358	139650	Kent	A	2-Way
99921	A260	30/04/15	623430	136570	Kent	A	2-Way
6837	A262	28/09/15	575000	137500	Kent	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
8248	A264	08/07/15	531000	138815	West Sussex	A	2-Way
78333	A264	20/05/15	560480	140222	Kent	A	2-Way
36882	A267	17/09/15	558156	133422	East Sussex	A	2-Way
46883	A274	24/03/15	580000	152070	Kent	A	2-Way
36895	A278	22/05/15	579685	163494	Medway	A	2-Way
36302	A28	30/06/15	584755	131856	Kent	A	2-Way
74784	A28	20/03/15	600540	143100	Kent	A	2-Way
38792	A282	25/09/15	556200	175400	Kent	A	2-Way
56681	A282	21/04/15	555740	172920	Kent	A	2-Way
86048	A282	28/09/15	555470	174470	Kent	A	2-Way
70381	A289	13/04/15	572800	170920	Medway	A	2-Way
70382	A289	21/10/15	571000	170230	Kent	A	2-Way
70385	A289	08/05/15	575000	170830	Medway	A	2-Way
16839	A299	19/05/15	620000	167150	Kent	A	2-Way
26888	A299	29/06/15	608331	162854	Kent	A	2-Way
70033	A299	07/05/15	613620	165000	Kent	A	2-Way
75184	A299	18/05/15	610950	164430	Kent	A	2-Way
75185	A299	07/05/15	610880	164500	Kent	A	2-Way
84048	A299	15/05/15	632269	165565	Kent	A	2-Way
84049	A299	03/06/15	635318	164883	Kent	A	2-Way
78216	A2990	09/09/15	611450	165000	Kent	A	2-Way
7782	A3	24/09/15	509100	160370	Surrey	A	2-Way
16104	A3	16/10/15	519000	165200	Greater London (South)	A	2-Way
17969	A3	14/04/15	505000	155300	Surrey	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
26190	A3	25/09/15	510100	160970	Surrey	A	2-Way
46112	A3	02/07/15	515000	162440	Surrey	A	2-Way
48580	A3	14/04/15	518000	165415	Greater London (South)	A	2-Way
27990	A30	01/10/15	501870	171900	Surrey	A	2-Way
38579	A30	20/05/15	507659	173231	Greater London (South)	A	2-Way
46312	A30	10/09/15	499050	170000	Surrey	A	2-Way
56311	A30	10/06/15	497900	168600	Surrey	A	2-Way
7572	A3044	04/06/15	506000	177830	Greater London (South)	A	2-Way
7969	A3113	04/06/15	504000	175400	Greater London (South)	A	2-Way
6901	A316	02/07/15	512000	171800	Greater London (South)	A	2-Way
26921	A316	22/09/15	510970	170950	Greater London (South)	A	2-Way
37990	A317	22/04/15	503000	164740	Surrey	A	2-Way
6905	A320	15/06/15	501350	160200	Surrey	A	2-Way
36955	A320	24/04/15	502123	163465	Surrey	A	2-Way
46933	A320	09/07/15	502300	164000	Surrey	A	2-Way
6430	A40	22/04/15	502700	186880	Buckinghamshire	A	2-Way
26435	A40	07/05/15	504000	186300	Buckinghamshire	A	2-Way
46437	A40	24/06/15	505000	185700	Buckinghamshire	A	2-Way
99435	A4008	10/09/15	511800	197000	Hertfordshire	A	2-Way
27092	A4020	04/06/15	505300	184100	Greater London (North)	A	2-Way
56944	A4020	20/04/15	506040	183500	Greater London (North)	A	2-Way
7053	A405	14/10/15	511990	202220	Hertfordshire	A	2-Way
57111	A405	11/06/15	511754	201116	Hertfordshire	A	2-Way
7058	A406	23/09/15	536850	191500	Greater London (East)	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
17022	A406	07/07/15	540000	190450	Greater London (East)	A	2-Way
28672	A406	08/10/15	543450	185670	Greater London (East)	A	2-Way
37116	A406	09/10/15	539000	190670	Greater London (East)	A	2-Way
48611	A406	22/05/15	542050	187900	Greater London (East)	A	2-Way
56029	A406	11/05/15	541480	188910	Greater London (East)	A	2-Way
58231	A406	14/10/15	543792	183560	Greater London (East)	A	2-Way
58232	A406	22/10/15	541000	190361	Greater London (East)	A	2-Way
6456	A41	01/07/15	513140	197800	Hertfordshire	A	2-Way
9015	A41	03/09/15	505820	203140	Hertfordshire	A	2-Way
84058	A41	10/06/15	509005	199553	Hertfordshire	A	2-Way
84060	A41	18/05/15	509228	199673	Hertfordshire	A	2-Way
84061	A41	27/04/15	509564	199697	Hertfordshire	A	2-Way
84062	A41	20/04/15	509478	199957	Hertfordshire	A	2-Way
37121	A411	26/06/15	524000	196420	Greater London (North)	A	2-Way
37122	A411	13/10/15	511500	196280	Hertfordshire	A	2-Way
78353	A411	25/09/15	508662	199326	Hertfordshire	A	2-Way
16184	A414	16/04/15	547470	207600	Essex	A	2-Way
17624	A414	12/06/15	508800	207560	Hertfordshire	A	2-Way
18372	A414	24/06/15	569450	205000	Essex	A	2-Way
36198	A414	26/06/15	546940	210600	Essex	A	2-Way
99944	A414	10/07/15	505250	205410	Hertfordshire	A	2-Way
78350	A4145	21/04/15	507720	194000	Hertfordshire	A	2-Way
49016	A4251	08/06/15	504565	206015	Hertfordshire	A	2-Way
36147	A5183	22/05/15	516300	200000	Hertfordshire	A	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941155	B1006 High Road	19/06/15	576919	187384	Essex	B	2-Way
941136	B1007 Galleywood Road	18/06/15	570275	204463	Essex	B	2-Way
941148	B1009 Beehive Lane	27/03/15	571529	204600	Essex	B	2-Way
941066	B1010 Burnham Road	14/10/15	581590	204307	Essex	B	2-Way
941132	B1013 Main Road	15/06/15	584879	191219	Essex	B	2-Way
951532	B1013 Southend Road	07/07/15	584023	192438	Essex	B	2-Way
951525	B1021 Burnham Road	23/06/15	595255	198725	Essex	B	2-Way
941115	B1021 Tillingham Road	27/04/15	597511	201651	Essex	B	2-Way
941067	B1022 Maldon Road	23/10/15	588139	214792	Essex	B	2-Way
941093	B1022 Maldon Road	20/10/15	587293	213792	Essex	B	2-Way
941100	B1026 Goldhanger Road	24/03/15	587473	207905	Essex	B	2-Way
941071	B1026 Maldon Road	01/10/15	588789	208066	Essex	B	2-Way
941079	B1026 Maldon Road	29/09/15	590015	209005	Essex	B	2-Way
941063	B1053 Braintree Road	18/09/15	571284	230950	Essex	B	2-Way
941116	B1057	25/06/15	566128	228725	Essex	B	2-Way
941103	B1133 Water Lane	22/05/15	542481	207846	Essex	B	2-Way
941145	B1137 Main Road	01/06/15	575945	210379	Essex	B	2-Way
941072	B1256 Stortford Road	03/06/15	558845	221335	Essex	B	2-Way
942420	B1421 Corbets Tey Road	06/07/15	555954	185336	Greater London (East)	B	2-Way
941153	B148 West Mayne	04/06/15	566091	188891	Essex	B	2-Way
942972	B160 Winchester Road	06/10/15	538405	191267	Greater London (East)	B	2-Way
942423	B174 Collier Row Road	28/09/15	549617	191033	Greater London (East)	B	2-Way
942831	B177 Barley Lane	20/10/15	546799	189134	Greater London (East)	B	2-Way
941074	B181 Epping Road	26/03/15	542414	207119	Essex	B	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941114	B181 Lindsey Street	09/06/15	545210	203481	Essex	B	2-Way
941118	B184 Dunmow Road	26/06/15	561447	229971	Essex	B	2-Way
941095	B184 Ongar Road	08/05/15	562632	220811	Essex	B	2-Way
942201	B186 South Road	25/09/15	559218	181780	Thurrock	B	2-Way
942493	B191 Bennett's Castle Lane	16/09/15	547381	185819	Greater London (East)	B	2-Way
941117	B194 Nazeing New Road	13/04/15	537985	206442	Essex	B	2-Way
941461	B198 Lieutenant Ellis Way	01/10/15	533976	201740	Hertfordshire	B	2-Way
945720	B2000 Station Road	06/10/15	573493	175347	Medway	B	2-Way
945724	B2001 Grain Road	22/09/15	587551	175762	Medway	B	2-Way
945521	B2008 Minster Road	19/03/15	594181	172692	Kent	B	2-Way
945491	B2011 New Dover Road	22/04/15	626099	138650	Kent	B	2-Way
945518	B2015 Bow Road	05/05/15	569076	153228	Kent	B	2-Way
946135	B2028 Moor Lane	10/06/15	541201	143288	Surrey	B	2-Way
946130	B2028 Racecourse Road	15/05/15	539494	143247	Surrey	B	2-Way
946126	B2032 Dorking Road	28/04/15	522206	153743	Surrey	B	2-Way
946122	B2032 Outwood Lane	12/10/15	526751	156978	Surrey	B	2-Way
946124	B2033 Headley Common Road	22/10/15	521261	153067	Surrey	B	2-Way
946161	B2037 Effingham Road	12/05/15	532489	140842	Surrey	B	2-Way
945519	B2050 Manston Road	21/05/15	636362	165612	Kent	B	2-Way
945514	B2050 Park Lane	29/06/15	630412	168750	Kent	B	2-Way
945480	B2067 Brook Street	25/09/15	591204	134052	Kent	B	2-Way
945520	B2068 Nackington Road	11/05/15	615844	156498	Kent	B	2-Way
945487	B2068 Stone Street	11/09/15	613527	146580	Kent	B	2-Way
945479	B2080	29/09/15	595867	129218	Kent	B	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
945486	B2080 Reading Street	30/04/15	592655	130584	Kent	B	2-Way
944958	B2088	01/10/15	583221	123882	East Sussex	B	2-Way
945525	B2097 Rochester Road	27/04/15	574456	163778	Kent	B	2-Way
944966	B2110	14/04/15	548310	135825	East Sussex	B	2-Way
944965	B2110 Hartfield Road	03/07/15	543968	134716	East Sussex	B	2-Way
946455	B2110 Paddockhurst Road	11/09/15	533871	135379	West Sussex	B	2-Way
942527	B213 Abbey Road	16/03/15	547825	178936	Greater London (East)	B	2-Way
945478	B2163 Leeds Road	29/09/15	580935	150872	Kent	B	2-Way
945499	B2169	15/06/15	567577	135393	Kent	B	2-Way
945515	B2176 Penshurst Road	25/06/15	556352	143517	Kent	B	2-Way
945496	B2205 Whitstable Road	15/06/15	614448	167108	Kent	B	2-Way
945482	B2211 Sundridge Road	15/05/15	549787	158009	Kent	B	2-Way
945488	B2244 Hastings Road	29/04/15	575692	128864	Kent	B	2-Way
945510	B2249 Calverley Park Gardens	24/03/15	558999	139540	Kent	B	2-Way
945481	B245 London Road	28/04/15	555245	149912	Kent	B	2-Way
946157	B2450 Church Street	17/06/15	516633	156304	Surrey	B	2-Way
945497	B259 Park Corner Road	15/09/15	561009	172340	Kent	B	2-Way
945522	B260 Longfield Road	14/04/15	562584	167950	Kent	B	2-Way
945492	B262 Station Road	09/06/15	561010	171780	Kent	B	2-Way
945506	B269 Kent Hatch Road	08/10/15	544254	150877	Kent	B	2-Way
946145	B278 Rectory Lane	10/07/15	527767	160023	Surrey	B	2-Way
942913	B278 Woodmansterne Road	14/10/15	527677	161885	Greater London (South)	B	2-Way
942920	B283 The Crescent	07/10/15	525248	161687	Greater London (South)	B	2-Way
946151	B3121 Spinney Hill	11/06/15	503544	164077	Surrey	B	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
951746	B358 Stanley Road	28/04/15	514995	171977	Greater London (South)	B	2-Way
946147	B365 Ashley Road	17/03/15	510066	165506	Surrey	B	2-Way
946143	B376 Laleham Road	28/09/15	507598	167719	Surrey	B	2-Way
946138	B385 Woodham Lane	21/10/15	503434	161489	Surrey	B	2-Way
946114	B386 Longcross Road	06/05/15	501319	165575	Surrey	B	2-Way
946129	B388 Thorpe By-Pass	23/06/15	501621	168774	Surrey	B	2-Way
944840	B416 Gerrards Cross Road	15/10/15	498244	185167	Buckinghamshire	B	2-Way
944857	B416 Grays Park Road	01/07/15	498205	183010	Buckinghamshire	B	2-Way
942664	B465 West Drayton Road	30/06/15	507726	181534	Greater London (North)	B	2-Way
942671	B467 Swakeleys Road	22/10/15	507683	186360	Greater London (North)	B	2-Way
942662	B469 Green Lane	05/06/15	508639	191484	Greater London (North)	B	2-Way
942661	B483 Park Road	23/06/15	506144	184934	Greater London (North)	B	2-Way
941457	B556 Bell Lane	18/03/15	518443	202882	Hertfordshire	B	2-Way
941171	C	17/09/15	563054	212810	Essex	Minor	2-Way
941173	C	09/09/15	568658	225030	Essex	Minor	2-Way
944982	C	22/10/15	576029	126299	East Sussex	Minor	2-Way
945542	C	07/07/15	585666	161944	Kent	Minor	2-Way
945623	C	06/07/15	612658	143842	Kent	Minor	2-Way
951848	C Babs Oak Hill	06/05/15	618513	160978	Kent	Minor	2-Way
945566	C Bank Road	09/10/15	605225	137485	Kent	Minor	2-Way
941204	C Bassingbourn Road	27/03/15	554932	222793	Essex	Minor	2-Way
946206	C Bletchingley Road	02/07/15	529165	152935	Surrey	Minor	2-Way
945569	C Bockham Lane	20/10/15	605803	141979	Kent	Minor	2-Way
945558	C Bond Lane	15/10/15	600454	138697	Kent	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
945573	C Bradbourne Road	22/10/15	552829	156140	Kent	Minor	2-Way
951684	C Brentwood Road	15/10/15	565160	179870	Thurrock	Minor	2-Way
946176	C Brickfield Road	30/04/15	532375	145678	Surrey	Minor	2-Way
942345	C Brimsdown Avenue	26/06/15	536314	198004	Greater London (East)	Minor	2-Way
942532	C Brook Street	09/10/15	549905	177369	Greater London (East)	Minor	2-Way
945725	C Buckland Road	03/07/15	573275	174245	Medway	Minor	2-Way
951586	C Buncefield Lane	25/06/15	508609	207637	Hertfordshire	Minor	2-Way
941509	C Burton Lane	14/10/15	533085	203302	Hertfordshire	Minor	2-Way
946197	C Burwood Road	02/07/15	511645	164300	Surrey	Minor	2-Way
942342	C Camlet Way	06/07/15	526048	197862	Greater London (North)	Minor	2-Way
945570	C Canterbury Road	10/09/15	616211	141611	Kent	Minor	2-Way
941215	C Church End Lane	18/05/15	575225	194633	Essex	Minor	2-Way
