

The Sizewell C Project

8.5 Transport Assessment Appendices 8A - 9A

Revision: 1.0

Applicable Regulation: Regulation 5(2)(q)

PINS Reference Number: EN010012

May 2020

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

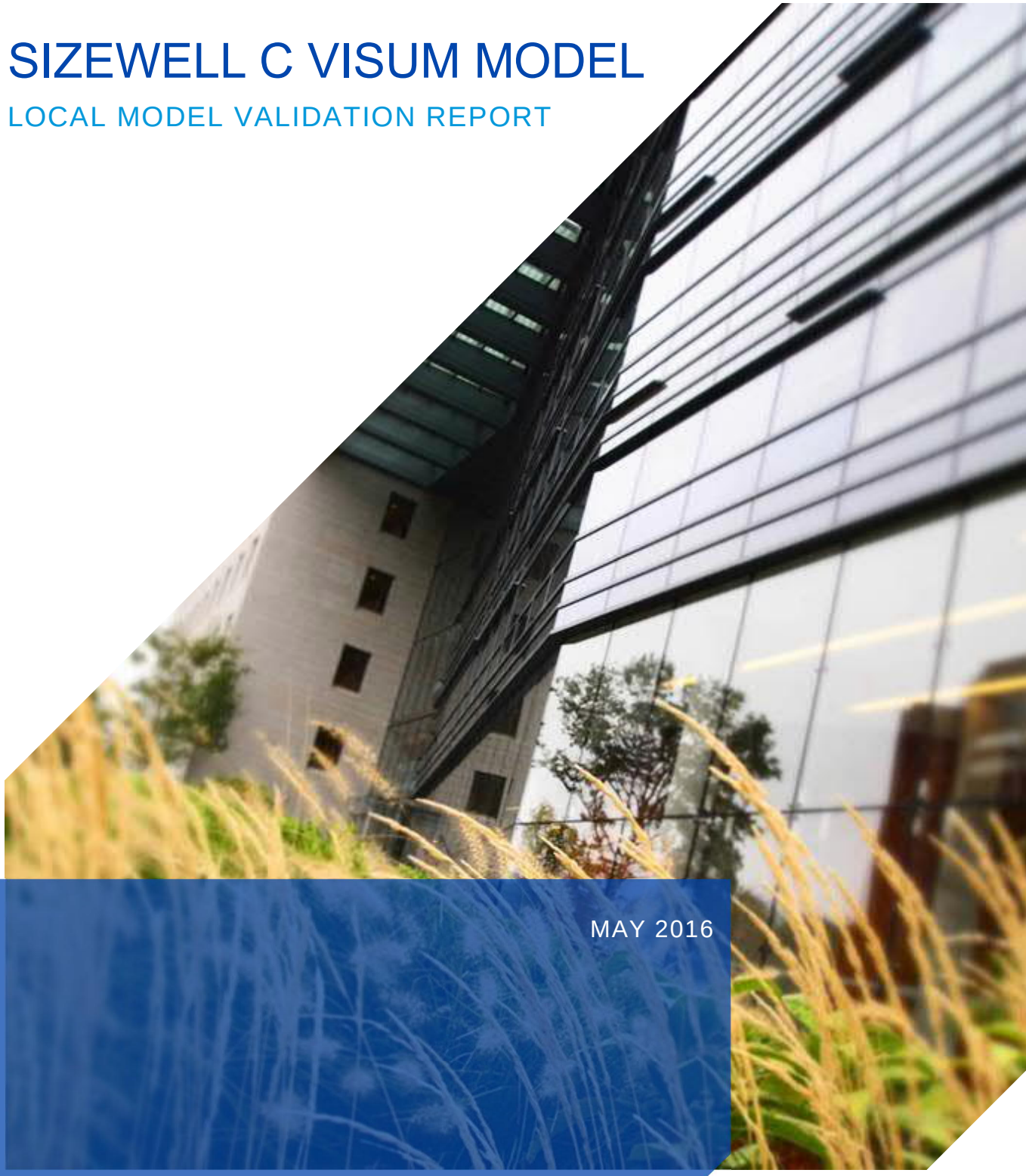
APPENDIX 8A: 2015 VISUM BASE MODEL LOCAL VALIDATION REPORT

Contents

- Local Model Validation Report for the 2015 VISUM base model
- Addendum to the Local Model Validaiton Report
- Technical Note covering a Sensitivity Test using the VISUM Traffic Model
  - Appendix A – Detailed Sensitivity Test Calibration and Validation Statistics

SIZEWELL C VISUM MODEL

LOCAL MODEL VALIDATION REPORT



MAY 2016

WSP | PARSONS BRINCKERHOFF

SIZEWELL C VISUM MODEL

LOCAL MODEL VALIDATION REPORT

EDF Energy

Project no: 50400326
Date: May 2016

WSP | Parsons Brinckerhoff
Mountbatten House
Basing View
Basingstoke
Hampshire
RG21 4HJ

Tel: +44 (0)1256 318000
Fax: +44 (0)1256 318700
www.wspgroup.com
www.pbworld.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1 INTRODUCTION 3

1.1 BACKGROUND 3

1.2 MODEL BASIS 3

1.3 REPORT PURPOSE AND STRUCTURE 4

2 MODEL OVERVIEW 5

2.1 BASE YEAR 5

2.2 TIME PERIODS 5

2.3 USER CLASSES 6

2.4 PASSENGER CAR UNIT FACTORS 6

2.5 MODELLING SOFTWARE VERSION 6

2.6 STUDY AREA 6

3 OVERVIEW OF SURVEY DATA 8

3.1 BACKGROUND 8

3.2 TRAFFIC COUNT DATA 8

3.3 TRAFFIC COUNT DATA CHECKS 11

3.4 JOURNEY TIME DATA 12

4 HIGHWAY ASSIGNMENT MODEL – NETWORK DEVELOPMENT 14

4.1 INTRODUCTION 14

4.2 NETWORK STRUCTURE 14

4.3 ZONES AND CONNECTORS 16

4.4 JUNCTION CODING 20

4.5 GENERAL MODELLING PARAMETERS 20

5 HIGHWAY ASSIGNMENT MODEL – MATRIX DEVELOPMENT 24
5.1 INTRODUCTION 24
5.2 INITIAL MATRIX 24
5.3 MATRIX CALIBRATION 37
6 HIGHWAY ASSIGNMENT MODEL – CALIBRATION 38
6.1 INTRODUCTION 38
6.2 CALIBRATION AND VALIDATION CRITERIA 38
6.3 SURVEY DATA CHECKS 39
6.4 MODEL CALIBRATION PROCESS 39
6.5 MODEL CALIBRATION RESULTS 41
7 HIGHWAY ASSIGNMENT MODEL – VALIDATION 46
7.1 INTRODUCTION 46
7.2 MODEL VALIDATION RESULTS 46
8 SUMMARY 60
APPENDICES 63

Appendix A: Link Classifications and Zones
Appendix B: Suffolk Lorry Route Network
Appendix C: Traffic Survey Locations
Appendix D: Traffic Survey Data Exclusions and Balancing
Appendix E: Calibration and Validation Screenlines
Appendix F: 2015 Model Link Flow Calibration Results
Appendix G: 2015 Model Link Flow Validation Results
Appendix H: 2015 Model Journey Time Validation Results

FIGURES

FIGURE 2.1: MODEL STUDY AREA 7
FIGURE 3.1: TRAFFICMASTER JOURNEY TIME ROUTES 13
FIGURE 4.1: EERHAM CORDON TO SZC MODELLED AREA 17
FIGURE 4.2: ZONING SYSTEM 19
FIGURE 5.1: 2006 RSI 'COMMUTING' AND 'OTHER PURPOSE' TRIP LENGTH DISTRIBUTION 31
FIGURE 5.2: SCHOOL DATA COVERAGE 32
FIGURE 5.3: MARTLESHAM P&R TRIP DISTRIBUTION ZONES 36

FIGURE 7.1: TRIP LENGTH DISTRIBUTION (08:00-09:00) PRIOR AND FINAL MATRICES 53
FIGURE 7.2: TRIP LENGTH DISTRIBUTION (15:00-16:00) PRIOR AND FINAL MATRICES 54
FIGURE 7.3: TRIP LENGTH DISTRIBUTION (17:00-18:00) PRIOR AND FINAL MATRICES 55
FIGURE C.0.1: ATC AND MCC SURVEY LOCATIONS 70
FIGURE C.0.2: SCC ATC LOCATIONS 71
FIGURE C.0.3: TRADS SITES 72
FIGURE C.0.4: JOURNEY TIME VALIDATION ROUTES 73
FIGURE E.0.5: CALIBRATION AND VALIDATION SCREENLINES 77
FIGURE F.0.6: TRAFFIC FLOW CALIBRATION (08:00-09:00) 79
FIGURE F.0.7: TRAFFIC FLOW CALIBRATION (15:00-16:00) 85
FIGURE F.0.8: TRAFFIC FLOW CALIBRATION (17:00-18:00) 91
FIGURE G.0.9: TRAFFIC FLOW VALIDATION (08:00-09:00) 98
FIGURE G.0.10: TRAFFIC FLOW VALIDATION (15:00-16:00) 101
FIGURE G.0.11: TRAFFIC FLOW VALIDATION (17:00-18:00) 104
FIGURE H.0.12: JOURNEY TIME – ROUTE 1 EASTBOUND (08:00-09:00) 108
FIGURE H.0.13: JOURNEY TIME – ROUTE 1 WESTBOUND (08:00-09:00) 108
FIGURE H.0.14: JOURNEY TIME – ROUTE 2 NORTHBOUND (08:00-09:00) 109
FIGURE H.0.15: JOURNEY TIME – ROUTE 2 SOUTHBOUND (08:00-09:00) 109
FIGURE H.0.16: JOURNEY TIME – ROUTE 3 NORTHBOUND (08:00-09:00) 110
FIGURE H.0.17: JOURNEY TIME – ROUTE 3 SOUTHBOUND (08:00-09:00) 110
FIGURE H.0.18: JOURNEY TIME – ROUTE 4 EASTBOUND (08:00-09:00) 111
FIGURE H.0.19: JOURNEY TIME – ROUTE 4 WESTBOUND (08:00-09:00) 111
FIGURE H.0.20: JOURNEY TIME – ROUTE 5 EASTBOUND (08:00-09:00) 112
FIGURE H.0.21: JOURNEY TIME – ROUTE 5 WESTBOUND (08:00-09:00) 112
FIGURE H.0.22: JOURNEY TIME – ROUTE 6 NORTHBOUND (08:00-09:00) 113
FIGURE H.0.23: JOURNEY TIME – ROUTE 6 SOUTHBOUND (08:00-09:00) 113
FIGURE H.0.24: JOURNEY TIME - ROUTE 7 NORTHBOUND (08:00-09:00) 114
FIGURE H.0.25: JOURNEY TIME - ROUTE 7 SOUTHBOUND (08:00-09:00) 114
FIGURE H.0.26: JOURNEY TIME - ROUTE 8 NORTHBOUND (08:00-09:00) 115
FIGURE H.0.27: JOURNEY TIME – ROUTE 8 SOUTHBOUND (08:00-09:00) 115
FIGURE H.0.28: JOURNEY TIME – ROUTE 9 EASTBOUND (08:00-09:00) 116
FIGURE H.0.29: JOURNEY TIME – ROUTE 9 WESTBOUND (08:00-09:00) 116
FIGURE H.0.30: JOURNEY TIME – ROUTE 10 NORTHBOUND (08:00-09:00) 117
FIGURE H.0.31: JOURNEY TIME – ROUTE 10 SOUTHBOUND (08:00-09:00) 117
FIGURE H.0.32: JOURNEY TIME – ROUTE 1 EASTBOUND (15:00-16:00) 118
FIGURE H.0.33: JOURNEY TIME – ROUTE 1 WESTBOUND (15:00-16:00) 118
FIGURE H.0.34: JOURNEY TIME – ROUTE 2 NORTHBOUND (15:00-16:00) 119
FIGURE H.0.35: JOURNEY TIME – ROUTE 2 SOUTHBOUND (15:00-16:00) 119
FIGURE H.0.36: JOURNEY TIME – ROUTE 3 NORTHBOUND (15:00-16:00) 120
FIGURE H.0.37: JOURNEY TIME – ROUTE 3 SOUTHBOUND (15:00-16:00) 120
FIGURE H.0.38: JOURNEY TIME – ROUTE 4 EASTBOUND (15:00-16:00) 121
FIGURE H.0.39: JOURNEY TIME – ROUTE 4 WESTBOUND (15:00-16:00) 121
FIGURE H.0.40: JOURNEY TIME – ROUTE 5 EASTBOUND (15:00-16:00) 122
FIGURE H.0.41: JOURNEY TIME – ROUTE 5 WESTBOUND (15:00-16:00) 122
FIGURE H.0.42: JOURNEY TIME – ROUTE 6 NORTHBOUND (15:00-16:00) 123

FIGURE H.0.43: JOURNEY TIME – ROUTE 6 SOUTHBOUND (15:00-16:00) 123
FIGURE H.0.44: JOURNEY TIME – ROUTE 7 NORTHBOUND (15:00-16:00) 124
FIGURE H.0.45: JOURNEY TIME – ROUTE 7 SOUTHBOUND (15:00-16:00) 124
FIGURE H.0.46: JOURNEY TIME – ROUTE 8 NORTHBOUND (15:00-16:00) 125
FIGURE H.0.47: JOURNEY TIME – ROUTE 8 SOUTHBOUND (15:00-16:00) 125
FIGURE H.0.48: JOURNEY TIME – ROUTE 9 EASTBOUND (15:00-16:00)..... 126
FIGURE H.0.49: JOURNEY TIME – ROUTE 9 WESTBOUND (15:00-16:00)..... 126
FIGURE H.0.50: JOURNEY TIME – ROUTE 10 NORTHBOUND (15:00-16:00) 127
FIGURE H.0.51: JOURNEY TIME – ROUTE 10 SOUTHBOUND (15:00-16:00) 127
FIGURE H.0.52: JOURNEY TIME – ROUTE 1 EASTBOUND (17:00-18:00)..... 128
FIGURE H.0.53: JOURNEY TIME – ROUTE 1 WESTBOUND (17:00-18:00)..... 128
FIGURE H.0.54: JOURNEY TIME – ROUTE 2 NORTHBOUND (17:00-18:00) 129
FIGURE H.0.55: JOURNEY TIME – ROUTE 2 SOUTHBOUND (17:00-18:00) 129
FIGURE H.0.56: JOURNEY TIME – ROUTE 3 NORTHBOUND (17:00-18:00) 130
FIGURE H.0.57: JOURNEY TIME – ROUTE 3 SOUTHBOUND (17:00-18:00) 130
FIGURE H.0.58: JOURNEY TIME – ROUTE 4 EASTBOUND (17:00-18:00)..... 131
FIGURE H.0.59: JOURNEY TIME – ROUTE 4 WESTBOUND (17:00-18:00)..... 131
FIGURE H.0.60: JOURNEY TIME – ROUTE 5 EASTBOUND (17:00-18:00)..... 132
FIGURE H.0.61: JOURNEY TIME – ROUTE 5 WESTBOUND (17:00-18:00)..... 132
FIGURE H.0.62: JOURNEY TIME – ROUTE 6 NORTHBOUND (17:00-18:00) 133
FIGURE H.0.63: JOURNEY TIME – ROUTE 6 SOUTHBOUND (17:00-18:00) 133
FIGURE H.0.64: JOURNEY TIME – ROUTE 7 NORTHBOUND (17:00-18:00) 134
FIGURE H.0.65: JOURNEY TIME – ROUTE 7 SOUTHBOUND (17:00-18:00) 134
FIGURE H.0.66: JOURNEY TIME – ROUTE 8 NORTHBOUND (17:00-18:00) 135
FIGURE H.0.67: JOURNEY TIME – ROUTE 8 SOUTHBOUND (17:00-18:00) 135
FIGURE H.0.68: JOURNEY TIME – ROUTE 9 EASTBOUND (17:00-18:00)..... 136
FIGURE H.0.69: JOURNEY TIME – ROUTE 9 WESTBOUND (17:00-18:00)..... 136
FIGURE H.0.70: JOURNEY TIME – ROUTE 10 NORTHBOUND (17:00-18:00) 137
FIGURE H.0.71: JOURNEY TIME – ROUTE 10 SOUTHBOUND (17:00-18:00) 137

LIST OF TABLES

TABLE 3.1: MAY 2015 OBSERVED ATC LOCATIONS 8
TABLE 3.2: SCC ATC LOCATIONS 10
TABLE 3.3: MAY 2015 OBSERVED MCC LOCATIONS 10
TABLE 3.4: MARCH 2015 TRADS DATA COLLECTION SITES 11
TABLE 3.5: TRADS VEHICLE PROPORTIONS 11
TABLE 4.1: VOLUME-DELAY FUNCTIONS 15
TABLE 4.2: ZONING SYSTEM..... 18
TABLE 4.3: EXTRACT FROM TAG DATABOOK (AUTUMN 2014) TABLE A.1.3.6..... 21
TABLE 4.4: EXTRACTS FROM TAG DATABOOK (AUTUMN 2014) TABLE A.1.3.12 AND TABLE A.1.3.13..... 21
TABLE 4.5: EXTRACTS FROM TAG DATABOOK (AUTUMN 2014) TABLE A.1.3.14 AND TABLE A.1.3.15..... 22