942675	C Church Road	09/06/15	505907	182156	Greater London (North)	Minor	2-Way
945594	C Church Street	13/03/15	576815	151317	Kent	Minor	2-Way
945580	C College Road	21/05/15	551372	170003	Kent	Minor	2-Way
945559	C Cripple Street	16/06/15	576085	153453	Kent	Minor	2-Way
941238	C Davenants	05/06/15	573894	189874	Essex	Minor	2-Way
946180	C Dorking Road	27/04/15	513936	153905	Surrey	Minor	2-Way
946204	C Dormans Road	09/07/15	540353	142588	Surrey	Minor	2-Way
941221	C Dunton Road	22/09/15	568104	190505	Essex	Minor	2-Way
946168	C East Park Lane	14/09/15	535236	141958	Surrey	Minor	2-Way
942426	C Elm Park Avenue	01/05/15	552071	185854	Greater London (East)	Minor	2-Way
941169	C Epping Lane	14/09/15	548335	198368	Essex	Minor	2-Way
945730	C Esplanade	18/05/15	573584	167632	Medway	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
945574	C Faversham Road	24/04/15	589873	152240	Kent	Minor	2-Way
945560	C Frith Road	17/03/15	603855	136917	Kent	Minor	2-Way
941166	C Fyfield Road	01/05/15	555228	207305	Essex	Minor	2-Way
941218	C Galleywood Road	26/03/15	572180	204382	Essex	Minor	2-Way
942495	C Gascoigne Road	19/10/15	544543	183279	Greater London (East)	Minor	2-Way
942682	C Green Lane	22/05/15	508195	181757	Greater London (North)	Minor	2-Way
941193	C Green Street	21/05/15	557358	219046	Essex	Minor	2-Way
946201	C Harestone Valley Road	15/10/15	534091	155366	Surrey	Minor	2-Way
946515	C Heathcote Drive	22/10/15	538072	138712	West Sussex	Minor	2-Way
945728	C Hempstead Valley Drive	17/09/15	579359	163723	Medway	Minor	2-Way
945591	C High Street	18/05/15	576841	135745	Kent	Minor	2-Way
941176	C Hollow Lane	03/07/15	569137	209682	Essex	Minor	2-Way
945571	C Holmesdale Hill	06/10/15	556436	169903	Kent	Minor	2-Way
941226	C Hook End Lane	23/06/15	559064	199862	Essex	Minor	2-Way
945575	C Horton Road	05/10/15	556210	168493	Kent	Minor	2-Way
941197	C Humphrey's Farm Lane	15/04/15	568371	213124	Essex	Minor	2-Way
945021	C Hurtis Hill	25/09/15	551195	129440	East Sussex	Minor	2-Way
941214	C Jacksons Lane	03/09/15	568127	194711	Essex	Minor	2-Way
941237	C Kelvedon Road	28/04/15	584987	212963	Essex	Minor	2-Way
945551	C Kenardington Road	05/05/15	595858	131012	Kent	Minor	2-Way
945528	C Lidsing Road	03/09/15	577764	160129	Kent	Minor	2-Way
942496	C Lodge Avenue	22/10/15	546653	185683	Greater London (East)	Minor	2-Way
942369	C Lodge Hill	06/05/15	546826	177080	Greater London (East)	Minor	2-Way
951590	C Lower Road	22/10/15	502600	195933	Hertfordshire	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941217	C Margaretting Road	06/07/15	570323	202767	Essex	Minor	2-Way
944984	C Mayfield Road	21/10/15	555472	129090	East Sussex	Minor	2-Way
946178	C Mill Lane	18/03/15	526918	143251	Surrey	Minor	2-Way
945534	C Mystole Lane	12/06/15	610496	154042	Kent	Minor	2-Way
944875	C Narcot Lane	11/09/15	498906	191888	Buckinghamshire	Minor	2-Way
945581	C New Hythe Lane	18/06/15	570332	158829	Kent	Minor	2-Way
942432	C Noak Hill Road	19/05/15	553367	192868	Greater London (East)	Minor	2-Way
941183	C Notley Road	12/10/15	575961	221245	Essex	Minor	2-Way
942206	C Old Dock Approach Road	18/05/15	563152	178744	Thurrock	Minor	2-Way
941518	C Peascroft Road	13/10/15	507492	206123	Hertfordshire	Minor	2-Way
946186	C Pooley Green Road	04/06/15	502329	170875	Surrey	Minor	2-Way
945568	C Raspberry Hill Lane	01/06/15	588226	168225	Kent	Minor	2-Way
945536	C Sandy Lane	13/10/15	596623	140640	Kent	Minor	2-Way
941239	C School Road	09/06/15	557182	198931	Essex	Minor	2-Way
951594	C Sheepcot Lane	02/07/15	511180	199957	Hertfordshire	Minor	2-Way
942427	C South End Road	08/10/15	553006	185831	Greater London (East)	Minor	2-Way
942208	C Southend Road	15/06/15	568879	183183	Thurrock	Minor	2-Way
942678	C Southern Perimeter Road	01/05/15	505498	174702	Greater London (South)	Minor	2-Way
945583	C Sparepenny Lane	19/10/15	554389	167029	Kent	Minor	2-Way
941515	C Stag Lane	20/05/15	502471	195236	Hertfordshire	Minor	2-Way
942036	C Station Road	22/06/15	586318	185590	Southend-on-Sea	Minor	2-Way
942425	C Station Road	21/09/15	553107	189252	Greater London (East)	Minor	2-Way
944898	C Stoke Green	12/06/15	498488	182310	Buckinghamshire	Minor	2-Way
942205	C Stoneness Road	10/07/15	558997	177317	Thurrock	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
942430	C Sylvan Avenue	15/05/15	554616	188472	Greater London (East)	Minor	2-Way
941157	C The Causeway	17/06/15	565948	205177	Essex	Minor	2-Way
945545	C The Hurst	01/05/15	562385	154257	Kent	Minor	2-Way
945585	C The Marina	15/10/15	637786	153289	Kent	Minor	2-Way
941539	C Tom's Lane	22/09/15	509659	203578	Hertfordshire	Minor	2-Way
942834	C Tomswood Hill	22/06/15	543904	191216	Greater London (East)	Minor	2-Way
942566	C Valley Road	23/09/15	532565	159993	Greater London (South)	Minor	2-Way
946187	C Westhall Road	05/06/15	534888	157829	Surrey	Minor	2-Way
945564	C Willow Road	01/07/15	633234	150936	Kent	Minor	2-Way
945547	C Wingham Road	20/10/15	622382	157892	Kent	Minor	2-Way
946233	C Wolfs Road - Wolfs Row	28/04/15	540725	152592	Surrey	Minor	2-Way
945001	C214	09/07/15	564634	125749	East Sussex	Minor	2-Way
16001	M1	01/05/15	512360	200200	Other	M	2-Way
36001	M1	15/05/15	514700	196100	Other	M	2-Way
46001	M1	03/06/15	511254	204604	Other	M	2-Way
56002	M1	17/09/15	509700	210500	Other	M	2-Way
57226	M1	07/10/15	511800	202450	Other	M	2-Way
7961	M11	12/06/15	543480	194600	Other	M	2-Way
56027	M11	21/09/15	548000	204965	Other	M	2-Way
57227	M11	23/04/15	541200	190320	Other	M	2-Way
6010	M2	15/09/15	573500	165500	A2-M2	M	2-Way
18229	M2	01/10/15	585623	162299	A2-M2	M	2-Way
26009	M2	09/09/15	602800	159460	A2-M2	M	2-Way
36010	M2	24/06/15	577700	161500	A2-M2	M	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
56008	M2	14/09/15	571390	168600	A2-M2	M	2-Way
6036	M20	07/05/15	571200	158800	M20	M	2-Way
26038	M20	18/05/15	574400	158350	M20	M	2-Way
36035	M20	18/05/15	566800	159400	M20	M	2-Way
46034	M20	13/04/15	577000	157700	M20	M	2-Way
47920	M20	18/09/15	620400	137600	M20	M	2-Way
99203	M20	22/04/15	580700	156400	M20	M	2-Way
99204	M20	21/04/15	596000	147080	M20	M	2-Way
99598	M20	01/10/15	582350	154700	M20	M	2-Way
17739	M23	14/10/15	531100	147700	Other	M	2-Way
26039	M23	05/05/15	530400	140000	Other	M	2-Way
74304	M23	17/04/15	530470	136820	Other	M	2-Way
6178	M25	14/09/15	521708	201110	M25_north	M	2-Way
7054	M25	17/04/15	503800	195000	M25_north	M	2-Way
7824	M25	13/04/15	554050	170000	M25_east	M	2-Way
7901	M25	07/05/15	505600	161200	M25_south	M	2-Way
7902	M25	29/09/15	504000	183357	M25_north	M	2-Way
7903	M25	29/06/15	510000	202901	M25_north	M	2-Way
7904	M25	01/06/15	549300	198760	M25_east	M	2-Way
17875	M25	12/05/15	522100	153680	M25_south	M	2-Way
17876	M25	11/05/15	558360	185100	M25_east	M	2-Way
17957	M25	24/09/15	538500	199900	M25_east	M	2-Way
27085	M25	09/10/15	505020	198090	M25_north	M	2-Way
27866	M25	11/06/15	547300	156150	M25_south	M	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
27883	M25	17/04/15	534250	200000	M25_north	M	2-Way
27923	M25	16/06/15	504031	176656	M25_south	M	2-Way
28440	M25	06/11/15	512500	203110	M25_north	M	2-Way
37918	M25	12/10/15	503000	166200	M25_south	M	2-Way
38019	M25	30/04/15	550300	164700	M25_east	M	2-Way
38020	M25	29/09/15	502000	190700	M25_north	M	2-Way
38021	M25	08/07/15	516216	202781	M25_north	M	2-Way
38022	M25	21/10/15	557400	190260	M25_east	M	2-Way
47578	M25	06/10/15	524911	200067	M25_north	M	2-Way
47876	M25	22/09/15	503000	174300	M25_south	M	2-Way
48039	M25	08/06/15	550570	159799	M25_east	M	2-Way
48040	M25	08/10/15	513200	158145	M25_south	M	2-Way
48041	M25	08/10/15	507453	200045	M25_north	M	2-Way
48089	M25	01/07/15	517000	157701	M25_south	M	2-Way
56037	M25	05/05/15	528300	153800	M25_south	M	2-Way
56038	M25	15/04/15	533500	152650	M25_south	M	2-Way
57740	M25	17/06/15	501598	170344	M25_south	M	2-Way
37912	M26	24/04/15	554542	158200	Other	M	2-Way
17738	M3	05/06/15	506600	167200	Other	M	2-Way
46010	M3	15/09/15	497400	165000	Other	M	2-Way
16012	M4	14/09/15	506000	178400	Other	M	2-Way
36013	M4	06/10/15	507470	177800	Other	M	2-Way
16039	M40	22/04/15	499500	186500	Other	M	2-Way
48082	M40	14/09/15	503151	185758	Other	M	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941272	U	11/05/15	554652	228414	Essex	Minor	2-Way
941294	U	23/10/15	557557	200396	Essex	Minor	2-Way
945605	U	28/04/15	605615	131427	Kent	Minor	2-Way
941378	U Brays Mead	18/05/15	545851	208803	Essex	Minor	2-Way
942513	U Albemarle Road	17/06/15	527347	194797	Greater London (North)	Minor	2-Way
942537	U Aperfield Road	17/06/15	551870	177659	Greater London (East)	Minor	2-Way
941602	U Arlington Crescent	29/04/15	536128	200059	Hertfordshire	Minor	2-Way
941373	U Armond Road	25/09/15	581569	215050	Essex	Minor	2-Way
941429	U Armstrong Road	26/06/15	577678	189183	Essex	Minor	2-Way
946293	U Ashcroft Park	20/03/15	512188	161028	Surrey	Minor	2-Way
942837	U Ashgrove Road	22/05/15	546042	187140	Greater London (East)	Minor	2-Way
942836	U Ashley Avenue	11/06/15	543842	190215	Greater London (East)	Minor	2-Way
942216	U Avon Green	23/03/15	558754	181401	Thurrock	Minor	2-Way
951552	U Barnard Acres	25/03/15	539420	205860	Essex	Minor	2-Way
941278	U Barnston Green	06/05/15	564220	219744	Essex	Minor	2-Way
941669	U Beaumont Avenue	02/07/15	516988	207427	Hertfordshire	Minor	2-Way
945610	U Beech Road	29/04/15	566495	155100	Kent	Minor	2-Way
945757	U Birch Grove	06/05/15	579258	164194	Medway	Minor	2-Way
945633	U Birchin Cross Road	18/03/15	554431	159924	Kent	Minor	2-Way
945682	U Blackburn Road	13/10/15	615872	166970	Kent	Minor	2-Way
941293	U Blackmore Road	20/03/15	563452	199942	Essex	Minor	2-Way
942521	U Bohun Grove	06/05/15	527504	195380	Greater London (North)	Minor	2-Way
941262	U Borwick Lane	24/03/15	572630	191918	Essex	Minor	2-Way
945657	U Bramble Avenue	01/10/15	559127	172395	Kent	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
945626	U Braunstone Drive	13/03/15	574706	157542	Kent	Minor	2-Way
941289	U Bridge Street	16/06/15	569770	190608	Essex	Minor	2-Way
945673	U Bridge Street	11/05/15	631388	142134	Kent	Minor	2-Way
945754	U Bright Road	20/05/15	576743	166950	Medway	Minor	2-Way
946327	U Brooklands Lane	30/04/15	507211	164294	Surrey	Minor	2-Way
941321	U Brookside	16/03/15	542893	208327	Essex	Minor	2-Way
941317	U Browning Road	11/05/15	585161	205952	Essex	Minor	2-Way
945658	U Bullfinch Lane	05/10/15	551183	156358	Kent	Minor	2-Way
941281	U Burches Road	29/06/15	578821	189559	Essex	Minor	2-Way
942982	U Buxton Road	13/10/15	538824	194588	Greater London (East)	Minor	2-Way
951563	U Carters Mead	16/09/15	547017	209056	Essex	Minor	2-Way
942213	U Chafford Way	06/03/15	561530	180407	Thurrock	Minor	2-Way
941267	U Chancellor Avenue	08/07/15	573770	207707	Essex	Minor	2-Way
945739	U Childscroft Road	16/09/15	581959	166469	Medway	Minor	2-Way
946253	U Church Close	24/09/15	514772	155335	Surrey	Minor	2-Way
942446	U Church Lane	08/06/15	551215	189143	Greater London (East)	Minor	2-Way
946382	U Church Road	19/10/15	525200	149084	Surrey	Minor	2-Way
946367	U Coldhabour Road	16/06/15	503818	160062	Surrey	Minor	2-Way
942434	U Coldharbour Lane	20/05/15	552443	180069	Greater London (East)	Minor	2-Way
941399	U Coldnailhurst Avenue	22/10/15	575435	223835	Essex	Minor	2-Way
944944	U Colne Orchard / North Lane	16/10/15	503897	180937	Buckinghamshire	Minor	2-Way
946373	U Comforts Farm Avenue	05/05/15	539951	150917	Surrey	Minor	2-Way
951626	U Concorde Drive	18/05/15	505940	207322	Hertfordshire	Minor	2-Way
944929	U Coronation Avenue	29/04/15	500174	181573	Buckinghamshire	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
946311	U Cranford Avenue	16/04/15	506432	173593	Surrey	Minor	2-Way
941397	U Crescent Road	29/04/15	585017	208320	Essex	Minor	2-Way
942214	U Crofton Avenue	10/06/15	569658	183869	Thurrock	Minor	2-Way
951849	U Crow Drive	23/10/15	550356	160164	Kent	Minor	2-Way
942055	U Cumberland Avenue	01/06/15	589692	186993	Southend-on-Sea	Minor	2-Way
945649	U Dane Hill Row	18/09/15	635853	170963	Kent	Minor	2-Way
941589	U Dell Road	26/06/15	510283	198818	Hertfordshire	Minor	2-Way
945647	U Dene Holme Road	30/04/15	563315	172357	Kent	Minor	2-Way
941543	U Denham Way	17/03/15	520397	197867	Hertfordshire	Minor	2-Way
941438	U Dickens Rise	13/10/15	543691	193275	Essex	Minor	2-Way
942228	U Dolphin Way	12/06/15	557313	178550	Thurrock	Minor	2-Way
941436	U Dorset Avenue	15/05/15	571960	204526	Essex	Minor	2-Way
941368	U Downer Road	25/09/15	577940	188110	Essex	Minor	2-Way
941421	U Downhall Park Way	18/09/15	580383	192242	Essex	Minor	2-Way
942380	U Duncroft	08/06/15	545149	177177	Greater London (East)	Minor	2-Way
945663	U East Cliff Road	21/10/15	558439	140950	Kent	Minor	2-Way
946281	U Eldon Road	19/06/15	532651	156462	Surrey	Minor	2-Way
946274	U Elizabeth Avenue	23/10/15	505358	170528	Surrey	Minor	2-Way
942043	U Elm Grove	13/03/15	591424	185578	Southend-on-Sea	Minor	2-Way
942041	U Essex Street	05/05/15	588445	185887	Southend-on-Sea	Minor	2-Way
942048	U Fairview Drive	12/10/15	586386	187710	Southend-on-Sea	Minor	2-Way
941428	U Foldcroft	16/10/15	543473	209955	Essex	Minor	2-Way
951767	U Forest View	10/09/15	539227	194815	Greater London (East)	Minor	2-Way
945703	U Freelands Road	22/06/15	569528	161594	Kent	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
945652	U Gainsboro Road	08/05/15	629926	169730	Kent	Minor	2-Way
945603	U Garlinge Green Road	01/06/15	611658	153211	Kent	Minor	2-Way
941353	U Gifford Road	16/06/15	577628	188208	Essex	Minor	2-Way
946236	U Giles Travers Close	18/05/15	502169	168840	Surrey	Minor	2-Way
945758	U Goad Avenue	18/03/15	576707	163453	Medway	Minor	2-Way
942498	U Gorseway	21/10/15	551373	187332	Greater London (East)	Minor	2-Way
945704	U Granville Road	23/10/15	552359	155260	Kent	Minor	2-Way
946588	U Grattons Drive	08/07/15	529272	137585	West Sussex	Minor	2-Way
946368	U Guildford Road	01/10/15	516216	156247	Surrey	Minor	2-Way
951615	U Haggerston Road	05/10/15	518358	198135	Hertfordshire	Minor	2-Way
945625	U Haven Drive	09/10/15	621313	139528	Kent	Minor	2-Way
945749	U Hawkhurst Road	22/05/15	579515	167347	Medway	Minor	2-Way
951614	U Hazelbury Avenue	19/10/15	508492	201344	Hertfordshire	Minor	2-Way
941633	U Hazelwood Lane	29/04/15	508566	201112	Hertfordshire	Minor	2-Way
941348	U Hazlemere Road	17/06/15	577687	188575	Essex	Minor	2-Way
946321	U Hazon Way	15/05/15	520700	161200	Surrey	Minor	2-Way
945642	U Heartenoak Road	01/06/15	576053	131632	Kent	Minor	2-Way
942445	U Helmsdale Road	15/06/15	551241	191377	Greater London (East)	Minor	2-Way
945646	U Heron Forstal Avenue	21/05/15	621505	139670	Kent	Minor	2-Way
941564	U Higgins Road	26/03/15	532960	204024	Hertfordshire	Minor	2-Way
941273	U High Easter Road	15/10/15	564231	219810	Essex	Minor	2-Way
951540	U Highland Road	08/07/15	539152	206214	Essex	Minor	2-Way
942056	U Highlands Boulevard	02/06/15	582437	186988	Southend-on-Sea	Minor	2-Way
941352	U Hillside Grove	27/04/15	570283	205112	Essex	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
951617	U Hobletts Road	23/06/15	506900	207834	Hertfordshire	Minor	2-Way
942357	U Hoe Lane	16/04/15	534390	198060	Greater London (East)	Minor	2-Way
944937	U Howards Wood Drive	06/10/15	500096	186548	Buckinghamshire	Minor	2-Way
941435	U Hunt's Drive	01/10/15	567615	205675	Essex	Minor	2-Way
946243	U Hurst Lane	28/04/15	501045	169315	Surrey	Minor	2-Way
942577	U Ingleboro Drive	22/09/15	532496	160716	Greater London (South)	Minor	2-Way
941253	U Jenkins Lane	29/04/15	550128	220077	Essex	Minor	2-Way
945740	U John Street	01/10/15	574418	167853	Medway	Minor	2-Way
942046	U Journeymans Way	07/05/15	587992	188467	Southend-on-Sea	Minor	2-Way
945668	U Kearsney Avenue	20/03/15	629185	143922	Kent	Minor	2-Way
945628	U King Edward Road	20/10/15	558315	174777	Kent	Minor	2-Way
945681	U Kings Road	01/07/15	583502	144477	Kent	Minor	2-Way
946283	U Kingswood Close	28/09/15	499711	171562	Surrey	Minor	2-Way
942229	U Laird Avenue	01/10/15	562612	179872	Thurrock	Minor	2-Way
945656	U Lake View Road	16/09/15	552109	155995	Kent	Minor	2-Way
945665	U Lamb's Walk	11/06/15	610335	164881	Kent	Minor	2-Way
945654	U Lambton Road	24/09/15	630239	142101	Kent	Minor	2-Way
946295	U Larchwood Drive	14/04/15	498975	170979	Surrey	Minor	2-Way
941610	U Lauderdale Road	21/05/15	508475	200829	Hertfordshire	Minor	2-Way
945604	U Laurie Gray Avenue	05/06/15	574631	162289	Kent	Minor	2-Way
942840	U Lincoln Gardens	09/10/15	542558	187763	Greater London (East)	Minor	2-Way
941409	U Long Banks	22/10/15	544802	207890	Essex	Minor	2-Way
951566	U Long Brandocks	17/04/15	567199	206010	Essex	Minor	2-Way
951687	U Long Lane	20/10/15	562623	180086	Thurrock	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941331	U Long Riding	30/04/15	571775	188820	Essex	Minor	2-Way
942444	U Lower Mardyke Avenue	10/06/15	550498	183346	Greater London (East)	Minor	2-Way
945635	U Manor Road	10/07/15	565617	167657	Kent	Minor	2-Way
945696	U Marston Drive	26/06/15	577019	156289	Kent	Minor	2-Way
945609	U Maytham Road	28/04/15	586574	127988	Kent	Minor	2-Way
945637	U Maytham Road	10/06/15	585122	130314	Kent	Minor	2-Way
945670	U Medway Avenue	26/03/15	569932	150512	Kent	Minor	2-Way
941664	U Middle Way	14/09/15	510541	198769	Hertfordshire	Minor	2-Way
945618	U Minter Avenue	15/05/15	620890	141273	Kent	Minor	2-Way
946335	U Mullens Road	27/04/15	502066	171314	Surrey	Minor	2-Way
941410	U Navestock Close	08/07/15	579234	191355	Essex	Minor	2-Way
941608	U Newberries Avenue	30/04/15	517103	199661	Hertfordshire	Minor	2-Way
945690	U Newman Drive	20/10/15	590859	165698	Kent	Minor	2-Way
945716	U Newtown Road	16/10/15	601409	141923	Kent	Minor	2-Way
951709	U Nightingale Vale	01/10/15	543550	177915	Greater London (East)	Minor	2-Way
946363	U Nonsuch Court Avenue	04/06/15	522580	162313	Surrey	Minor	2-Way
945674	U Noreen Avenue	16/06/15	594418	172870	Kent	Minor	2-Way
941300	U Norfolk Close	04/06/15	567477	188614	Essex	Minor	2-Way
941425	U Norfolk Gardens	28/09/15	576548	223612	Essex	Minor	2-Way
946370	U Nutfield Road	16/09/15	529113	152675	Surrey	Minor	2-Way
941386	U Oldwyk	22/10/15	572160	187724	Essex	Minor	2-Way
941556	U Oliver Rise	30/04/15	506429	205331	Hertfordshire	Minor	2-Way
951551	U Ongar Road	23/06/15	558176	195282	Essex	Minor	2-Way
944933	U Orchard Grove	05/06/15	499247	190681	Buckinghamshire	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
946270	U Ormside Way	24/03/15	528781	152023	Surrey	Minor	2-Way
944938	U Oval Way	19/03/15	500087	189171	Buckinghamshire	Minor	2-Way
942540	U Palmar Crescent	14/04/15	549211	175949	Greater London (East)	Minor	2-Way
945707	U Park Road	03/09/15	560270	174063	Kent	Minor	2-Way
951612	U Park Road	09/06/15	510385	197603	Hertfordshire	Minor	2-Way
942352	U Parkgate Avenue	15/09/15	526135	197866	Greater London (North)	Minor	2-Way
945745	U Phoenix Road	24/09/15	577075	162645	Medway	Minor	2-Way
944947	U Pinewood Green	25/03/15	501985	184100	Buckinghamshire	Minor	2-Way
941431	U Point Road	08/06/15	581924	183248	Essex	Minor	2-Way
951542	U Poplar Road	27/03/15	580080	183035	Essex	Minor	2-Way
946374	U Portmore Way	16/10/15	507233	165021	Surrey	Minor	2-Way
941375	U Pound Lane Central	08/10/15	568655	190095	Essex	Minor	2-Way
942346	U Princes Avenue	17/09/15	536155	199485	Greater London (East)	Minor	2-Way
945756	U Radleigh Gardens	06/07/15	575160	166355	Medway	Minor	2-Way
942042	U Rayleigh Drive	21/05/15	583991	187456	Southend-on-Sea	Minor	2-Way
946364	U Red House Lane	21/05/15	510273	165925	Surrey	Minor	2-Way
942541	U Riverdale Road	09/10/15	549680	178017	Greater London (East)	Minor	2-Way
946251	U Riverway	21/10/15	504663	169582	Surrey	Minor	2-Way
941403	U Rocheway	13/10/15	588053	190606	Essex	Minor	2-Way
942350	U Rosemary Avenue	17/09/15	533059	197938	Greater London (East)	Minor	2-Way
951554	U Roundhills	13/03/15	539335	199979	Essex	Minor	2-Way
941538	U School Lane	14/04/15	513386	201033	Hertfordshire	Minor	2-Way
942382	U Seymour Street	20/03/15	544294	179022	Greater London (East)	Minor	2-Way
942223	U Shakspeare Avenue	12/10/15	564801	176544	Thurrock	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941240	U Shalford Road	18/06/15	573051	222897	Essex	Minor	2-Way
941304	U Sheepcotes	20/05/15	573936	208663	Essex	Minor	2-Way
941603	U Shenley Lane	01/05/15	517351	203741	Hertfordshire	Minor	2-Way
945692	U Showfields Road	15/09/15	557548	137869	Kent	Minor	2-Way
945660	U Shrubcote	17/09/15	589181	133414	Kent	Minor	2-Way
942692	U Snowden Avenue	29/04/15	507639	183427	Greater London (North)	Minor	2-Way
945624	U Speedwell Road	05/05/15	609810	164638	Kent	Minor	2-Way
946260	U St John's Road	20/05/15	517109	156575	Surrey	Minor	2-Way
941430	U St Mary's Close	28/04/15	572578	204789	Essex	Minor	2-Way
941666	U St Michael's Street	27/04/15	513682	207372	Hertfordshire	Minor	2-Way
941338	U Station Approach	20/05/15	576208	222755	Essex	Minor	2-Way
941566	U Station Approach	01/05/15	536505	200315	Hertfordshire	Minor	2-Way
942210	U Station Road	16/06/15	567494	177451	Thurrock	Minor	2-Way
941654	U Stroma Close	08/05/15	508185	206092	Hertfordshire	Minor	2-Way
945644	U Swale Way	22/10/15	592718	164580	Kent	Minor	2-Way
941364	U Sydney Road	01/05/15	577025	187710	Essex	Minor	2-Way
946392	U Taunton Avenue	07/10/15	533589	155823	Surrey	Minor	2-Way
941327	U The Avenue	02/07/15	567017	194920	Essex	Minor	2-Way
942436	U The Avenue	07/10/15	553721	186869	Greater London (East)	Minor	2-Way
945629	U The Avenue	17/09/15	620370	162135	Kent	Minor	2-Way
941673	U The Campions	14/09/15	519053	198284	Hertfordshire	Minor	2-Way
946330	U The Cravens	30/06/15	531308	143438	Surrey	Minor	2-Way
941332	U The Downs	24/03/15	545406	209818	Essex	Minor	2-Way
941609	U The Fairway	23/10/15	509201	192721	Hertfordshire	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
941402	U The Fortunes	25/03/15	545556	208871	Essex	Minor	2-Way
942441	U The Grove	15/10/15	555551	185295	Greater London (East)	Minor	2-Way
951609	U The Mount	25/03/15	505329	194978	Hertfordshire	Minor	2-Way
945677	U The Oaze	22/10/15	610159	164714	Kent	Minor	2-Way
941274	U The Pastures	23/09/15	555942	221235	Essex	Minor	2-Way
951569	U The Uplands	09/07/15	542650	196674	Essex	Minor	2-Way
946334	U The Willows	18/06/15	507351	165270	Surrey	Minor	2-Way
941245	U Toot Hill Road	14/04/15	551756	202983	Essex	Minor	2-Way
942227	U Usk Road	21/10/15	556432	181550	Thurrock	Minor	2-Way
942060	U Valkyrie Road	22/10/15	586783	186015	Southend-on-Sea	Minor	2-Way
946377	U Vegal Crescent	20/10/15	499003	171066	Surrey	Minor	2-Way
942215	U Victoria Road	30/06/15	566650	183450	Thurrock	Minor	2-Way
941349	U Vowler Road	17/09/15	567876	187943	Essex	Minor	2-Way
945737	U Wallsingham Close	19/03/15	580707	163284	Medway	Minor	2-Way
941362	U Warwick Road	28/04/15	581476	190358	Essex	Minor	2-Way
945680	U Waterloo Crescent	29/06/15	631979	140974	Kent	Minor	2-Way
945743	U Wayfield Road	13/03/15	576227	165313	Medway	Minor	2-Way
945678	U Wellington Road	26/06/15	628893	144311	Kent	Minor	2-Way
946391	U Wellington Way	19/10/15	507163	162232	Surrey	Minor	2-Way
946237	U Western Drive	23/03/15	508738	167491	Surrey	Minor	2-Way
946597	U Westminster Road	22/09/15	529295	136194	West Sussex	Minor	2-Way
946356	U Windfield	27/04/15	517012	156497	Surrey	Minor	2-Way
941552	U Windsor Way	06/05/15	504431	194409	Hertfordshire	Minor	2-Way
946305	U Woldingham Road	18/09/15	535889	156811	Surrey	Minor	2-Way