TABLE 4.6: EXTRACTS FROM TAG DATABOOK (AUTUMN 2014) TABLE A.1.3.4 22
TABLE 4.7: VALUE OF DISTANCE (PENCE PER KILOMETRE) 22
TABLE 4.8: 2015 MODELLED GENERALISED COST PARAMETERS 23
TABLE 5.1: DFT OBSERVED CAR TRAFFIC GROWTH IN SUFFOLK (2006-2014) 26
TABLE 5.2: TEMPRO CAR DRIVER GROWTH (2014-2015) 26
TABLE 5.3: TAG FUEL COST AND INCOME ADJUSTMENT FACTORS (2014-2015) 26
TABLE 5.4: OVERALL CAR TRAFFIC GROWTH (2006-2015) 26
TABLE 5.5: DFT OBSERVED LGV/HGV TRAFFIC GROWTH IN SUFFOLK (2006-2014) 27
TABLE 5.6: RTF15 LGV/HGV GROWTH FACTORS (2014-2015) 27
TABLE 5.7: OVERALL LGV/HGV TRAFFIC GROWTH (2006-2015) 27
TABLE 5.8: EERHAM MATRIX TOTALS 27
TABLE 5.9: DFT OBSERVED CAR TRAFFIC GROWTH IN SUFFOLK (2011-2014) 28
TABLE 5.10: TEMPRO 'HOME-BASED WORK' CAR DRIVER GROWTH (2014-2015) 28
TABLE 5.11: TAG FUEL COST AND INCOME ADJUSTMENT FACTORS (2014-2015) 28
TABLE 5.12: OVERALL JTW CAR TRAFFIC GROWTH (2011-2015) 29
TABLE 5.13: PROPORTION OF WORKERS 'NOT AT WORK' 29
TABLE 5.14: 24-HOUR JTW MATRIX TOTALS 30
TABLE 5.15: HOURLY 'COMMUTING' FACTORS AND MATRIX TOTALS 30
TABLE 5.16: TEMPRO 'CAR DRIVER' TRIPS BY PURPOSE (2015) 31
TABLE 5.17: HOURLY 'OTHER PURPOSE' FACTORS AND MATRIX TOTALS 32
TABLE 5.18: SCHOOL PUPIL CALCULATION 33
TABLE 5.19: TRICS SCHOOL TRIP RATES 33
TABLE 5.20: CALCULATION OF PUPIL TRIP PROPORTIONS 34
TABLE 5.21: PUPIL TRIPS 34
TABLE 5.22: EDUCATION MATRIX TOTALS 35
TABLE 5.23: MARTLESHAM PARK & RIDE CAR TRIPS 37
TABLE 5.24: INITIAL HIGHWAY MATRIX TOTALS (VEH/HOUR) 37
TABLE 6.1: TAG MODEL CALIBRATION AND VALIDATION CRITERIA 38
TABLE 6.2: FINAL HIGHWAY MATRIX TOTALS (VEH/HOUR) 41
TABLE 6.3: TAG CONVERGENCE CRITERIA 41
TABLE 6.4: CONVERGENCE RESULTS (08:00-09:00) 42
TABLE 6.5: CONVERGENCE RESULTS (15:00-16:00) 42
TABLE 6.6: CONVERGENCE RESULTS (17:00-18:00) 42
TABLE 6.7: TRAFFIC FLOW CALIBRATION SUMMARY (08:00-09:00) 43
TABLE 6.8: TRAFFIC FLOW CALIBRATION SUMMARY (15:00-16:00) 44
TABLE 6.9: TRAFFIC FLOW CALIBRATION SUMMARY (17:00-18:00) 45
TABLE 7.1: TRAFFIC FLOW VALIDATION SUMMARY (08:00-09:00) 47
TABLE 7.2: TRAFFIC FLOW VALIDATION SUMMARY (15:00-16:00) 48
TABLE 7.3: TRAFFIC FLOW VALIDATION SUMMARY (17:00-18:00) 49
TABLE 7.4: JOURNEY TIME VALIDATION SUMMARY (08:00-09:00) 50
TABLE 7.5: JOURNEY TIME VALIDATION SUMMARY (15:00-16:00) 50

TABLE 7.6: JOURNEY TIME VALIDATION SUMMARY (17:00-18:00) 51
TABLE 7.7: CHANGE IN TRIP LENGTH DISTRIBUTION (08:00-09:00) 56
TABLE 7.8: CHANGE IN TRIP LENGTH DISTRIBUTION (15:00-16:00) 56
TABLE 7.9: CHANGE IN TRIP LENGTH DISTRIBUTION (17:00-18:00) 56
TABLE 7.10: PRIOR AND FINAL MATRIX COMPARISON (08:00-09:00) 57
TABLE 7.11: PRIOR AND FINAL MATRIX COMPARISON (15:00-16:00) 58
TABLE 7.12: PRIOR AND FINAL MATRIX COMPARISON (17:00-18:00) 59
TABLE 8.1: SUMMARY OF 08:00-09:00 MODEL CALIBRATION AND VALIDATION 61
TABLE 8.2. SUMMARY OF 15:00-16:00 MODEL CALIBRATION AND VALIDATION 61
TABLE 8.3. SUMMARY OF 17:00-18:00 MODEL CALIBRATION AND VALIDATION 62
TABLE A.1: LINK CLASSIFICATIONS 65
TABLE A.2: SZC 2015 MODEL ZONES 66
TABLE D.1: ATC SITES EXCLUDED FROM CALIBRATION/VALIDATION 75
TABLE D.2: ATC COUNTS BALANCED 75
TABLE F.1: TRAFFIC FLOW CALIBRATION – SCREENLINES (08:00-09:00) 80
TABLE F.2: TRAFFIC FLOW CALIBRATION – ALL COUNTS (08:00-09:00) 82
TABLE F.3: TRAFFIC FLOW CALIBRATION – SCREENLINES (15:00-16:00) 86
TABLE F.4: TRAFFIC FLOW CALIBRATION – ALL COUNTS (15:00-16:00) 88
TABLE F.5: TRAFFIC FLOW CALIBRATION – SCREENLINES (17:00-18:00) 92
TABLE F.6: TRAFFIC FLOW CALIBRATION – ALL COUNTS (17:00-18:00) 94
TABLE G.1: TRAFFIC FLOW VALIDATION – SCREENLINES (08:00-09:00) 99
TABLE G.2: TRAFFIC FLOW VALIDATION – ALL COUNTS (08:00-09:00) 100
TABLE G.3: TRAFFIC FLOW VALIDATION – SCREENLINES (15:00-16:00) 102
TABLE G.4: TRAFFIC FLOW VALIDATION – ALL COUNTS (15:00-16:00) 103
TABLE G.5: TRAFFIC FLOW VALIDATION – SCREENLINES (17:00-18:00) 105
TABLE G.6: TRAFFIC FLOW VALIDATION – ALL COUNTS (17:00-18:00) 106

EXECUTIVE SUMMARY

WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

Highway models were initially developed for several time periods in a 2012 base year, however the traffic matrices were developed using 2001 Census Journey-To-Work (JTW) data in the absence of the 2011 data. Since the 2011 Census JTW data was released in late 2014, and additional traffic surveys were commissioned in May 2015 to provide up-to-date traffic count data in the modelled area, WSP | Parsons Brinckerhoff has been instructed to update the 2012 base year to a 2015 base year using the latest available source data to produce the initial traffic matrices.

It is necessary to create a robust transport model that realistically represents traffic routeing and conditions on the highway network, so that valid future forecasts can be produced to assess the potential impacts of the proposed Sizewell C site and inform the development of any necessary mitigation measures.

The models will be used in discussion with the highway authorities to identify the location where mitigation schemes may be required to address adverse impacts of development traffic and demonstrate the efficacy of those schemes. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis

In the development of the base year transport models, which have been developed in the VISUM 15.00-03 software version, the Department for Transport (DfT)'s Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 base year models have been calibrated and validated, using observed traffic data collected across the study area between March and June 2015, in accordance with guidance set out in TAG Unit M3.1 Highway Assignment Modelling.

This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for the following initial three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

An addendum to this report will subsequently be produced detailing the calibration and validation of the remaining four time periods as follows, in due course:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

These modelled time periods were selected because they reflect a combination of the highest levels of existing highway traffic and the highest levels of development construction traffic.

The 2015 base model is separated into two areas, 'External' and 'Internal'. The East of England Regional Highway Assignment Model (EERHAM), maintained by AECOM on behalf of Highways England, was cordoned around the SZC model area to produce initial trip matrices for movements to and from the 'External' SZC zones. For trips within the 'Internal' model area, initial matrices were

produced for the ‘Car’ vehicle class using a range of sources including 2011 Census JTW data and EduBase education data.

During model calibration it became apparent that some manual changes to the ‘Initial’ matrices were needed, to produce ‘Prior’ matrices which were assigned to the highway network prior to undertaking matrix estimation. Adjustments to the Initial traffic demand matrices were therefore made as follows:

- HGV ‘I-I’ matrix doubled (external movements unchanged)
- Car ‘I-I’ matrix factored down by 5% (external movements unchanged)

Matrix estimation was then applied to refine the traffic matrices in order to achieve a better fit with observed traffic count data. During matrix estimation, some origin-destination (OD) pairs were ‘frozen’ so that these particular trips would not be changed:

- Zone 1001 which represents Martlesham Park & Ride (matrix volumes based on ATC)
- ‘External-External’ trips (derived from EERHAM matrices)

The assignment of the Final (matrix-estimated) traffic matrices demonstrate a good level of fit with observed data, as reported in chapter 6 and chapter 7, and summarised in chapter 8.