Site Ref	Description	Survey Date	Easting	Northing	Corridor/Region/ Area of interest	Road type	Direction
946252	U Woodfield Lane	19/03/15	518151	158934	Surrey	Minor	2-Way
941396	U Woodland Grove	20/10/15	546036	201544	Essex	Minor	2-Way
945705	U Woodrow Chase	08/10/15	618511	166238	Kent	Minor	2-Way
942543	U Yorkland Avenue	11/06/15	546003	175047	Greater London (East)	Minor	2-Way

Table A.3 Bean/Ebbsfleet count locations used in the LTAM development

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
1	A227 Wrotham Road South of A2 Junction	19/06/14 - 30/06/14	564105	171056	ATC	A	Northbound
1	A227 Wrotham Road South of A2 Junction	19/06/14 - 30/06/14	564105	171056	ATC	A	Southbound
2	A227 Wrotham Road North of A2 Junction	20/06/14 - 28/06/14	564120	171388	ATC	A	Northbound
2	A227 Wrotham Road North of A2 Junction	20/06/14 - 28/06/14	564120	171388	ATC	A	Southbound
3	B262 Hall Road	20/06/14 - 06/07/14	562200	172410	ATC	B	Northbound
3	B262 Hall Road	20/06/14 - 06/07/14	562200	172410	ATC	B	Southbound
4	New Barn Road	19/06/14 - 06/07/14	561980	171932	ATC	Minor	Northbound
4	New Barn Road	19/06/14 - 06/07/14	561980	171932	ATC	Minor	Southbound
5	B262 Station Road	19/06/14 - 30/06/14	561605	172104	ATC	B	Eastbound
5	B262 Station Road	19/06/14 - 30/06/14	561605	172104	ATC	B	Westbound
8	A226 Thames Way	20/06/14 - 03/07/14	562075	173555	ATC	B	Eastbound
8	A226 Thames Way	20/06/14 - 03/07/14	562075	173555	ATC	B	Westbound
9	B2175 The Hill Northfleet S of Vicarage Drive	20/06/14 - 03/07/14	562385	174297	ATC	B	Eastbound
9	B2175 The Hill Northfleet S of Vicarage Drive	20/06/14 - 03/07/14	562385	174297	ATC	B	Westbound
10	A226 London Road (east of Knockhall Road)	20/06/14 - 02/07/14	559745	174961	ATC	A	Eastbound
10	A226 London Road (east of Knockhall Road)	20/06/14 - 02/07/14	559745	174961	ATC	A	Westbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
11	Alkerden Lane (west of Gilbert Close)	20/06/14 - 03/07/14	559445	174158	ATC	Minor	Eastbound
11	Alkerden Lane (west of Gilbert Close)	20/06/14 - 03/07/14	559445	174158	ATC	Minor	Westbound
12	B255 Bean Lane (north of A2 North Roundabout)	20/06/14 - 10/07/14	558490	172874	ATC	B	Southbound
12	B255 Bean Lane (north of A2 North Roundabout)	20/06/14 - 10/07/14	558490	172874	ATC	B	Northbound
14	A296 Watling Street (east of Gore Road)	20/06/14 - 30/06/14	557030	173408	ATC	A	Eastbound
14	A296 Watling Street (east of Gore Road)	20/06/14 - 30/06/14	557030	173408	ATC	A	Westbound
15	A226 London Road (West of Oak Road)	20/06/14 - 07/07/14	557045	174275	ATC	A	Eastbound
15	A226 London Road (West of Oak Road)	20/06/14 - 07/07/14	557045	174275	ATC	A	Westbound
16	Elizabeth Street	20/06/14 - 07/07/14	557110	174847	ATC	Minor	Eastbound
16	Elizabeth Street	20/06/14 - 07/07/14	557110	174847	ATC	Minor	Westbound
19	B3228 Cotton Lane East of A 206 Crossways Blvd	20/06/14 - 07/07/14	556135	174986	ATC	B	Eastbound
19	B3228 Cotton Lane East of A 206 Crossways Blvd	20/06/14 - 07/07/14	556135	174986	ATC	B	Westbound
20	A226 The Brent	20/06/14 - 10/07/14	555765	173913	ATC	A	Eastbound
20	A226 The Brent	20/06/14 - 10/07/14	555765	173913	ATC	A	Westbound
21	B2500 Watling Street (west of Lingfield Ave)	20/06/14 - 06/07/14	555795	173680	ATC	B	Westbound
21	B2500 Watling Street (west of Lingfield Ave)	20/06/14 - 06/07/14	555795	173680	ATC	B	Westbound
23	B260 Trolling Down Hill	20/06/14 - 04/07/14	556242	172466	ATC	B	Northbound
23	B260 Trolling Down Hill	20/06/14 - 04/07/14	556242	172466	ATC	B	Southbound
24	Gore Road	20/06/14 - 04/07/14	556345	172521	ATC	Minor	Northbound
24	Gore Road	20/06/14 - 04/07/14	556345	172521	ATC	Minor	Southbound
25	B260 Green Street Green Road	20/06/14 - 30/06/14	556455	172133	ATC	B	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
25	B260 Green Street Green Road	20/06/14 - 30/06/14	556455	172133	ATC	B	Southbound
26	A225 Hawley Road	20/06/14 - 06/07/14	555438	170971	ATC	A	Northbound
26	A225 Hawley Road	20/06/14 - 06/07/14	555438	170971	ATC	A	Southbound
27	Clement Street	20/06/14 - 06/07/14	554660	170682	ATC	Minor	Eastbound
27	Clement Street	20/06/14 - 06/07/14	554660	170682	ATC	Minor	Westbound
28	Ship Lane	20/06/14 - 06/07/14	553734	169562	ATC	Minor	Eastbound
28	Ship Lane	20/06/14 - 06/07/14	553734	169562	ATC	Minor	Westbound
29	A225 Main Road	20/06/14 - 04/07/14	555820	169406	ATC	A	Northbound
29	A225 Main Road	20/06/14 - 04/07/14	555820	169406	ATC	A	Southbound
30	Horton Road	20/06/14 - 03/07/14	556345	169393	ATC	Minor	Northbound
30	Horton Road	20/06/14 - 03/07/14	556345	169393	ATC	Minor	Southbound
31	East Hill	20/06/14 - 03/07/14	556835	169415	ATC	Minor	Northbound
31	East Hill	20/06/14 - 03/07/14	556835	169415	ATC	Minor	Southbound
32	Wilson Lane	19/06/14 - 04/07/14	558030	169517	ATC	Minor	Northbound
32	Wilson Lane	19/06/14 - 04/07/14	558030	169517	ATC	Minor	Southbound
33	Canada Farm Road	20/06/14 - 04/07/14	558975	169284	ATC	Minor	Northbound
33	Canada Farm Road	20/06/14 - 04/07/14	558975	169284	ATC	Minor	Southbound
34	B260 Main Road	19/06/14 - 06/07/14	559580	169511	ATC	B	Eastbound
34	B260 Main Road	19/06/14 - 06/07/14	559580	169511	ATC	B	Westbound
35	B255 Whitehill Road	25/06/14 - 06/07/14	559955	169928	ATC	B	Northbound
35	B255 Whitehill Road	25/06/14 - 06/07/14	559955	169928	ATC	B	Southbound
36	New Barn Road	19/06/14 - 30/06/14	562275	169470	ATC	Minor	Northbound
36	New Barn Road	19/06/14 - 30/06/14	562275	169470	ATC	Minor	Southbound
37	Downs Road	19/06/14 - 30/06/14	563560	169357	ATC	Minor	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
37	Downs Road	19/06/14 - 30/06/14	563560	169357	ATC	Minor	Southbound
38	A227 Wrotham Road	19/06/14 - 30/06/14	563910	169312	ATC	A	Northbound
38	A227 Wrotham Road	19/06/14 - 30/06/14	563910	169312	ATC	A	Southbound
39	Red Street	19/06/14 - 30/06/14	561855	170761	ATC	Minor	Eastbound
39	Red Street	19/06/14 - 30/06/14	561855	170761	ATC	Minor	Westbound
40	Warren Road	19/06/14 - 30/06/14	561825	171218	ATC	Minor	Eastbound
40	Warren Road	19/06/14 - 30/06/14	561825	171218	ATC	Minor	Westbound
41	B255 Highcross Road	19/06/14 - 06/07/14	559563	170899	ATC	B	Northbound
41	B255 Highcross Road	19/06/14 - 06/07/14	559563	170899	ATC	B	Southbound
42	B262 Betsham Road	19/06/14 - 30/06/14	559835	171292	ATC	B	Eastbound
42	B262 Betsham Road	19/06/14 - 30/06/14	559835	171292	ATC	B	Westbound
43	Sandy Lane	18/06/14 - 30/06/14	559870	172034	ATC	Minor	Northbound
43	Sandy Lane	18/06/14 - 30/06/14	559870	172034	ATC	Minor	Southbound
44	B255 Bean Lane (south of A2 South Roundabout)	19/06/14 - 30/06/14	558750	172501	ATC	B	Northbound
44	B255 Bean Lane (south of A2 South Roundabout)	19/06/14 - 30/06/14	558750	172501	ATC	B	Southbound
45	B260 Green St Green Road (East of Ladywood Road)	20/06/14 - 03/07/14	557265	171058	ATC	B	Eastbound
45	B260 Green St Green Road (East of Ladywood Road)	20/06/14 - 30/06/14	557265	171058	ATC	B	Westbound
46	Holmesdale Hill	19/06/14 - 03/07/14	557000	169955	ATC	Minor	Eastbound
46	Holmesdale Hill	20/06/14 - 02/07/14	557000	169955	ATC	Minor	Westbound
7	A206 Crossways Blvd E of Galleon Blvd	21/06/14 - 27/06/14	557140	175234	7 days CLC	A	Eastbound
7	A206 Crossways Blvd E of Galleon Blvd	21/06/14 - 27/06/14	557140	175234	7 days CLC	A	Westbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
13	A2260 Southfleet Road North of A2 NW Rbt	21/06/14 - 27/06/14	561225	172998	7 days CLC	A	Northbound
13	A2260 Southfleet Road North of A2 NW Rbt	21/06/14 - 27/06/14	561225	172998	7 days CLC	A	Southbound
14	B255 Bean Road North of A2 North Rbt	21/06/14 - 27/06/14	558590	172896	7 days CLC	B	Northbound
14	B255 Bean Road North of A2 North Rbt	21/06/14 - 27/06/14	558590	172896	7 days CLC	B	Southbound
15	A206 Crossways Blvd N of Cotton Lane	21/06/14 - 27/06/14	556065	175094	7 days CLC	A	Northbound
15	A206 Crossways Blvd N of Cotton Lane	21/06/14 - 27/06/14	556065	175094	7 days CLC	A	Southbound
16	A296 Princes Road W of Princes Avenue	21/06/14 - 27/06/14	556065	175094	7 days CLC	A	Eastbound
16	A296 Princes Road W of Princes Avenue	21/06/14 - 27/06/14	556065	175094	7 days CLC	A	Westbound
1	A227 Wrotham Road	19/06/2014	563910	169312	MCC	A	Northbound
1	A227 Wrotham Road	19/06/2014	563910	169312	MCC	A	Southbound
2	B260 Main Road	19/06/2014	559560	169524	MCC	B	Eastbound
2	B260 Main Road	19/06/2014	559560	169524	MCC	B	Westbound
4	Horton Road	19/06/2014	556335	169368	MCC	Minor	Northbound
4	Horton Road	19/06/2014	556335	169368	MCC	Minor	Southbound
5	A225 Main Road	19/06/2014	555820	169360	MCC	A	Northbound
5	A225 Main Road	19/06/2014	555820	169360	MCC	A	Southbound
6	A225 Hawley Road	19/06/2014	555339	171243	MCC	A	Northbound
6	A225 Hawley Road	19/06/2014	555339	171243	MCC	A	Southbound
8	A226 London Road	19/06/2014	559745	174961	MCC	A	Eastbound
8	A226 London Road	19/06/2014	559745	174961	MCC	A	Westbound
9	Alkerden Lane	19/06/2014	559445	174158	MCC	Minor	Eastbound
9	Alkerden Lane	19/06/2014	559445	174158	MCC	Minor	Westbound