These models will serve as a suitable platform for the forecasting of future traffic conditions and the robust appraisal of the potential impacts of the proposed Sizewell C site on the surrounding highway network during the project’s construction phase, and will help to inform the development of any necessary mitigation measures. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis.

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

1.1.2 Highway models were initially developed for several time periods in a 2012 base year, calibrated and validated using observed traffic data collected across the study area in October 2012 and May 2011 (growthed to 2012 levels).

1.1.3 Subsequent to the 2012 model development, the 2011 Census JTW data was released in late 2014, and in combination with additional traffic surveys commissioned in May 2015 to provide up-to-date traffic count data in the modelled area, WSP | Parsons Brinckerhoff has been instructed to update the 2012 base year to a 2015 base year. Thus, the models are now using the latest available source data to produce the initial traffic matrices.

1.1.4 In the development of the base year transport models Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 base year models have been calibrated and validated using observed traffic data collected across the study area between March and June 2015 based on the criteria set out in TAG Unit M3.1.

1.1.5 The models will be used to assess the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase to identify the location where mitigation schemes may be required to address adverse impacts of development traffic and demonstrate the efficacy of those schemes. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis.

1.2 MODEL BASIS

1.2.1 The essence of a relevant and robust model can be founded upon three elements:

- Platform – the software chosen
- Data collection – the old adage of 'rubbish in – rubbish out' is never more important than in developing traffic and transport models to meet DfT TAG standards
- Application – summed up as sound methods and well trained experienced practitioners

1.2.2 The VISUM software platform has been used to develop a strategic highway assignment model of the Suffolk and south Norfolk area, which could demonstrate the impacts of construction period traffic for a number of alternative scenarios. VISUM provides:

- Ease of use and understanding of the inputs and outputs
- DfT TAG compliance in terms of structure and convergence
- Advanced highway and public transport assignment procedures
- Detailed delay and capacity calculation for turns in highway assignment
- Outputs that can readily be used in Transport Assessment evidence
- Excellent tabular and graphical visualisation of the results
- A tool for multimodal analysis i.e. vehicle origin and destination matrices split between light vehicles and heavy goods vehicles

- A direct means of easily developing a VISSIM micro-simulation model from the wider area VISUM highway model if required which would allow more detailed junction modelling
- Acceptability by local authorities, DfT, Highways England and developers of model inputs and outputs

1.2.3 A spreadsheet gravity model has been developed alongside the highway assignment VISUM model. The gravity model will use skimmed travel-time matrices from the 2015 base year VISUM model to inform the distribution of development trips.

1.2.4 This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for the following initial three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

1.2.5 An addendum to this report will subsequently be produced detailing the calibration and validation of the remaining four time periods as follows, in due course:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

1.2.6 These models will serve as a suitable platform for the forecasting of future traffic conditions and the robust appraisal of the potential impacts of the proposed Sizewell C site on the surrounding highway network, and will help to inform the development of any necessary mitigation measures.

1.3 REPORT PURPOSE AND STRUCTURE

1.3.1 This document details the development, calibration and validation of the 2015 base year models and traffic demand matrices.

1.3.2 The structure of this Local Model Validation Report (LMVR) is as follows:

- Chapter 2 provides an overview of the Sizewell C VISUM Model
- Chapter 3 provides an overview of the survey data available
- Chapter 4 describes the development of the 2015 Base Year highway network
- Chapter 5 describes the development of the 2015 Base Year highway traffic matrices
- Chapter 6 illustrates the calibration of the transport model
- Chapter 7 illustrates the validation of the transport model
- Chapter 8 concludes the report

2 MODEL OVERVIEW

2.1 BASE YEAR

2.1.1 The base year of the Sizewell C VISUM model is 2015.

2.2 TIME PERIODS

2.2.1 The time periods that have been agreed with Suffolk County Council (SCC) to allow for the assessment of the proposed core impacts of the Sizewell C development are:

- AM peak periods:
  - 06:00 – 07:00
  - 07:00 – 08:00
  - 08:00 – 09:00
- PM peak periods:
  - 15:00 – 16:00
  - 16:00 – 17:00
  - 17:00 – 18:00
  - 18:00 – 19:00

2.2.2 These modelled time periods were selected because they reflect a combination of the highest levels of existing highway traffic and the highest levels of development construction traffic. A separate technical note has been produced[1] which details the assumptions and calculations used to derive the above peak hours, which are:

- Automatic Traffic Count (ATC) data collected in May 2015, and HATRIS TRADS data for the period October 2012 (factored to 2015 levels) were used to highlight peak periods of existing traffic
- Review of this information showed that Monday-Thursday present fairly consistent flows in the morning and these are generally slightly higher than Friday, whilst in the afternoon Friday is consistently the busiest weekday afternoon
- Existing flows were shown to be highest during 07:00-10:00 hours and 15:00-18:00 hours.
- Forecast assessment of the Sizewell C development will focus on the ‘peak construction workforce’ scenario which assumes a level of 5,600 workers
- Anticipated shift patterns of construction workers were used to calculate the profile of ‘person trips’ made across an average weekday, with initial estimates of ‘home-based’ (36%) and ‘non home-based’ (64%) workers
- The initial assessment of construction worker movements indicated that these would peak between 06:00-08:00 hours and 18:00-19:00 hours. There are likely to be a minimal number of worker trips between 09:00-10:00 hours therefore there is no merit in modelling this hour.
- Taking both existing flows and development flows into consideration, it was agreed with SCC that the 06:00-09:00 and 15:00-19:00 periods would be modelled.

[1] Sizewell C 2015_Modelled Time Periods_170915

2.3 USER CLASSES

2.3.1 The model includes three user classes or 'Private Transport Systems' as follows:

- Cars
- Light Goods Vehicles (LGV)
- Heavy Goods Vehicles (HGV)

2.3.2 Bus routes are modelled separately to the above user classes and are on fixed routes.

2.4 PASSENGER CAR UNIT FACTORS

2.4.1 Private Transport Systems are assigned to the VISUM network in vehicles. However it is important to enter conversion factors from vehicles to Passenger Car Units (PCU) so that the speed-flow curves ('Volume-Delay Functions' in VISUM) and link capacities can be applied correctly during the assignment.

2.4.2 Standard factors to convert each vehicle type into Passenger Car Units (PCU) are provided in TAG Unit A5.4 – Marginal External Costs, Table A7. These are:

- Cars: 1.0
- LGV: 1.0
- OGV1: 1.9
- OGV2: 2.9

2.4.3 For the purposes of assigning 'HGV' demand as a combination of OGV1 and OGV2, an aggregated PCU value of 2.3 was applied within the VISUM model settings. This was derived as a weighted average based on observed data collected across the study area.

2.4.4 Although buses are not assigned to the highway network in the same way as Private Transport (PrT) systems, a PCU factor of 2.0 has been used where the vehicular values associated with bus services are calculated. Bus flows are taken into consideration within the assignment of private transport.

2.5 MODELLING SOFTWARE VERSION

2.5.1 The VISUM suite of programs version 15.00-03 was used to develop, calibrate and validate the 2015 base models.

2.6 STUDY AREA

2.6.1 The adopted study area for the Sizewell C model is shown in Figure 2.1. The area is bounded by Norwich to the north and Ipswich to the south. The study area has been chosen to build a traffic model that covers a sufficient area to model the reassignment and redistribution effects that are likely to be produced by the new development in Sizewell.

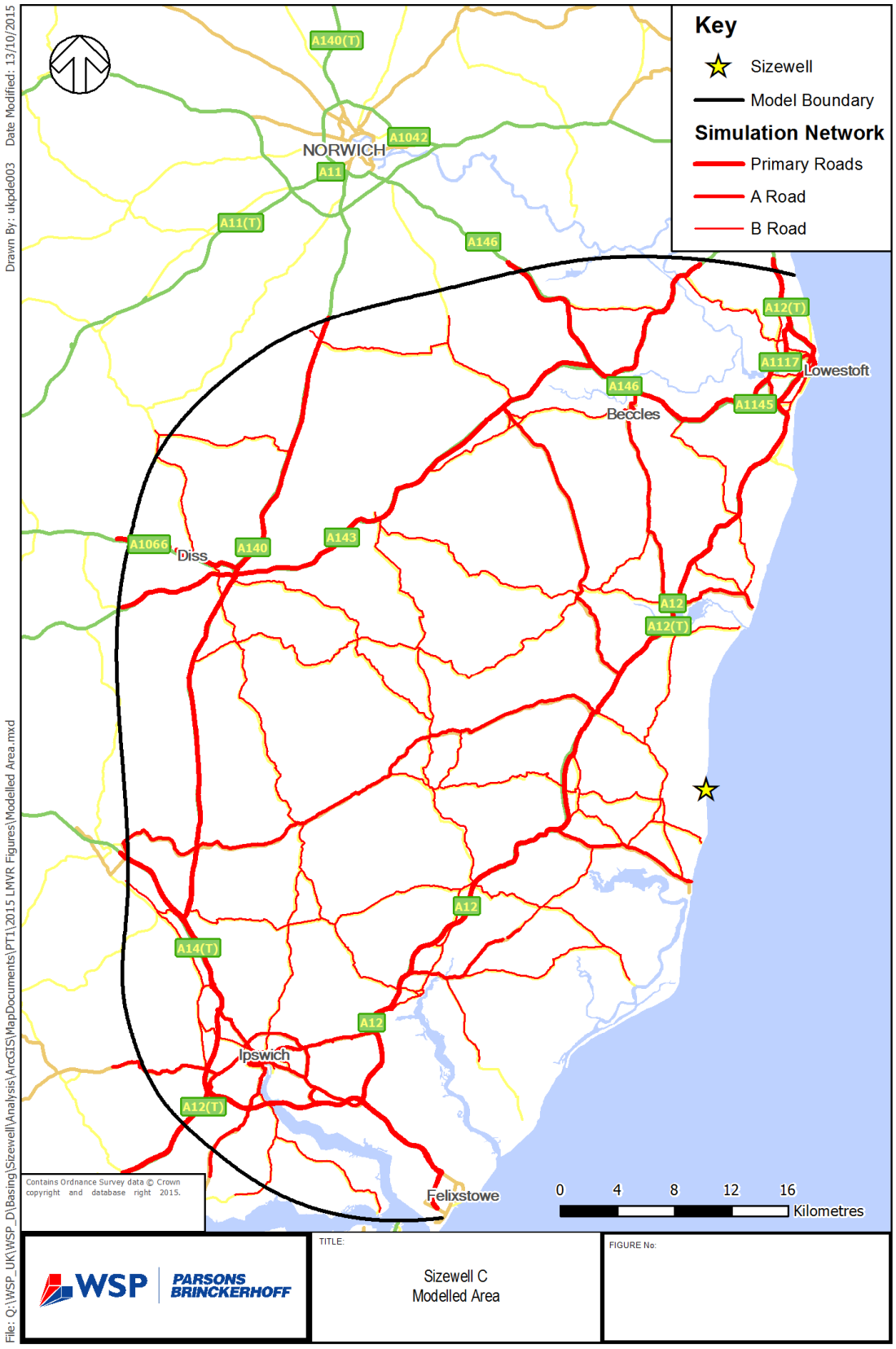


Figure 2.1: Model Study Area

3 OVERVIEW OF SURVEY DATA

3.1 BACKGROUND

3.1.1 To produce a robust model a data collection exercise was undertaken in accordance with DfT TAG guidance. Traffic data was collected in May 2015 including:

- Automatic Traffic Counts (ATC) at 96 sites
- Manual Classified Turning Counts (MCTC) at 14 sites

3.1.2 To supplement this data, additional information was obtained from the following sources:

- Suffolk County Council (SCC) permanent and seasonal ATC counts at six sites
- Highways England 'TRADS' link counts (on A12 and A14)
- DfT 'Trafficmaster' journey time measurements on ten routes
- Bus timetables and routes across the study area which were obtained from the SCC website

3.2 TRAFFIC COUNT DATA

3.2.1 The locations of ATC, MCC and TRADS survey sites are presented graphically in Appendix C. ATC information was collected at sites on strategic and local links and are listed in Table 3.1. The six SCC sites are listed in Table 3.2, along with the periods covered.

Table 3.1: May 2015 Observed ATC Locations

Site	Location	Dir
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB
		SB
2	B1122 south of Onner's Lane (Theberton)	NB
		SB
3	King Georges Avenue	EB
		WB
4	Lovers Lane	NB
		SB
7	B1069 Snape Road (south-west of Knodishall)	NB
		SB
8	B1122 Leiston Road (south-east of Aldringham)	NB
		SB
9	B1125 South of Westleton	NB
		SB
10	A1120 West of Peasenhall	EB
		WB
12	A12 West of Marlesford	EB
		WB
13	A12 East of Farnham	EB
		WB
14	B1078 West of Wickham Market	EB
		WB
16	A145 North of Blythburgh and B1123	NB
		SB
17	A12 North of Blythburgh and A1095	NB
		SB
81	A1152 between Woodbridge and Tunstall	EB

Site	Location	Dir
		WB
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB
		SB
82-2	A1152 Wood Lane, East of the A12 Rbt	EB
		WB
82-3	A12 Southbound, S of the A1152 Rbt	SB
82-4	A12 Northbound, S of the A1152 Rbt	NB
83 *	A140 near Stoke Ash	NB
		SB
84	A143 North of Beccles to Diss	EB
		WB
85	B1069 between Tunstall and Snape	EB
		WB
87	B1116 between Dennington and Framlington	EB
		WB
90	B1121 South West of Saxmundham	NB
		SB
91	B1125 between Blythburgh and Middleton	NB
		SB
101-1 *	Road to Bucklesham, north of A14	NB
		SB
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB
		SB
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB
102-1	Road to Foxhall, W of the A12 Rbt	EB
		WB
102-2	A12 Southbound, N of the Foxhall Rbt	SB
102-3	A12 Northbound, N of the Foxhall Rbt	NB
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB
		WB
103-1	Road to Martlesham	EB
		WB
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB
		WB
103-5	A12 Northbound, S of the Martlesham Rbt	NB
103-6	A12 Southbound, S of the Martlesham Rbt	SB
103-7	Exit from the Park & Ride Car Park	EB
103-8	Entrance to the Park & Ride Car Park	WB
104-1 *	New Road, east of A12	EB
		WB
104-2 **	A12, south of New Road	NB
		SB
104-3 **	A12, north of Woodbridge Road	NB
		SB
104-4 *	Woodbridge Road, west of A12	NB
		SB
105-1	B1122, just South of the A12 (Road to Leiston)	EB
		WB
105-2	A12, just East of the B1122 at Yoxford	NB
		SB
201 *	Road to Sweffling & Benhall	NB
		SB
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB

Site	Location	Dir
		SB
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB
		WB
202-3	A12, just South of A1120 in Yoxford	NB
		SB
203 *	Old High Road, Yoxford	NB
		SB
204	B119 Rendham Road, E of the A12 in Saxmundham	EB
		WB
300-1	A12 Southbound Off-Slip	SB
300-2	A12 Southbound On-Slip	SB
300-3	A12 Northbound Off-Slip	NB
300-4	A12 Northbound On-Slip	NB

** These counts are excluded from the analysis due to lack of data or road not modelled, details are provide in Appendix D*
*** These counts are excluded from the analysis as alternative ATC counts were used*

Table 3.2: SCC ATC Locations

Site	Location	Period	Dir
A3489	B1118 Queen Street, Stradbroke	March 2015	NB
			SB
A3527	B1117 Cookley Road, Horham	June 2015	NB
			SB
M017	A144 Ilketshall	April 2015	NB
			SB
M055	B1077 Swilland	April 2015	NB
			SB
Y151	A1214 London Road, Ipswich	May 2015	NB
			SB
Y189	A1214 Valley Road, Ipswich	May 2015	EB
			WB

3.2.2 The MCC surveys were undertaken at 14 sites and these are listed in Table 3.3.

Table 3.3: May 2015 Observed MCC Locations

Site	Location
82 **	A12 / Woods Lane
101 *	A14 / A12 Seven Hills Junction
102 **	A12 / Foxhall Road
103 **	A12 / A12 Martlesham Junction
104 **	A12 / New Road / Scotts Lane
105 **	A12 / B1122 Middleton Road, Yoxford
202 **	A1120 / A12 at Yoxford
300 **	A12 / B1078 Wickham Market
301 **	A12 / A1094 Friday Street
302	A1094 / B1069 Snape
303	B1119 / B1122 / B1096 Leiston
304	B1122 High Street / Sizewell Road, Leiston
305 **	A12 / Petrol Filling Station near Darsham
306 **	A12 / A144

** This count used only to adjust vehicle split of ATC 101*
*** These counts are excluded from the analysis as alternative ATC counts were used, details provided in Appendix D*

3.2.3 Data from Highways England's Traffic Flow Data System (TRADS), which is part of the HATRIS database, was obtained for the period March 2015 for a series of sites on the A12 and A14 which are listed in Table 3.4.

Table 3.4: March 2015 TRADS Data Collection Sites

Site	Location	Dir
30013376	A12 - between A1117 and B1375	NB
30013377		SB
30013396	A14 - J56 Through	EB
30013397	A14 - J56 EXIT	EB
30013398	A14 - J57 Through	EB
30013399	A14 - J57 EXIT	EB
30013402	A14 - J57 Through	WB
30013403	A14 - J57 EXIT	WB
30013406	A14 - J55 Through	WB
30013407	A14 - J55 EXIT	WB
30013408	A14 - J55 Through	EB
30013410	A14 - J53 Through	NB
30013411	A14 - J53 EXIT	NB
30013415	A14 - J51 EXIT	NB
30013417	A14 - J51 EXIT	SB
30013418	A14 - between J51 and J50	NB

3.2.4 In TRADS vehicles are categorised by length, rather than type. In order to distinguish separate volumes of Car, LGV and HGV vehicle types, the following TRADS 'length' bins were used:

- Car: 1cm to 520cm
- LGV: 520cm to 660cm
- HGV: greater than 660cm

3.2.5 These categorisations yield vehicular proportions shown in Table 3.5 which are reasonably consistent with other count sources.