Table A.4 M20 SMP count locations used in the LTAM development

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
101	Eynsford Road	15/06/15 - 30/06/15	551572	166962	ATC	Minor	Eastbound
101	Eynsford Road	15/06/15 - 30/06/15	551572	166962	ATC	Minor	Westbound
109	A225 Hawley Road	13/06/15 - 29/06/15	554909	172167	ATC	A	Northbound
109	A225 Hawley Road	13/06/15 - 29/06/15	554909	172167	ATC	A	Southbound
110	A296 Princes Road	16/06/15 - 04/07/15	555526	173366	ATC	A	Eastbound
110	A296 Princes Road	16/06/15 - 04/07/15	555526	173366	ATC	A	Westbound
111	B2500 Watling Street	13/06/15 - 05/07/15	555624	173715	ATC	B	Eastbound
111	B2500 Watling Street	13/06/15 - 05/07/15	555624	173715	ATC	B	Westbound
114	Rennie Drive	17/06/15 - 29/06/15	555915	175241	ATC	Minor	Eastbound
114	Rennie Drive	17/06/15 - 29/06/15	555915	175241	ATC	Minor	Westbound
115	Stonehouse Lane	17/06/15 - 02/07/15	557283	178700	ATC	Minor	Eastbound
115	Stonehouse Lane	17/06/15 - 02/07/15	557283	178700	ATC	Minor	Westbound
116	A1306 Arterial Road Purfleet	17/06/15 - 29/06/15	557175	178816	ATC	A	Eastbound
116	A1306 Arterial Road Purfleet	17/06/15 - 29/06/15	557175	178816	ATC	A	Westbound
117	Ship Lane	17/06/15 - 02/07/15	557165	179229	ATC	Minor	Northbound
117	Ship Lane	17/06/15 - 02/07/15	557165	179229	ATC	Minor	Southbound
125	B2000 Town Road	12/06/15 - 29/06/15	573376	173144	ATC	B	Northbound
125	B2000 Town Road	12/06/15 - 29/06/15	573376	173144	ATC	B	Southbound
126	A228 Four Elms Hill	12/06/15 - 27/06/15	575649	171706	ATC	A	Eastbound
126	A228 Four Elms Hill	12/06/15 - 27/06/15	575649	171706	ATC	A	Westbound
128	Graveney Road	11/06/15 - 28/06/15	603229	161053	ATC	Minor	Eastbound
128	Graveney Road	11/06/15 - 28/06/15	603229	161053	ATC	Minor	Westbound
129	A2 London Road	11/06/15 - 28/06/15	603502	160027	ATC	A	Eastbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
129	A2 London Road	11/06/15 - 28/06/15	603502	160027	ATC	A	Westbound
133	A20 Hythe Road	10/06/15 - 04/07/15	604180	141452	ATC	A	Eastbound
133	A20 Hythe Road	10/06/15 - 04/07/15	604180	141452	ATC	A	Westbound
138	A2070	12/06/15 - 03/07/15	601641	138961	ATC	A	Northbound
138	A2070	12/06/15 - 03/07/15	601641	138961	ATC	A	Southbound
144	B2162	14/06/15 - 25/06/15	567896	136835	ATC	B	Northbound
144	B2162	14/06/15 - 25/06/15	567896	136835	ATC	B	Southbound
145	A264 Pembury Road	16/06/15 - 29/06/15	561021	140450	ATC	A	Eastbound
145	A264 Pembury Road	16/06/15 - 29/06/15	561021	140450	ATC	A	Westbound
146	A26 London Road	15/06/15 - 07/07/15	557876	144191	ATC	A	Northbound
146	A26 London Road	15/06/15 - 07/07/15	557876	144191	ATC	A	Southbound
147	B2027 High Street	15/06/15 - 03/07/15	554828	146483	ATC	B	Eastbound
147	B2027 High Street	15/06/15 - 03/07/15	554828	146483	ATC	B	Westbound
148	Copping's Road	23/06/15 - 07/07/15	553325	147888	ATC	Minor	Northbound
148	Copping's Road	23/06/15 - 07/07/15	553325	147888	ATC	Minor	Southbound
149	B2042 Ide Hill Road	15/06/15 - 27/06/15	548684	151507	ATC	B	Northbound
149	B2042 Ide Hill Road	15/06/15 - 27/06/15	548684	151507	ATC	B	Southbound
153	Star Hill Road	15/06/15 - 29/06/15	549296	158699	ATC	Minor	Northbound
153	Star Hill Road	15/06/15 - 29/06/15	549296	158699	ATC	Minor	Southbound
154	Shoreham Lane	15/06/15 - 30/06/15	549424	161387	ATC	Minor	Eastbound
154	Shoreham Lane	15/06/15 - 30/06/15	549424	161387	ATC	Minor	Westbound
210	Pilgrims Way	12/06/15 - 30/06/15	571960	163519	ATC	Minor	Northbound
210	Pilgrims Way	12/06/15 - 30/06/15	571960	163519	ATC	Minor	Southbound
212	Lidsing Road	12/06/15 - 30/06/15	577545	159825	ATC	Minor	Eastbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
212	Lidsing Road	12/06/15 - 30/06/15	577545	159825	ATC	Minor	Westbound
214	Castle Hill	11/06/15 - 30/06/15	580824	158267	ATC	Minor	Northbound
214	Castle Hill	11/06/15 - 30/06/15	580824	158267	ATC	Minor	Southbound
215	Hollingbourne Hill	12/06/15 - 30/06/15	585421	156160	ATC	Minor	Northbound
215	Hollingbourne Hill	12/06/15 - 30/06/15	585421	156160	ATC	Minor	Southbound
218	A251 Buck Street	11/06/15 - 28/06/15	601155	150736	ATC	A	Northbound
218	A251 Buck Street	11/06/15 - 28/06/15	601155	150736	ATC	A	Southbound
221	A260 Cantenbury Road	16/06/15 - 29/06/15	621467	146955	ATC	A	Northbound
221	A260 Cantenbury Road	16/06/15 - 29/06/15	621467	146955	ATC	A	Southbound
302	North Pole Road	12/06/15 - 30/06/15	570671	154748	ATC	Minor	Eastbound
302	North Pole Road	12/06/15 - 30/06/15	570671	154748	ATC	Minor	Westbound
304	A20 Coldharbour Lane	12/06/15 - 30/06/15	573325	157975	ATC	A	Northbound
304	A20 Coldharbour Lane	12/06/15 - 30/06/15	573325	157975	ATC	A	Southbound
305	A229	14/06/15 - 07/07/15	575567	157903	ATC	A	Northbound
305	A229	14/06/15 - 07/07/15	575567	157903	ATC	A	Southbound
306	Sandling Lane	12/06/15 - 29/06/15	575711	157988	ATC	Minor	Eastbound
306	Sandling Lane	12/06/15 - 29/06/15	575711	157988	ATC	Minor	Westbound
307	Boxley Road	12/06/15 - 30/06/15	576987	157561	ATC	Minor	Northbound
307	Boxley Road	12/06/15 - 30/06/15	576987	157561	ATC	Minor	Southbound
309	Hockers Lane	12/06/15 - 30/06/15	579070	156920	ATC	Minor	Northbound
309	Hockers Lane	12/06/15 - 30/06/15	579070	156920	ATC	Minor	Southbound
310	Thurnham Lane	12/06/15 - 30/06/15	580127	156570	ATC	Minor	Northbound
310	Thurnham Lane	12/06/15 - 30/06/15	580127	156570	ATC	Minor	Southbound
314	Ulcombe Road	20/06/15 - 02/07/15	581395	151388	ATC	Minor	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
314	Ulcombe Road	20/06/15 - 02/07/15	581395	151388	ATC	Minor	Southbound
316	Wamlake Road	12/06/15 - 29/06/15	580743	150131	ATC	Minor	Eastbound
316	Wamlake Road	12/06/15 - 29/06/15	580743	150131	ATC	Minor	Westbound
317	A229 Linton Hill	12/06/15 - 30/06/15	575510	149324	ATC	A	Northbound
317	A229 Linton Hill	12/06/15 - 30/06/15	575510	149324	ATC	A	Southbound
318	B2010 Yalding Hill	12/06/15 - 30/06/15	570543	151401	ATC	B	Eastbound
318	B2010 Yalding Hill	12/06/15 - 30/06/15	570543	151401	ATC	B	Westbound
411	A296 Roman Road	13/06/15 - 29/06/15	558976	172906	ATC	A	Eastbound
411	A296 Roman Road	13/06/15 - 29/06/15	558976	172906	ATC	A	Westbound
414	Hever Court Road	12/06/15 - 28/06/15	565705	170597	ATC	Minor	Eastbound
414	Hever Court Road	12/06/15 - 28/06/15	565705	170597	ATC	Minor	Westbound
415	Valley Drive	12/06/15 - 07/07/15	566154	170578	ATC	Minor	Northbound
415	Valley Drive	12/06/15 - 07/07/15	566154	170578	ATC	Minor	Southbound
416	Thong Lane	12/06/15 - 28/06/15	567292	170249	ATC	Minor	Northbound
416	Thong Lane	12/06/15 - 28/06/15	567292	170249	ATC	Minor	Southbound
417	Brewers Road	12/06/15 - 28/06/15	568911	170107	ATC	Minor	Eastbound
417	Brewers Road	12/06/15 - 28/06/15	568911	170107	ATC	Minor	Westbound
419	M2 Slip at J1 to A2 Watling St East	12/06/15 - 29/06/15	570933	169475	ATC	M	Eastbound
419	M2 Slip at J1 from A2 Watling St West	12/06/15 - 29/06/15	570933	169475	ATC	M	Westbound
420	A228 Cuxton Road	12/06/15 - 07/07/15	572294	167783	ATC	A	Eastbound
420	A228 Cuxton Road	12/06/15 - 07/07/15	572294	167783	ATC	A	Westbound
421	Borstal Street	13/06/15 - 30/06/15	573205	166799	ATC	Minor	Eastbound
421	Borstal Street	13/06/15 - 30/06/15	573205	166799	ATC	Minor	Westbound
423	A2045	12/06/15 - 29/06/15	575119	162564	ATC	A	Eastbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
423	A2045	12/06/15 - 29/06/15	575119	162564	ATC	A	Westbound
501	Lower Higham Road	12/06/15 - 21/06/15	568727	173136	ATC	Minor	Westbound
501	Lower Higham Road	12/06/15 - 21/06/15	568726	173136	ATC	Minor	Westbound
505	The Street	12/06/15 - 28/06/15	567059	168503	ATC	Minor	Eastbound
505	The Street	12/06/15 - 28/06/15	567059	168503	ATC	Minor	Westbound
506	Birling Road	13/06/15 - 30/06/15	567041	159976	ATC	Minor	Eastbound
506	Birling Road	13/06/15 - 30/06/15	567041	159976	ATC	Minor	Westbound
509	A20 London Road	13/06/15 - 30/06/15	567258	158535	ATC	A	Eastbound
509	A20 London Road	13/06/15 - 30/06/15	567258	158535	ATC	A	Westbound
510	Teston Road	13/06/15 - 30/06/15	566959	157066	ATC	Minor	Eastbound
510	Teston Road	13/06/15 - 30/06/15	566959	157066	ATC	Minor	Westbound
511	B2016 Seven Mile Lane	13/06/15 - 30/06/15	565081	154082	ATC	B	Northbound
511	B2016 Seven Mile Lane	13/06/15 - 30/06/15	565081	154082	ATC	B	Southbound
906	A228 Malling Road	13/06/15 - 29/06/15	569496	160240	ATC	A	Southbound
907	A20 London Road	01/07/15 - 07/07/15	557562	162893	ATC	A	Northbound
907	A20 London Road	01/07/15 - 07/07/15	557562	162893	ATC	A	Southbound
908	A20 London Road	13/06/15 - 29/06/15	557562	162893	ATC	A	Eastbound
908	A20 London Road	13/06/15 - 29/06/15	557562	162893	ATC	A	Westbound
910	A206 Crossways Blvd	13/06/15 - 30/07/15	556616	175467	ATC	A	Eastbound
910	A206 Crossways Blvd	13/06/15 - 30/07/15	556616	175467	ATC	A	Westbound
911	Headcorn Road	14/06/15 - 28/06/15	588195	151013	ATC	Minor	Eastbound
911	Headcorn Road	14/06/15 - 28/06/15	588195	151013	ATC	Minor	Westbound
912	A20 Ashford Road	14/06/15 - 28/06/15	584312	153246	ATC	A	Eastbound
912	A20 Ashford Road	14/06/15 - 28/06/15	584312	153246	ATC	A	Westbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
913	A249	14/06/15 - 30/06/15	589953	166055	ATC	A	Northbound
913	A249	14/06/15 - 30/06/15	589953	166055	ATC	A	Southbound
914	A262 Cranbrook Road	15/06/15 - 30/06/15	573778	137692	ATC	A	Eastbound
914	A262 Cranbrook Road	15/06/15 - 30/06/15	573778	137692	ATC	A	Westbound
915	A262 Sissinghurst Road	15/06/15 - 28/06/15	584257	138404	ATC	A	Eastbound
915	A262 Sissinghurst Road	15/06/15 - 28/06/15	584257	138404	ATC	A	Westbound
916	A227 Ightham Road	13/06/15 - 21/06/15	559352	154854	ATC	A	Northbound
916	A227 Ightham Road	13/06/15 - 21/06/15	559352	154854	ATC	A	Southbound
917	Maidstone Road	14/06/15 - 23/06/15	596842	146760	ATC	Minor	Northbound
917	Maidstone Road	14/06/15 - 23/06/15	596842	146760	ATC	Minor	Southbound
918	A2070 Willesborough Road	14/06/15 - 07/07/15	602730	143982	ATC	A	Northbound
918	A2070 Willesborough Road	14/06/15 - 07/07/15	602730	143982	ATC	A	Southbound
919	A251 Ashford Road	14/06/15 - 29/06/15	601165	157230	ATC	A	Northbound
919	A251 Ashford Road	14/06/15 - 29/06/15	601165	157230	ATC	A	Southbound
906NB	A228 Malling Road	28/09/15 - 04/10/15	569449	160193	ATC	A	Northbound
9	A229 Highview Drive/Maidstone Road	18/06/2015	574773	164581	MCC	A	Northbound
9	A229 Highview Drive/Maidstone Road	18/06/2015	574773	164581	MCC	A	Southbound
14	A206 Thames Road	18/06/2015	552526	175451	MCC	A	Northbound
14	A206 Thames Road	18/06/2015	552526	175451	MCC	A	Southbound
16	A226 London Road	18/06/2015	555787	173893	MCC	A	Eastbound
16	A226 London Road	18/06/2015	555787	173893	MCC	A	Westbound
103	Star Hill Road	18/06/2015	549386	158559	MCC	Minor	Northbound
103	Star Hill Road	18/06/2015	549386	158559	MCC	Minor	Southbound
107	A2	18/06/2015	553754	172274	MCC	A	Eastbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
107	A2	18/06/2015	553754	172274	MCC	A	Westbound
109	A225 Hawley Road	18/06/2015	554774	172261	MCC	A	Northbound
109	A225 Hawley Road	18/06/2015	554774	172261	MCC	A	Southbound
110	A296 Princes Road	18/06/2015	555487	173359	MCC	A	Eastbound
110	A296 Princes Road	18/06/2015	555487	173359	MCC	A	Westbound
110	A296 Princes Road	18/06/2015	555487	173359	MCC	A	Eastbound
110	A296 Princes Road	18/06/2015	555487	173359	MCC	A	Westbound
111	B2500 Watling Street	18/06/2015	555602	173715	MCC	B	Eastbound
111	B2500 Watling Street	18/06/2015	555602	173715	MCC	B	Westbound
114	Rennie Drive	18/06/2015	555915	175233	MCC	Minor	Eastbound
114	Rennie Drive	18/06/2015	555915	175233	MCC	Minor	Westbound
115	Stonehouse Lane	18/06/2015	557180	178549	MCC	Minor	Northbound
115	Stonehouse Lane	18/06/2015	557180	178549	MCC	Minor	Southbound
116	A1306 Arterial Road Purfleet	18/06/2015	557018	178795	MCC	A	Eastbound
116	A1306 Arterial Road Purfleet	18/06/2015	557018	178795	MCC	A	Westbound
126	A228 Four Elms Hill	18/06/2015	575699	171724	MCC	A	Eastbound
126	A228 Four Elms Hill	18/06/2015	575699	171724	MCC	A	Westbound
145	A264 Pembury Road	18/06/2015	560972	140422	MCC	A	Eastbound
145	A264 Pembury Road	18/06/2015	560972	140422	MCC	A	Westbound
146	A26 London Road	18/06/2015	558031	144368	MCC	A	Northbound
146	A26 London Road	18/06/2015	558031	144368	MCC	A	Southbound
149	B2042 Ide Hill Road	18/06/2015	548808	151700	MCC	B	Northbound
149	B2042 Ide Hill Road	18/06/2015	548808	151700	MCC	B	Southbound
156	A224 Orpington By-Pass	18/06/2015	549444	162372	MCC	A	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
156	A224 Orpington By-Pass	18/06/2015	549444	162372	MCC	A	Southbound
209	A228	18/06/2015	570447	162968	MCC	A	Northbound
209	A228	18/06/2015	570447	162968	MCC	A	Southbound
213	A249 Detling Hill	18/06/2015	580004	158667	MCC	A	Eastbound
213	A249 Detling Hill	18/06/2015	580004	158667	MCC	A	Westbound
218	A251 Buck Street	18/06/2015	601126	150822	MCC	A	Northbound
218	A251 Buck Street	18/06/2015	601126	150822	MCC	A	Southbound
219	A28 Ashford Road	18/06/2015	607577	153545	MCC	A	Northbound
219	A28 Ashford Road	18/06/2015	607577	153545	MCC	A	Southbound
301	A26 Tonbridge Road	18/06/2015	569594	153399	MCC	A	Eastbound
301	A26 Tonbridge Road	18/06/2015	569594	153399	MCC	A	Westbound
304	A20 Coldharbour Lane	18/06/2015	573296	157969	MCC	A	Northbound
304	A20 Coldharbour Lane	18/06/2015	573296	157969	MCC	A	Southbound
305	A229	18/06/2015	575705	157027	MCC	A	Northbound
305	A229	18/06/2015	575705	157027	MCC	A	Southbound
306	Sandling Lane	18/06/2015	576340	157574	MCC	Minor	Eastbound
306	Sandling Lane	18/06/2015	576340	157574	MCC	Minor	Westbound
307	Boxley Road	18/06/2015	577007	157627	MCC	Minor	Northbound
307	Boxley Road	18/06/2015	577007	157627	MCC	Minor	Southbound
309	Hockers Lane	18/06/2015	579070	156920	MCC	Minor	Northbound
309	Hockers Lane	18/06/2015	579070	156920	MCC	Minor	Southbound
315	A274 Maidstone Road	18/06/2015	581031	150588	MCC	A	Northbound
315	A274 Maidstone Road	18/06/2015	581031	150588	MCC	A	Southbound
317	A229 Linton Hill	18/06/2015	575615	149139	MCC	A	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
317	A229 Linton Hill	18/06/2015	575615	149139	MCC	A	Southbound
318	B2010 Yalding Hill	18/06/2015	570150	150795	MCC	B	Northbound
318	B2010 Yalding Hill	18/06/2015	570150	150795	MCC	B	Southbound
415	Valley Drive	18/06/2015	566162	170628	MCC	Minor	Northbound
415	Valley Drive	18/06/2015	566162	170628	MCC	Minor	Southbound
417	Brewers Road	18/06/2015	568483	169894	MCC	Minor	Eastbound
417	Brewers Road	18/06/2015	568483	169894	MCC	Minor	Westbound
419	A2 Watling Street	18/06/2015	570933	169476	MCC	A	Eastbound
419	A2 Watling Street	18/06/2015	570933	169476	MCC	A	Westbound
419	M2 Slip at J1 to A2 Watling St East	18/06/2015	571008	169496	MCC	M	Eastbound
419	M2 Slip at J1 from A2 Watling St West	18/06/2015	571008	169496	MCC	M	Westbound
420	A228 Sunridge Hill	18/06/2015	572129	167720	MCC	A	Eastbound
420	A228 Sunridge Hill	18/06/2015	572129	167720	MCC	A	Westbound
421	Borstal Street	18/06/2015	573157	166741	MCC	Minor	Eastbound
421	Borstal Street	18/06/2015	573157	166741	MCC	Minor	Westbound
423	A2045	18/06/2015	575025	162593	MCC	A	Eastbound
423	A2045	18/06/2015	575025	162593	MCC	A	Westbound
502	A226 Rochester Road	18/06/2015	567748	172777	MCC	A	Eastbound
502	A226 Rochester Road	18/06/2015	567748	172777	MCC	A	Westbound
509	A20 London Road	18/06/2015	567140	158619	MCC	A	Eastbound
509	A20 London Road	18/06/2015	567140	158619	MCC	A	Westbound
511	B2016 Seven Mile Lane	18/06/2015	565093	154011	MCC	B	Northbound
511	B2016 Seven Mile Lane	18/06/2015	565093	154011	MCC	B	Southbound
906	A228 Malling Road	18/06/2015	569178	159551	MCC	A	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
906	A228 Malling Road	18/06/2015	569178	159551	MCC	A	Southbound
907	A20 London Road	18/06/2015	562482	158923	MCC	A	Northbound
907	A20 London Road	18/06/2015	562482	158923	MCC	A	Southbound
908	A20 London Road	18/06/2015	557306	163148	MCC	A	Eastbound
908	A20 London Road	18/06/2015	557306	163148	MCC	A	Westbound
910	A206 Crossways Blvd	18/06/2015	556911	175389	MCC	A	Eastbound
910	A206 Crossways Blvd	18/06/2015	556911	175389	MCC	A	Westbound
911	Headcorn Road	18/06/2015	588324	151052	MCC	Minor	Eastbound
911	Headcorn Road	18/06/2015	588324	151052	MCC	Minor	Westbound
912	A20 Ashford Road	18/06/2015	584192	153264	MCC	A	Eastbound
912	A20 Ashford Road	18/06/2015	584192	153264	MCC	A	Westbound
913	A249	18/06/2015	589242	165353	MCC	A	Northbound
913	A249	18/06/2015	589242	165353	MCC	A	Southbound
914	A262 Cranbrook Road	18/06/2015	573306	137823	MCC	A	Eastbound
914	A262 Cranbrook Road	18/06/2015	573306	137823	MCC	A	Westbound
915	A262 Sissinghurst Road	18/06/2015	584671	138349	MCC	A	Eastbound
915	A262 Sissinghurst Road	18/06/2015	584671	138349	MCC	A	Westbound
916	A227 Ightham Road	18/06/2015	559159	154105	MCC	A	Northbound
916	A227 Ightham Road	18/06/2015	559159	154105	MCC	A	Southbound
917	Maidstone Road	18/06/2015	597017	146555	MCC	Minor	Northbound
917	Maidstone Road	18/06/2015	597017	146555	MCC	Minor	Southbound
918	A2070 Willesborough Road	18/06/2015	602838	143732	MCC	A	Northbound
918	A2070 Willesborough Road	18/06/2015	602838	143732	MCC	A	Southbound
919	A251 Ashford Road	18/06/2015	601331	157960	MCC	A	Northbound

Site Ref	Description	Survey date	Easting	Northing	Count type	Road type	Direction
919	A251 Ashford Road	18/06/2015	601331	157960	MCC	A	Southbound
102-103	M20	18/06/2015	552339	167922	MCC	M	Eastbound
102-103	M20	18/06/2015	552339	167922	MCC	M	Westbound
118-119	A13	18/06/2015	555386	179922	MCC	A	Northbound
118-119	A13	18/06/2015	555386	179922	MCC	A	Southbound
135-136	M20	18/06/2015	605562	140170	MCC	M	Northbound
507-508	M20	18/06/2015	566720	159339	MCC	M	Eastbound
507-508	M20	18/06/2015	566720	159339	MCC	M	Westbound
112	A206 Bob Dunn Way	15/06/15 - 21/06/15	555799	175185	7 day CLC	A	Northbound
112	A206 Bob Dunn Way	15/06/15 - 21/06/15	555799	175185	7 day CLC	A	Southbound
124	A1306 Arterial Road	15/06/15 - 21/06/15	557612	178977	7 day CLC	A	Eastbound
124	A1306 Arterial Road	15/06/15 - 21/06/15	557612	178977	7 day CLC	A	Westbound
211	A229 Maidstone Road close to M2 J3	15/06/15 - 21/06/15	574467	162165	7 day CLC	A	Northbound
211	A229 Maidstone Road close to M2 J3	15/06/15 - 21/06/15	574467	162165	7 day CLC	A	Southbound
308	A249	15/06/15 - 21/06/15	577946	157152	7 day CLC	A	Northbound
308	A249	15/06/15 - 21/06/15	577946	157152	7 day CLC	A	Southbound
311	M20 J8 Approach Road	15/06/15 - 21/06/15	582364	154682	7 day CLC	M	Northbound
311	M20 J8 Approach Road	15/06/15 - 21/06/15	582364	154682	7 day CLC	M	Southbound
418	A289 Hasted Road	15/06/15 - 21/06/15	570498	169938	7 day CLC	A	Northbound
418	A289 Hasted Road	15/06/15 - 21/06/15	570498	169938	7 day CLC	A	Southbound
427	A278 Hoath Way	15/06/15 - 21/06/15	580058	162946	7 day CLC	A	Northbound
427	A278 Hoath Way	15/06/15 - 21/06/15	580058	162946	7 day CLC	A	Southbound
TSP V2	A22 Godstone Hill	15/06/15 - 21/06/15	535105	153059	7 day CLC	A	Northbound
TSP V2	A22 Godstone Hill	15/06/15 - 21/06/15	535105	153059	7 day CLC	A	Southbound

Table A.5 Transport for London count locations used in the LTAM development

Site Ref	Description	Survey Date	Easting	Northing	Count type	Road type	Direction
7	A101	29/02/16 - 20/03/16	535528	180398	ATC	A Road	Northbound
7	A101	29/02/16 - 20/03/16	535528	180398	ATC	A Road	Southbound
43	A316 Great Chertsey Road	29/02/16 - 20/03/16	520410	176500	ATC	A Road	Northbound
43	A316 Great Chertsey Road	29/02/16 - 20/03/16	520410	176500	ATC	A Road	Southbound
90	A316 Twickenham Road	29/02/16 - 20/03/16	517077	174670	ATC	A Road	Northeast
90	A316 Twickenham Road	29/02/16 - 20/03/16	517077	174670	ATC	A Road	Southwest
118	A12 Colchester Road	01/03/15 - 31/03/15	556078	191954	ATC	A Road	Westbound
119	A12 Colchester Road	01/03/15 - 31/03/15	556032	191953	ATC	A Road	Eastbound
151	A110 Lea Valley Road	29/02/16 - 20/03/16	537030	195174	ATC	A Road	Westbound
151	A110 Lea Valley Road	29/02/16 - 20/03/16	537030	195174	ATC	A Road	Eastbound
168	A127 Southend Arterial Road	01/03/15 - 31/03/15	557599	188699	ATC	A Road	Eastbound
168	A127 Southend Arterial Road	01/03/15 - 31/03/15	557599	188699	ATC	A Road	Westbound
197	A102	29/02/16 - 20/03/16	539104	179362	ATC	A Road	Southbound
198	A102	29/02/16 - 20/03/16	539104	179362	ATC	A Road	Northbound
225	A3216 Chelsea Bridge Road	29/02/16 - 20/03/16	528590	177564	ATC	A Road	Northbound
225	A3216 Chelsea Bridge Road	29/02/16 - 20/03/16	528590	177564	ATC	A Road	Southbound
226	A3220 Battersea Bridge Road	29/02/16 - 20/03/16	527110	177175	ATC	A Road	Northbound
226	A3220 Battersea Bridge Road	29/02/16 - 20/03/16	527110	177175	ATC	A Road	Southbound
228	A202	29/02/16 - 20/03/16	530230	178102	ATC	A Road	Northbound
229	A202	29/02/16 - 20/03/16	530004	178285	ATC	A Road	Southbound
230	A300 Southwark Bridge Road	29/02/16 - 20/03/16	532311	180414	ATC	A Road	Southbound
230	A300 Southwark Bridge Road	29/02/16 - 20/03/16	532311	180414	ATC	A Road	Northbound
231	A3 King William Street	29/02/16 - 20/03/16	532826	180671	ATC	A Road	Southbound

Site Ref	Description	Survey Date	Easting	Northing	Count type	Road type	Direction
231	A3 King William Street	29/02/16 - 20/03/16	532826	180671	ATC	A Road	Northbound
282	A12 Eastern Avenue	01/03/15 - 31/03/15	541359	188339	ATC	A Road	Eastbound
283	A12 Eastern Avenue	01/03/15 - 31/03/15	541359	188289	ATC	A Road	Westbound
916	A301	12/01/15 - 25/01/15	530785	180515	ATC	A Road	Northbound
917	A302 Westminster Bridge Road	11/12/15 - 17/12/15	530475	179662	ATC	A Road	Eastbound
917	A302 Westminster Bridge Road	11/12/15 - 17/12/15	530475	179662	ATC	A Road	Westbound
1533 EB	A3203	01/06/15 - 07/06/15	530410	178957	ATC	A Road	Eastbound
1533 WB	A3203	01/06/15 - 07/06/15	530410	178957	ATC	A Road	Westbound
4	A300 Southwark Bridge Road	2014	532363	180600	MCC	A Road	Northbound
4	A300 Southwark Bridge Road	2014	532363	180600	MCC	A Road	Southbound
7	A3216 Chelsea Bridge Road	2014	528565	177810	MCC	A Road	Northbound
7	A3216 Chelsea Bridge Road	2014	528565	177810	MCC	A Road	Southbound
8	A244 Walton Bridge Road	2014	509260	166529	MCC	A Road	Northbound
8	A244 Walton Bridge Road	2014	509260	166529	MCC	A Road	Southbound
9	A309 Hampton Court Bridge	2014	515394	168488	MCC	A Road	Northbound
9	A309 Hampton Court Bridge	2014	515394	168488	MCC	A Road	Southbound
10	A316 Twickenham Road	2014	517209	174841	MCC	A Road	Northbound
10	A316 Twickenham Road	2014	517209	174841	MCC	A Road	Southbound
11	A205 Kew Road	2014	519002	177855	MCC	A Road	Northbound
11	A205 Kew Road	2014	519002	177855	MCC	A Road	Southbound
13	B375 Chertsey Bridge Road	2014	505401	166624	MCC	B Road	Eastbound
13	B375 Chertsey Bridge Road	2014	505401	166624	MCC	B Road	Westbound
14	A308 Horse Fair	2014	517708	169376	MCC	A Road	Eastbound
14	A308 Horse Fair	2014	517708	169376	MCC	A Road	Westbound