Table 3.5: TRADS vehicle proportions

Modelled Hour	Car	LGV	HGV	Total
8-9am	80%	6%	14%	100%
3-4pm	73%	7%	20%	100%
5-6pm	84%	4%	11%	100%

3.3 TRAFFIC COUNT DATA CHECKS

3.3.1 The ATC data provided by the survey company, listed in Table 3.1, included a summary of issues whereby counts were not obtained for particular periods. Further examination of the ATC survey data also revealed counts which were considered to be reporting unrealistic flow levels. These sites were excluded from the analysis, a summary of which is provided in Appendix D.

3.3.2 Checks were then carried out for count consistency. Inconsistent counts were identified as being significantly different to adjacent counts, such that it would not be possible for the modelled flow to closely match both observed counts.

3.3.3 Due to the method of collecting both ATC and MCC data at the majority of survey locations, checks were made using MCC data where ATCs were highlighted as being inconsistent, and the ATC

adjusted to provide a more robust observed value. Details of this count balancing process area also contained in Appendix D.

3.4 JOURNEY TIME DATA

3.4.1 The DfT's 'Trafficmaster' journey time database was used to supply observed data from May 2015 for ten routes, which are presented in Figure 3.1.

3.4.2 Statistical variance analysis was carried out on the data to highlight outliers, which were removed from the dataset before average journey times for each modelled period were calculated.

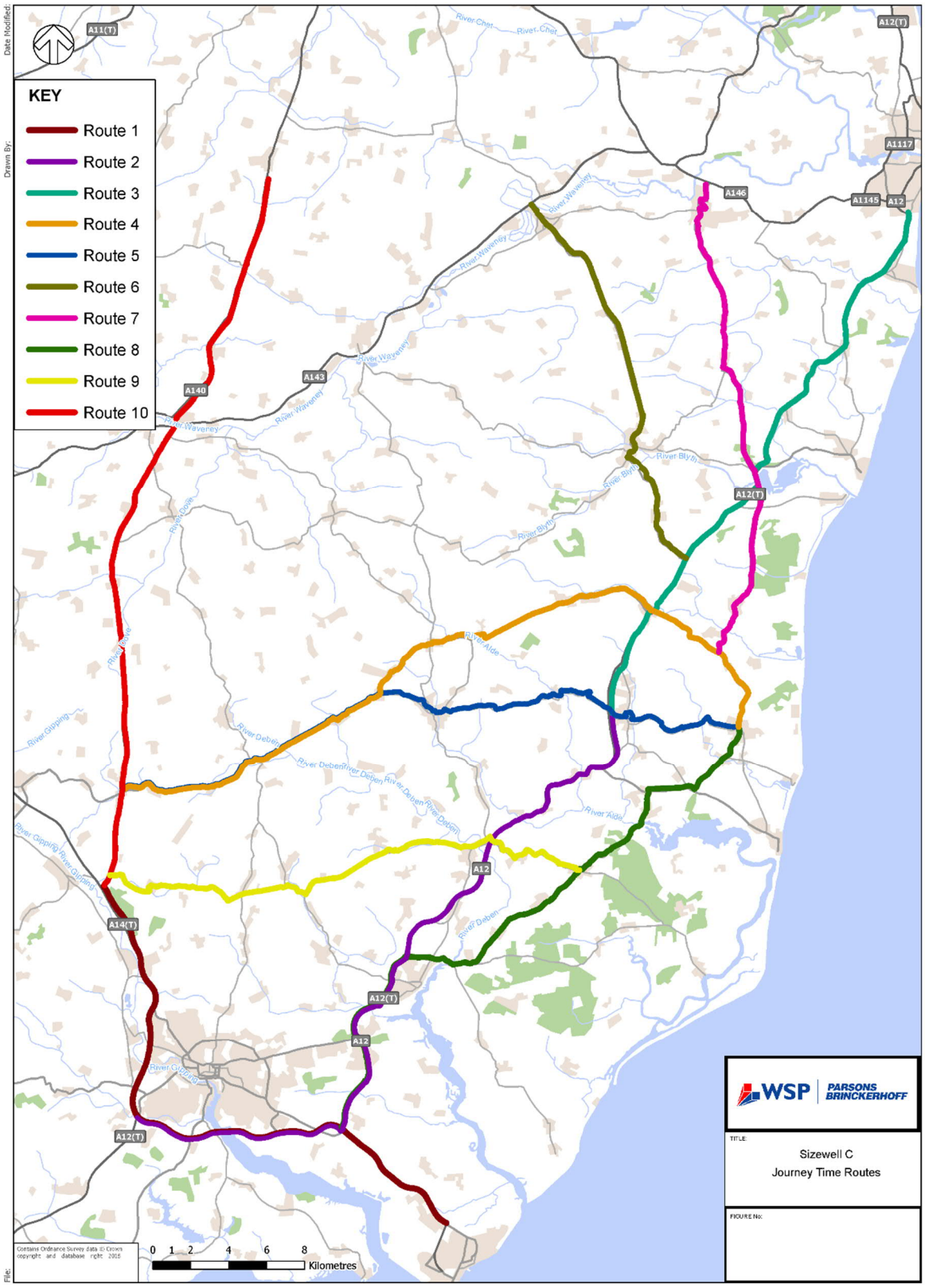


Figure 3.1: Trafficmaster Journey Time Routes

4 HIGHWAY ASSIGNMENT MODEL – NETWORK DEVELOPMENT

4.1 INTRODUCTION

4.1.1 There are two main elements to a highway transport model:

- → Highway network
- → Trip matrix

4.1.2 This chapter describes the development of the highway network, whilst the matrix development is described in chapter 5. In the development of the base year VISUM transport models the DfT's TAG guidance has informed the model development process where relevant.

4.2 NETWORK STRUCTURE

BACKGROUND

4.2.1 A VISUM model was initially developed to represent a 2011 base year for the 15:00-16:00 period. Later the modelling scope was extended to cover seven separate modelled hours which were individually validated to a 2012 base year.

4.2.2 The 2012 base model was reviewed by AECOM on behalf of SCC and a number of issues were raised which are summarised in the document "***Sizewell 'C' - Traffic Model Status Note 15052015.pdf***". WSP | Parsons Brinckerhoff produced a methodology[2] for the development of the 2015 Base models with due consideration of the comments within the AECOM review.

INITIAL NETWORK DEVELOPMENT

4.2.3 The skeleton highway network was developed in a GIS environment using NAVTEQ road vector data, which provides geographically correct highway centre line alignments, road lengths, classification and number of lanes. The basic network was then populated with speed limits and junction configuration using recent satellite mapping.

4.2.4 Link capacities and volume-delay functions (speed-flow curves) were then applied based on 'COst Benefit Analysis' (COBA) software developed by TRL to model the relationship between traffic volumes and vehicle travel times. The volume-delay function (VDF) defined in VISUM is as follows:

$t_{new} = t_0 . (1 + a . sat^b)$

where: $sat = q / (q_{max} . c)$;

t_{new} = the volume-dependent time;

t_0 = the free-flow time;

q = the vehicle flow;

[2] 2015 Base Modelling methodology_updated to reflect AECOM comments_290915

q_{max} = the link capacity;

a, *b* and *c* are user defined parameters.

4.2.5 The parameters a, b and c have been selected to best replicate the COBA speed-flow relationships described in TAG Unit M3.1 which are displayed in Table 4.1.

Table 4.1: Volume-Delay Functions

Link Type	Parameters		
	a	b	c
Primary Road and A-road (Dual)	0.6	3	0.9
A-road (Single)	1	3	1
B-road and SubUrban	1	3	0.9
Unclassified Rural	1	2.5	1
Urban and Town Centre	0.15	3	0.7
Country Lane	0.7	4	0.9

4.2.6 Modelled link classifications including speeds and capacities are provided in Appendix A. The highway network covers all key links within the study area which can be seen in Figure 2.1. Following the initial development of the network described above, checks and refinements were undertaken on the following elements to ensure the 2012 network was accurately represented:

- Link lengths
- Link types, capacities and number of (effective) lanes
- Speed/flow relationships
- One way/two way operation
- Vehicular restrictions
- Provision of bus/cycle lanes
- Traffic calming and its impact on speed/capacity
- Any observed turn delays/penalties
- Location of public transport routes/bus stops
- Access points

2015 MODEL UPDATE

4.2.7 As part of the 2015 model update further review of the highway network was undertaken to ensure the latest configuration of lanes and junctions was reflected in the 2015 Base models. These changes include:

- Widening and signalisation of the A14 Junction 60
- Bus services and timetables have been partially updated manually based on internet timetables, however due to time constraints and the lack of data in electronic 'Google Transit Feed Specification' (GTFS) format which would speed up the process, many routes still reflect the 2012 timetables. Since the bus frequencies are considered to have only minimal impact on congestion or the assignment route choice of private vehicles, and indeed the 'busiest' areas are a considerable distance from the Sizewell C site, 2012 bus service information is considered to be sufficient for the purpose of this modelling exercise

4.2.8 In addition selected network enhancements were made during the calibration process to improve the representation of the highway assignment, which are listed below:

- Incorporation of the Martlesham Park & Ride arm of the A12 / A1214 roundabout
- Incorporation of Foxhall Road between the A12 and A1189
- Incorporation of Main Road / The Street / Top Street between the A12 / A1214 Martlesham Roundabout, and the B1438 Ipswich Road
- Incorporation of Castle Street / Bredfield Road between Woodbridge town centre and the A1152 Woods Lane
- Speed reduced to 20mph within Woodbridge and Bungay town centres to reflect realistic speeds
- Speeds and link types corrected on the following links:
  - A1120 east of Stowmarket
  - A1152 through Rendlesham
  - A140 through Brockford Street
- HGV free-flow speeds amended to 60mph on dual carriageway and 50mph on single carriageway roads, following the new government regulation which came into force in April 2015

4.2.9 The above information has been compiled and collated to represent the Sizewell C road network in May 2015, using references to satellite imagery to include recent changes to the highway infrastructure.