Site Ref	Description	Survey Date	Easting	Northing	Count type	Road type	Direction
16	A217 Wandsworth Bridge Road	2014	525977	175560	MCC	A Road	Northbound
16	A217 Wandsworth Bridge Road	2014	525977	175560	MCC	A Road	Southbound
17	A3220 Battersea Bridge Road	2014	526994	177387	MCC	A Road	Northbound
17	A3220 Battersea Bridge Road	2014	526994	177387	MCC	A Road	Southbound
19	A201 Blackfriars Bridge	2014	531648	180674	MCC	A Road	Northbound
19	A201 Blackfriars Bridge	2014	531648	180674	MCC	A Road	Southbound
21	A301 Waterloo Bridge	2014	530804	180495	MCC	A Road	Northbound
21	A301 Waterloo Bridge	2014	530804	180495	MCC	A Road	Southbound
22	A219 Putney Bridge Approach	2014	524222	175721	MCC	A Road	Northbound
22	A219 Putney Bridge Approach	2014	524222	175721	MCC	A Road	Southbound
23	A3 King William Street	2014	532805	180506	MCC	A Road	Northbound
23	A3 King William Street	2014	532805	180506	MCC	A Road	Southbound
24	A101 Rotherhithe Tunnel	2014	535529	180408	MCC	A Road	Southbound
24	A101 Rotherhithe Tunnel	2014	535529	180408	MCC	A Road	Northbound
27	A302 Westminster Bridge Road	2014	530410	179666	MCC	A Road	Eastbound
27	A302 Westminster Bridge Road	2014	530410	179666	MCC	A Road	Westbound
28	A100 Tower Bridge	2014	533675	180257	MCC	A Road	Northbound
28	A100 Tower Bridge	2014	533675	180257	MCC	A Road	Southbound
29	A306 Hammersmith Bridge Road	2014	522961	178073	MCC	A Road	Northbound
29	A306 Hammersmith Bridge Road	2014	522961	178073	MCC	A Road	Southbound
30	A3031 Albert Bridge Road	2014	527395	177519	MCC	A Road	Northbound
30	A3031 Albert Bridge Road	2014	527395	177519	MCC	A Road	Southbound
3139	A118 Romford Road	22/09/2014	543268	186192	MCC	A Road	Eastbound
3139	A118 Romford Road	22/09/2014	543268	186192	MCC	A Road	Westbound

Site Ref	Description	Survey Date	Easting	Northing	Count type	Road type	Direction
4814	A210 Eltham Road	10/12/2014	541304	174612	MCC	A Road	Eastbound
4814	A210 Eltham Road	10/12/2014	541304	174612	MCC	A Road	Westbound
4819	A1199 High Road	12/05/2015	540151	190465	MCC	A Road	Northbound
4819	A1199 High Road	12/05/2015	540151	190465	MCC	A Road	Southbound

Table A.6 Local authority count locations used in the LTAM development

Site Ref	Description	Local Authority	Survey Date	Easting	Northing	Count type	Road type	Direction
16	A22 Lewes Road	East Sussex	29/02/16 - 20/03/16	541842	135964	ATC	A	Northbound
16	A22 Lewes Road	East Sussex	29/02/16 - 20/03/16	541842	135964	ATC	A	Southbound
20	A28 Station Road	East Sussex	29/02/16 - 20/03/16	583493	126446	ATC	A	Northbound
20	A28 Station Road	East Sussex	29/02/16 - 20/03/16	583493	126446	ATC	A	Southbound
30	A267	East Sussex	29/02/16 - 20/03/16	558884	134915	ATC	A	Northbound
30	A267	East Sussex	29/02/16 - 20/03/16	558884	134915	ATC	A	Southbound
60	B2100 Cousley Wood Road	East Sussex	29/02/16 - 20/03/16	565769	133680	ATC	B	Northbound
60	B2100 Cousley Wood Road	East Sussex	29/02/16 - 20/03/16	565769	133680	ATC	B	Southbound
161	B2099	East Sussex	29/02/16 - 20/03/16	571200	128800	ATC	B	Westbound
161	B2099	East Sussex	29/02/16 - 20/03/16	571200	128800	ATC	B	Eastbound
162	B2087 High Street	East Sussex	05/10/15 - 25/10/15	571297	131248	ATC	B	Eastbound
162	B2087 High Street	East Sussex	05/10/15 - 25/10/15	571297	131248	ATC	B	Westbound
16A	A22 Lewes Road	East Sussex	03/04/2014	542500	135100	MCC	A	Northbound
16A	A22 Lewes Road	East Sussex	03/04/2014	542500	135100	MCC	A	Southbound
1C	B2087 High Street	East Sussex	14/05/2014	571500	131200	MCC	B	Eastbound
1C	B2087 High Street	East Sussex	14/05/2014	571500	131200	MCC	B	Westbound
20A	A28 Station Road	East Sussex	19/03/2015	583400	126300	MCC	A	Northbound
20A	A28 Station Road	East Sussex	19/03/2015	583400	126300	MCC	A	Southbound
60B	B2100 Sparrows Green Road	East Sussex	08/05/2014	563600	132200	MCC	B	Eastbound
60B	B2100 Sparrows Green Road	East Sussex	08/05/2014	563600	132200	MCC	B	Westbound
07C09	A1060 Roxwell Road	Essex	01/03/16 - 20/03/16	568075	207527	ATC	A	Eastbound
07C09	A1060 Roxwell Road	Essex	01/03/16 - 20/03/16	568075	207527	ATC	A	Westbound
13040-08	A1306 Arterial Road	Essex	24/06/13 - 30/06/13	558432	179341	ATC	A	Eastbound

Site Ref	Description	Local Authority	Survey Date	Easting	Northing	Count type	Road type	Direction
13040-08	A1306 Arterial Road	Essex	24/06/13 - 30/06/13	558432	179341	ATC	A	Westbound
13042-06	A414 Chelmsford Road, High Ongar	Essex	02/07/13 - 08/07/13	557133	203816	ATC	A	Eastbound
13042-06	A414 Chelmsford Road, High Ongar	Essex	02/07/13 - 08/07/13	557133	203816	ATC	A	Westbound
13042-13	A121 Dowding Way Waltham Abbey	Essex	25/06/13 - 30/06/13	539731	199509	ATC	A	Eastbound
13042-13	A121 Dowding Way Waltham Abbey	Essex	25/06/13 - 30/06/13	539731	199509	ATC	A	Westbound
14292-03	B186 West Thurrock Way	Essex	22/04/14 - 28/04/14	558570	178573	ATC	B	Eastbound
14292-03	B186 West Thurrock Way	Essex	22/04/14 - 28/04/14	558570	178573	ATC	B	Westbound
14345-05	A132 Nevendon Road	Essex	19/05/14 - 25/05/14	573618	191463	ATC	A	Northbound
14345-05	A132 Nevendon Road	Essex	19/05/14 - 25/05/14	573618	191463	ATC	A	Southbound
14430-16	A120	Essex	08/07/14 - 21/07/14	551314	221662	ATC	A	Eastbound
14430-16	A120	Essex	08/07/14 - 21/07/14	551314	221662	ATC	A	Westbound
14447-01	B1002 Roman Road	Essex	01/10/14 - 07/10/14	562609	197306	ATC	B	Northbound
14447-01	B1002 Roman Road	Essex	01/10/14 - 07/10/14	562609	197306	ATC	B	Southbound
14471-01	B1051 High Street	Essex	18/09/14 - 24/09/14	553724	226329	ATC	B	Eastbound
14471-01	B1051 High Street	Essex	18/09/14 - 24/09/14	553724	226329	ATC	B	Westbound
14528-38	West Hanningfield Road	Essex	08/10/14 - 14/10/14	573305	203039	ATC	Minor	Northbound
14528-38	West Hanningfield Road	Essex	08/10/14 - 14/10/14	573305	203039	ATC	Minor	Southbound
14528-40	A1060 Maldon Road	Essex	08/10/14 - 14/10/14	574440	205462	ATC	A	Eastbound
14528-40	A1060 Maldon Road	Essex	08/10/14 - 14/10/14	574440	205462	ATC	A	Westbound
14545-01	B181 High Street	Essex	07/10/14 - 13/10/14	540755	210311	ATC	B	Northbound
14545-01	B181 High Street	Essex	07/10/14 - 13/10/14	540755	210311	ATC	B	Southbound
14603-01	B194 Nazeing New Road	Essex	01/12/14 - 07/12/14	537724	206768	ATC	B	Northbound
14603-01	B194 Nazeing New Road	Essex	01/12/14 - 07/12/14	537724	206768	ATC	B	Southbound
14618-5908	A1184 Harlow Road	Essex	04/03/15 - 17/03/15	547143	213007	ATC	A	Southbound

Site Ref	Description	Local Authority	Survey Date	Easting	Northing	Count type	Road type	Direction
14618-5908	A1184 Harlow Road	Essex	04/03/15 - 17/03/15	547143	213007	ATC	A	Northbound
14618-9246	A414 Fifth Avenue Allende Avenue	Essex	04/03/15 - 17/03/15	544248	211489	ATC	A	Southbound
14618-9246	A414 Fifth Avenue Allende Avenue	Essex	04/03/15 - 17/03/15	544248	211489	ATC	A	Northbound
14622-01	A1114 Southend Road	Essex	18/05/15 - 31/05/15	573791	204059	ATC	A	Southbound
14622-01	A1114 Southend Road	Essex	18/05/15 - 31/05/15	573791	204059	ATC	A	Northbound
15106-01	B184 The Street	Essex	03/02/15 - 09/02/15	560462	217570	ATC	B	Northbound
15106-01	B184 The Street	Essex	03/02/15 - 09/02/15	560462	217570	ATC	B	Southbound
15140-7165	Writtle Road	Essex	02/05/15 - 15/05/15	568829	206053	ATC	Minor	Eastbound
15140-7165	Writtle Road	Essex	02/05/15 - 15/05/15	568829	206053	ATC	Minor	Westbound
15149-01	Rectory Road	Essex	25/02/15 - 03/03/15	586040	191829	ATC	Minor	Eastbound
15149-01	Rectory Road	Essex	25/02/15 - 03/03/15	586040	191829	ATC	Minor	Westbound
15160-01	A128 Ongar Road	Essex	24/03/15 - 30/03/15	556820	196857	ATC	A	Northbound
15160-01	A128 Ongar Road	Essex	24/03/15 - 30/03/15	556820	196857	ATC	A	Southbound
15189-01	Church Road over A12	Essex	28/04/15 - 04/05/15	563289	197545	ATC	Minor	Northbound
15189-01	Church Road over A12	Essex	28/04/15 - 04/05/15	563289	197545	ATC	Minor	Southbound
15209-01	B1008 Main Road	Essex	02/06/15 - 08/06/15	570745	210989	ATC	B	Northbound
15209-01	B1008 Main Road	Essex	02/06/15 - 08/06/15	570745	210989	ATC	B	Southbound
15235-01	B184	Essex	30/06/15 - 06/07/15	562053	223750	ATC	B	Northbound
15235-01	B184	Essex	30/06/15 - 06/07/15	562053	223750	ATC	B	Southbound
15235-06	B1256 Stortford Road	Essex	30/06/15 - 06/07/15	561371	221817	ATC	B	Eastbound
15235-06	B1256 Stortford Road	Essex	30/06/15 - 06/07/15	561371	221817	ATC	B	Westbound
15241-01	A121 Honey Lane	Essex	23/06/15 - 29/06/15	541387	199731	ATC	A	Eastbound
15241-01	A121 Honey Lane	Essex	23/06/15 - 29/06/15	541387	199731	ATC	A	Westbound
15269-01	Dobb's Weir Road Roydon	Essex	30/06/15 - 06/07/15	538413	208215	ATC	Minor	Northbound

Site Ref	Description	Local Authority	Survey Date	Easting	Northing	Count type	Road type	Direction
15269-01	Dobb's Weir Road Roydon	Essex	30/06/15 - 06/07/15	538413	208215	ATC	Minor	Southbound
15277-01	A1060 Chelmsford Road	Essex	15/07/15 - 21/07/15	560983	211294	ATC	A	Northbound
15277-01	A1060 Chelmsford Road	Essex	15/07/15 - 21/07/15	560983	211294	ATC	A	Southbound
15433-01	A1060 Roxwell Road Chelmsford	Essex	09/12/15 - 10/12/15	568789	207500	ATC	A	Eastbound
15433-01	A1060 Roxwell Road Chelmsford	Essex	09/12/15 - 10/12/15	568789	207500	ATC	A	Westbound
16319-01	Woodhall Hill Chignal Smealy	Essex	27/09/16 - 03/10/16	568371	210617	ATC	Minor	Northbound
16319-01	Woodhall Hill Chignal Smealy	Essex	27/09/16 - 03/10/16	568371	210617	ATC	Minor	Southbound
CHELM- 16	B1007 Stock Road	Essex	15/07/14 - 27/07/14	570464	201804	ATC	B	Northbound
CHELM- 16	B1007 Stock Road	Essex	15/07/14 - 27/07/14	570464	201804	ATC	B	Southbound
CHELM- 41	Woodhill Road	Essex	14/07/14 - 28/07/14	574609	204882	ATC	Minor	Westbound
CHELM- 41	Woodhill Road	Essex	14/07/14 - 28/07/14	574609	204882	ATC	Minor	Eastbound
155	A41 Watford Road	Hertfordshire	16/03/15 - 29/03/15	508194	200407	ATC	A	Northbound
155	A41 Watford Road	Hertfordshire	16/03/15 - 29/03/15	508194	200407	ATC	A	Southbound
251	A1081 St Albans Road	Hertfordshire	12/09/13 - 18/09/13	523582	198584	ATC	A	Eastbound
251	A1081 St Albans Road	Hertfordshire	12/09/13 - 18/09/13	523582	198584	ATC	A	Westbound
392	A1060 Hallingbury Road	Hertfordshire	01/06/15 - 07/06/15	549560	220402	ATC	A	Northbound
392	A1060 Hallingbury Road	Hertfordshire	01/06/15 - 07/06/15	549560	220402	ATC	A	Southbound
430	Norton Road, Letchworth	Hertfordshire	12/10/15 - 18/10/15	544795	154952	ATC	Minor	Northbound
430	Norton Road, Letchworth	Hertfordshire	12/10/15 - 18/10/15	544795	154952	ATC	Minor	Southbound
542	A404 Chorleywood Road, Rickmansworth	Hertfordshire	13/05/14 - 19/05/14	505376	195681	ATC	A	Southbound
542	A404 Chorleywood Road, Rickmansworth	Hertfordshire	13/05/14 - 19/05/14	505376	195681	ATC	A	Northbound
2013-177	B2011 Folkestone Road	Kent	13/12/13 - 19/12/13	629488	140447	ATC	B	Eastbound
2013-177	B2011 Folkestone Road	Kent	13/12/13 - 19/12/13	629488	140447	ATC	B	Westbound

Site Ref	Description	Local Authority	Survey Date	Easting	Northing	Count type	Road type	Direction
2014-156	Sole Street	Kent	20/06/14 - 26/06/14	565717	167701	ATC	Minor	Northbound
2014-156	Sole Street	Kent	20/06/14 - 26/06/14	565717	167701	ATC	Minor	Southbound
2014-185	B2068 Stone Street	Kent	24/09/14 - 30/09/14	613813	150711	ATC	B	Northbound
2014-185	B2068 Stone Street	Kent	24/09/14 - 30/09/14	613813	150711	ATC	B	Southbound
2014-187	B258 Cray Road	Kent	24/09/14 - 30/09/14	550220	167096	ATC	B	Westbound
2014-187	B258 Cray Road	Kent	24/09/14 - 30/09/14	550220	167096	ATC	B	Eastbound
2014-28	A2 High Street	Kent	06/06/14 - 12/06/14	586027	164771	ATC	A	Westbound
2014-28	A2 High Street	Kent	06/06/14 - 12/06/14	586027	164771	ATC	A	Eastbound
2014-64	B2110 Groombridge Hill	Kent	01/07/14 - 08/07/14	553097	137782	ATC	B	Northbound
2014-64	B2110 Groombridge Hill	Kent	01/07/14 - 08/07/14	553097	137782	ATC	B	Southbound
03561E	A243 Kingston Road	Surrey	02/03/15 - 31/03/15	516458	159202	ATC	A	Northbound
03561E	A243 Kingston Road	Surrey	02/03/15 - 31/03/15	516458	159202	ATC	A	Southbound
00190B	A308 The Causeway	Surrey	03/03/14 - 31/03/14	502274	171668	ATC	A	Eastbound
00190B	A308 The Causeway	Surrey	03/03/14 - 31/03/14	502274	171668	ATC	A	Westbound
01040D	A244 Walton Bridge Road	Surrey	01/03/16 - 31/03/16	509180	166591	ATC	A	Northbound
01040D	A244 Walton Bridge Road	Surrey	01/03/16 - 31/03/16	509180	166591	ATC	A	Southbound
04461F	A217 Brighton Road	Surrey	01/06/16 - 30/06/16	525647	152984	ATC	A	Southbound
04461F	A217 Brighton Road	Surrey	01/06/16 - 30/06/16	525647	152984	ATC	A	Northbound
06257F	A25 High Street	Surrey	01/06/16 - 30/06/16	533076	150716	ATC	A	Eastbound
06257F	A25 High Street	Surrey	01/06/16 - 30/06/16	533076	150716	ATC	A	Westbound
372B	B375 Chertsey Bridge Road	Surrey	02/03/15 - 31/03/15	505699	166718	ATC	B	Northbound
372B	B375 Chertsey Bridge Road	Surrey	02/03/15 - 31/03/15	505699	166718	ATC	B	Southbound

Annex B Volumetric data collected

Table B.1 ATC sites surveyed

Site ID	Site Description	Road Class	Easting	Northing
4	A320 St Peter's Way	A Road	504429	165241
8	A405 Denham Way (North Orbital Road)	A Road	503413	193917
10	A121 Meridian Way	A Road	537633	199849
12	Crockenhill Lane	Unclassified	553314	166195
13	B1335 Stifford Road	B Road	557532	180410
14	Chequers Road	Unclassified	554652	194306
15	A1005 The Ridgeway	A Road	527049	200169
17	Theydon Road	Unclassified	544871	200345
18	Warley Road	Unclassified	557298	190347
20	B187 St Mary's Lane	B Road	558566	186989
29	A244	A Road	516182	158751
33	A10 Great Cambridge Road	A Road	534874	199888
34	B1393 High Road	B Road	544624	201063
36	A1090 London Road West Thurrock	A Road	557431	177752
42	A296 Princes Road	A Road	555516	173359
54	B2235 Godstone Hill	B Road	535089	152693
55	A1 Barnet By-Pass	A Road	522025	198884
64	A113 London Road	A Road	550574	197653
69	B269 Titsey Road	B Road	540826	154152
70	A111 Stagg Hill	A Road	526659	199981
72	B556 Bell Lane	B Road	518829	203194
75	B2024 Croydon Road	B Road	543682	154627
76	B2211 Chevening Road	B Road	548462	155671
77	A22	A Road	535788	152291
78	A24 Leatherhead Road	A Road	517531	156858
79	B556	B Road	519329	203260
81	Ship Lane	Unclassified	557242	179012
85	A20	A Road	550323	168529
100	A308	A Road	503212	171544
102	A305 Richmond Road	A Road	517751	174548
111	A1020 Royal Albert Way	A Road	543341	180862
113	A224 Orpington By-Pass	A Road	549079	162816
114	A2	A Road	541167	175548

Site ID	Site Description	Road Class	Easting	Northing
115	A406 Walthamstow Avenue (North Circular Road)	A Road	536222	192280
116	A406 Walthamstow Avenue (North Circular Road)	A Road	536416	192087
118	A208 Court Road	A Road	542500	172986
119	A112 Albert Road	A Road	543088	179932
120	B179 Billet Road	B Road	537300	190931
121	A224 Sevenoaks Way	A Road	547015	170241
122	A118 Romford Road	A Road	543242	186165
123	B210 Wellington Street	B Road	543251	178586
124	A222 Perry Street	A Road	545828	170917
125	A112 Chingford Road	A Road	537495	190889
126	B263 Green Lane	B Road	543549	172544
127	A124 Barking Road	A Road	543529	183942
129	A206 Woolwich Church Street	A Road	543001	179192
130	A20 Sidcup Road	A Road	541019	174527
131	A205 Westhorne Avenue	A Road	541068	174283
132	A117 Woolwich Manor Way	A Road	543705	181051
134	A1199 High Road	A Road	540167	190394
137	A207 Shooters Hill Road	A Road	542687	176719
139	A13 Newham Way	A Road	543525	182508
140	A130	A Road	577660	192314
141	Higham Lane	Unclassified	562042	135121
143	A1245	A Road	578127	191427
144	Raspberry Hill Lane	Unclassified	588234	168229
145	A127 Southend Arterial Road	A Road	564966	189668
146	A120 Thremhall Avenue	A Road	553532	221752
147	Hall Road	Unclassified	586232	190517
151	B2244 Hastings Road	B Road	575685	128932
152	A278 Hoath Way	A Road	580005	162992
153	A176 Noak Hill Road	A Road	568421	191031
155	A289 Hasted Road	A Road	571021	170237
156	A138	A Road	573593	209126
157	B1018 Langford Road	B Road	583424	210556
158	A130 Essex Regiment Way	A Road	571730	211358
167	A2045 Walderslade Woods	A Road	574929	163260
168	A229 Maidstone Road	A Road	574746	163867
169	B1012 Lower Burnham Road	B Road	583797	198651
176	Station Road	Unclassified	548922	214976

Site ID	Site Description	Road Class	Easting	Northing
177	A26	A Road	555039	135084
179	Lidsing Road	Unclassified	578579	161899
182	B2097 Maidstone Road	B Road	573940	165046
183	A226 Gravesend Road	A Road	569914	171600
186	Hambro Hill	Unclassified	581118	192000
190	Dell Lane	Unclassified	549039	217562
194	Marine Parade	Unclassified	589031	185035
196	A2 Watling Street	A Road	571135	169505
197	Southend Road	Unclassified	587613	188871
200	Widford Road	Unclassified	569582	205144
201	A1114 London Road	A Road	569494	205213
204	A129 London Road	A Road	580392	191222
205	A1013 Stanford Road	A Road	566541	181642
206	A13 Stanford-Le-Hope By-Pass	A Road	566429	181770
213	B184 Dunmow Road	B Road	561431	229507
214	M11	Motorway	552480	229473
215	B2082 Wittersham Road	B Road	591596	125206
216	A131 High Garrett	A Road	577338	226529
224	West Hoathly Road	Unclassified	539050	136519
229	B2037 Effingham Road	B Road	532277	140966
231	B2028 Turners Hill Road	B Road	533904	136621
234	Plough Road	Unclassified	532223	143091
239	Saint Hill Road	Unclassified	537958	136550
240	A1160 Queensway	A Road	588624	185447
248	B1019 Hatfield Road	B Road	583375	209166
250	A13 Queensway	A Road	588373	185992
251	B1051	B Road	560753	229937
253	A1159 Eastern Avenue	A Road	587885	187331
257	A414 Spital Road	A Road	583418	205456
259	B1010 Chelmsford Road	B Road	583633	202517
260	B1053 Braintree Road	B Road	571649	230519
261	A129 Rayleigh Road	A Road	564018	194816
262	Wall Hill Road	Unclassified	542047	136152
263	Lower Road	Unclassified	569898	172673
265	B1057	B Road	568459	232619
266	A130 Colchester Road	A Road	573682	208878
267	Round Coppice Road	Unclassified	552459	221932

Site ID	Site Description	Road Class	Easting	Northing
268	B1256 Dunmow Road	B Road	551734	221478
270	B1015 East Street	B Road	587993	186911
275	Wood Lane	Unclassified	557737	171997
276	Henley Street	Unclassified	566512	167160
277	A13	A Road	553493	180617
280	Shorne Ifield Road	Unclassified	567950	170952
283	Crismill Lane	Unclassified	581573	155519
288	A249 Detling Hill	A Road	579584	158460
295	B186 North Road	B Road	559595	183617
296	Luddesdown Road	Unclassified	567164	166569
300	A26 Tonbridge Road	A Road	569865	153375
301	A229	A Road	574775	161609
303	A296 Roman Road	A Road	559077	172883
305	Southfleet Road	Unclassified	561139	173295
306	A228	A Road	570461	162771
309	Heath Lane	Unclassified	552405	172729
310	A2018 Shepherds Lane	A Road	551960	173315
311	Stifford Clays Road	Unclassified	561807	181086
313	A26 High Street	A Road	563098	149695
314	A264 Ashurst Road	A Road	553587	138971
316	A26 London Road	A Road	558000	142446
318	A20 London Road	A Road	573101	157709
323	A226 Rochester Road	A Road	568195	172404
324	B186 Pilgrims Lane	B Road	559466	179784
325	Lakeside Two way drive	Unclassified	558810	178298
328	A206 Thames Road	A Road	552998	175327
331	A2000 Crayford High Street	A Road	551368	174889
332	The Street	Unclassified	567146	168422
334	Oakfield Lane	Unclassified	553317	172603
335	B258 Church Hill	B Road	553828	172367
337	Parsonage Lane	Unclassified	555534	170944
338	A1013 Stanford Road	A Road	566541	181642
339	Maiden Lane	Unclassified	552364	175059
340	A20 Hythe Road	A Road	605938	140054
341	B2163 Penfold Hill	B Road	583018	154165
342	A252 Charing Hill	A Road	596256	150079
349	A260 Canterbury Road	A Road	621822	145001

Site ID	Site Description	Road Class	Easting	Northing
353	A274 Maidstone Road	A Road	581072	150513
354	B2017 Five Oak Green Road	B Road	560613	145362
359	A1090 Stoneness Road	A Road	558934	177308
361	A207 London Road	A Road	551260	174767
362	A258 Sandwich Road	A Road	635270	152770
363	Dennis Road	Unclassified	558350	184000
364	B2068 Stone Street	B Road	613503	145850
366	A259 Dymchurch Road	A Road	610010	129088
367	A128 Brentwood Road	A Road	565401	181726
369	Romford Road	Unclassified	556371	182783
374	A227 Wrotham Road	A Road	564131	171387
375	Water Lane	Unclassified	580695	155868
376	A1306 New Road	A Road	554362	181438
379	Valley Drive	Unclassified	566103	170460
381	B262 Hall Road	B Road	562215	172412
385	London Road West Thurrock	Unclassified	558945	177737
391	Greensward Lane	Unclassified	584170	192608
392	A28 Canterbury	A Road	608542	154412
393	Latchingdon Road	Unclassified	585318	200330
394	Hever Court Road	Unclassified	565674	170616
395	Bardfield Road	Unclassified	562864	230952
396	Peartree Lane	Unclassified	570103	170551
397	Hermitage Lane	B Road	572841	156990
401	Lakeside Access	Unclassified	558720	178585
402	Heron Way	Unclassified	558698	178488
403	Lakeside Access	Unclassified	558818	178983
404	Lakeside Access	Unclassified	558812	178912
405	A1306	A Road	557688	179033
406	A13	A Road	558361	179956
407	A127	A Road	559186	188658

Table B.2 CLC sites surveyed

Site ID	Site Description	Road Class	Easting	Northing
12	Crockenhill Lane	Unclassified	553314	166195
17	Theydon Road	Unclassified	544871	200345
18	Warley Road	Unclassified	557298	190347
26	Clement Street	Unclassified	554531	170653

Site ID	Site Description	Road Class	Easting	Northing
55	A1 Barnet Bypass	A Road	522025	198884
100	A308	A Road	503212	171544
117	Harbet Road	Unclassified	536212	191826
139	A13 Newham Way	A Road	543525	182508
169	B1012 Lower Burnham Road	B Road	583797	198651
172	B184 The Street	B Road	560348	217341
175	Woodhill Road	Unclassified	574895	204846
182	B2097 Maidstone Road	B Road	573940	165046
186	Hambro Hill	Unclassified	581118	192000
190	Dell Lane	Unclassified	549039	217562
193	A128 Ongar Road	A Road	556828	196841
194	Marine Parade	Unclassified	589031	185035
200	Widford Road	Unclassified	569582	205144
212	Bigods Lane	Unclassified	562728	224477
214	M11	Motorway	552480	229473
215	B2082 Wittersham Road	B Road	591596	125206
223	Butcherfield Lane	Unclassified	545732	137829
225	Outwood Lane	Unclassified	532785	147824
241	B1008 Main Road	B Road	570748	210978
243	B1002 Roman Road	B Road	562573	197263
244	A264 Copthorne Common Road	A Road	533187	139194
251	B1051	B Road	560753	229937
255	Rookery Hill	Unclassified	531616	144683
257	A414 Spital Road	A Road	583418	205456
270	B1015 East Street	B Road	587993	186911
271	M2	Motorway	603168	159407
282	Graveney Road	Unclassified	603069	161060
292	Wilson Lane	Unclassified	557983	169448
296	Luddesdown Road	Unclassified	567164	166569
309	Heath Lane	Unclassified	552405	172729
311	Stifford Clays Road	Unclassified	561807	181086
312	Lower Higham Road	Unclassified	568606	173083
313	A26 High Street	A Road	563098	149695
320	Hollingbourne Hill	Unclassified	585422	156163
341	B2163 Penfold Hill	B Road	583018	154165
350	B2068 Stone Street	B Road	613812	150713
355	A2 London Road	A Road	603104	160125

Site ID	Site Description	Road Class	Easting	Northing
369	Romford Road	Unclassified	556371	182783
379	Valley Drive	Unclassified	566103	170460
388	B186 West Thurrock Way	B Road	558454	178584

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