4.2.10 SCC has produced a 'Lorry Route Network', available on their website, which indicates those roads which HGVs are permitted to use. The 2015 base year network includes a number of link closures to HGV, in accordance with this plan which is contained in Appendix B.

4.3 ZONES AND CONNECTORS

BACKGROUND

4.3.1 Private Transport (PrT) demand is loaded onto the network as a trip matrix in the form of Origin-Destination (OD) trips between zones. Each zone connects to the highway network by one or a number of "centroid connectors".

4.3.2 The centroid or zone connectors in the VISUM model have been designed to realistically represent the way in which traffic joins the road network. Although realistic link capacities have been set on the main highway network in order to generate the correct restraints during assignment, the 'spur' links which were created purely to connect the main highway network to the centroid connectors have unlimited capacity in order to allow the full traffic demand to enter the network during assignment.

2015 ZONE STRUCTURE

4.3.3 The 2015 base model is separated into two areas, 'External' and 'Internal'. There are 295 zones in the model, 16 of which (zones 1-16) are 'External'. The full zone list is provided in Appendix A.

4.3.4 The East of England Regional Highway Assignment Model (EERHAM), maintained by AECOM on behalf of Highways England, provides the source of trips to and from the 'External' area of the 2015 Sizewell C model, as explained in section 5.2. The EERHAM model was cordoned to the area represented in the SZC model, as shown in Figure 4.1, yielding a series of 'cut links' which represent roads taking traffic between the 'External' and 'Internal' parts of the network.

4.3.5 The SZC zoning system therefore includes 16 'External' zones which represent each of the EERHAM cordon links, in order to allow the direct correspondence of EERHAM trips on these roads in the 2015 SZC base model. 'Internal' zones were modelled to represent the areas which would most likely connect to a road which does not form part of the EERHAM cordon, which avoids potential double-counting of trips from different data sources as described in section 5.2.

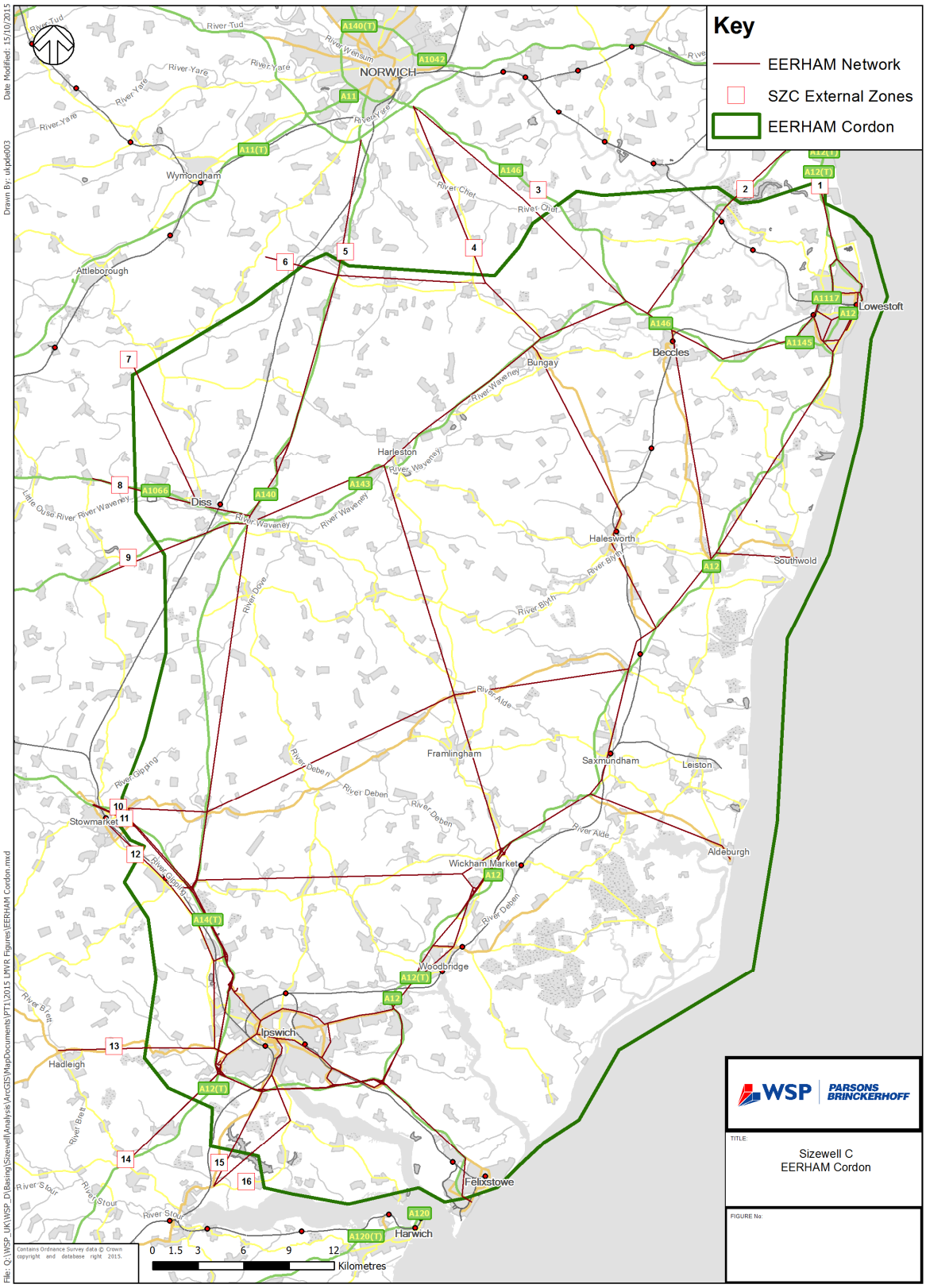


Figure 4.1: EERHAM Cordon to SZC Modelled Area

4.3.6 The 'Internal' zoning system is based on 2001 Census reporting areas, with differing levels of detail depending on the proximity to Sizewell. Several 'bands' of zones within the 'Internal' modelled area were defined as set out in Table 4.2 and displayed graphically in Figure 4.2. As previously stated, the model contains a total of 295 zones, which are listed in Appendix A.

4.3.7 Although the zones are based on 2001 Census reporting area, since the zone shapes were unchanged from the 2012 base model, there is little difference in the 2011 Census reporting areas with area boundaries unchanged apart from a few cases where Census Output Areas were aggregated or disaggregated. Further detail on the use of the Census Output Area information for matrix development is provided in section 5.2

Table 4.2: Zoning System

Zones	Census Level	Description
External		
1-16	Specific site	Zones representing EERHAM cordon links
Internal		
201-387	Ward	Ward-level zones within modelled area but beyond main study area
401-570	Census Output Area	COA-level zones within main study area
601-625	Census Output Area	COA-level zones within Leiston ward (excluding Sizewell)
701 and 801	Disaggregated COA	Sizewell village
1001	Specific site	Martlesham Park & Ride
1201	Specific site	Sizewell C (proposed on-site car park)

4.3.8 The 'External' zones are each connected to one loading point on the VISUM highway network, representing the EERHAM cordon points. The 'Internal' zones are connected onto suitable locations on the main highway network to represent realistic traffic loading points. Centroid connector lengths were calculated from the straight line distance from the centre of the zone to the specific point of contact with the highway network.

4.3.9 During the calibration of the 2015 base models selected enhancements were made to the following Internal zones to improve the assignment:

- 309 (additional connector to the B1118)
- 327 (additional connector to the B1078)
- 348 (additional connector to the B1079)
- 377 (additional connector to the A1189 / The Havens)
- 340 (additional connector to Bredfield Road)
- 345 (additional connectors to Castle Street and Quayside)

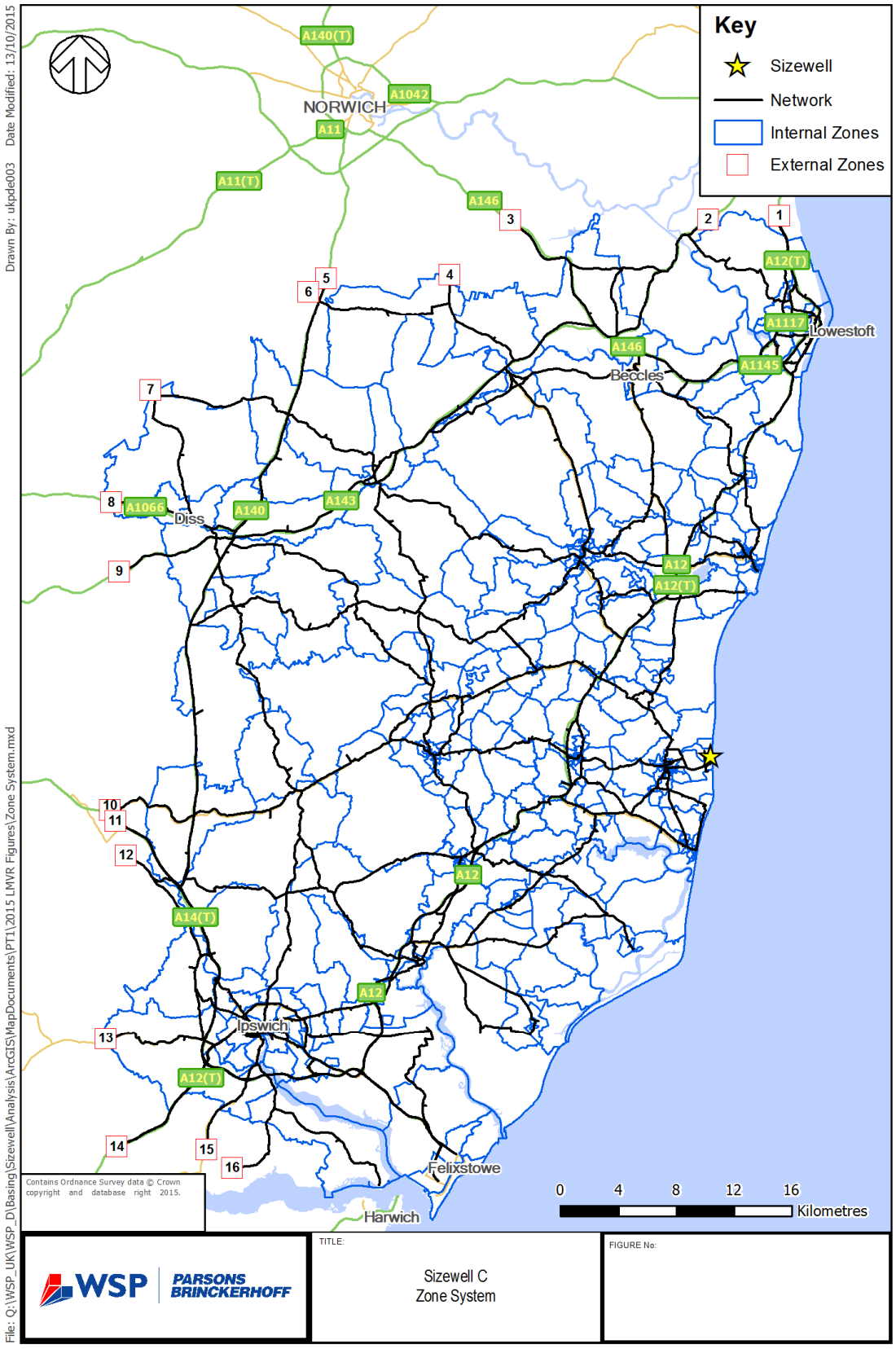


Figure 4.2: Zoning System

4.4 JUNCTION CODING

4.4.1 Every junction represented in the VISUM model has been coded in detail, except where 'spur' links have been created at zone loading points as described above.

4.4.2 Satellite imagery was used to determine junction control type, e.g. priority, signals, roundabout, and configuration, including the number of lanes, additional flares and permitted movements. For controlled nodes, the method of impedance selected during assignment was 'Node Impedance (ICA) calculation'. In this case delays on turns are calculated using the detailed junction geometry rather than simplistic volume-delay functions on turns. VISUM's delay assessment criteria 'Level of Service', which categorises turn delays, provides a useful tool for evaluation of network performance.

4.4.3 Signalised junctions were coded with suitable assumed staging plans, and signal cycles and green times were optimised within the VISUM model during early stages of the model calibration process.

4.4.4 Due to the assignment method used, it is not necessary to enter turn capacities since these are calculated with the 'ICA' assignment (as described in section 4.5).

4.5 GENERAL MODELLING PARAMETERS

ASSIGNMENT METHODS

4.5.1 Traffic demand is assigned separately for the three defined PrT 'systems', Car, LGV and HGV. In order that the route choice of HGV is realistic and for the most part limited to strategic and major roads, the HGV were assigned first onto an unloaded network. LGV were assigned secondly and finally Cars were assigned.

4.5.2 For HGV and LGV, the 'blocking-function' has not been applied since these flows are low and well beneath defined link and turn capacities, so the assignment need not take into account the capacities of links or turns. For the Car assignment, which takes into account the already assigned volumes of LGV and HGV, blocking-back is applied on both link and turn capacities. This means that the assignment of Car demand is more correctly based on the volume-capacity ratios on links and turns and therefore takes into account levels of congestion on the highway network.

4.5.3 The 'Equilibrium-Lohse LUCE' assignment method was used for the assignment of goods vehicle (LGV and HGV) demand. This method models the 'learning process' of road users in the network. Starting with an 'all or nothing assignment', drivers consecutively include information gained during their last 'journey' (on the previous iteration) for their next route search.

4.5.4 The 'Assignment with ICA' assignment method was used for the assignment of Car demand. This method uses the 'Equilibrium-Lohse LUCE' assignment algorithm internally, but the main difference is that the assignment procedure itself calculates capacities on turns, based on junction geometry and flow levels, rather than being manually defined.

4.5.5 Public Transport (PuT) bus services are modelled as fixed routes with timetabled frequencies. Due to the assignment methodology the number of vehicles generated by these PuT services is generally not accounted for during the PrT assignment, in terms of the road space taken up and hence the impact on capacity. In order to overcome this issue, additional procedures have been defined prior to the PrT assignment which calculates the volume of PuT vehicles on each modelled link so that this 'extra demand volume' is taken into account during the subsequent capacity-restrained PrT assignment.

4.5.6 As indicated in section 4.2 the bus services are mostly based on 2012 timetables which is considered to be sufficient for the purposes of this modelling exercise.

COST COEFFICIENTS

4.5.7 Each PrT system has a defined cost-function which is usually a combination of time and distance, and any tolls or charges that may be in place on certain routes. The coefficients specified for each part of the equation determine the overall cost of each available path between an OD pair, thus affecting the balance of trips on each path.

4.5.8 The DfT's TAG Databook (Autumn 2014) provides suitable values of time (VOT) and vehicle operating costs (VOC) to calculate cost function coefficients for different vehicle types. Within the 'Impedance' function in VISUM, the cost coefficients of time and distance must be input in seconds and metres respectively. These respective calculations are multiplied by 100 for input to VISUM, to reduce the damping of decimals.

4.5.9 Table 4.3 displays the extracted information from TAG Table 1.3.6 which provides 'value of time' for each user class and time period, in pence per minute, for a chosen year.

Table 4.3: Extract from TAG Databook (Autumn 2014) Table A.1.3.6

User Class	2015 Value of Time (2010 market price pence/minute)		
	AM (7-10am)	IP (10am-4pm)	PM (4-7pm)
Car – Work	55.42	54.15	53.28
Car – Non Work (Commute)	13.74	13.63	13.44
Car – Non Work (Other)	17.49	18.18	18.72
Average Car	**22.63**	**24.82**	**21.06**
Average LGV	**24.60**	**24.60**	**24.60**
OGV1	**50.58 ***	**50.58 ***	**50.58 ***
OGV2	**50.58 ***	**50.58 ***	**50.58 ***

** This value is double the original value presented in TAG Table A.1.3.6, on the advice provided in TAG unit M3.1 section 2, that the original value is too low as it does not take account of the owners' influence on HGV routeing*

4.5.10 These values of time are converted into 'pence per second x 100' for input to VISUM, as shown in Table 4.8.

4.5.11 Table 4.4 displays the extracted information from TAG Tables 1.3.12 and 1.3.13, which provide fuel VOC parameter values for each user class and time period, for a chosen year. Also shown is the resultant 'cost' calculated using the following formula, with average network free-flow speed of 84.8kph extracted from the VISUM model:

$$\frac{a}{v} + b + c \times v + d \times v^2$$

where v = speed in kph

Table 4.4: Extracts from TAG Databook (Autumn 2014) Table A.1.3.12 and Table A.1.3.13

User Class	Fuel VOC Formula Parameter Values (pence, 2010 prices)				Cost (pence per km)
	a	b	c	d	
Car – Work	71.58514	4.861679	-0.03171	0.000327	5.36829
Car – Non Work	85.90217	5.833581	-0.03805	0.000392	6.44152
LGV – Work	127.7532	3.01825	-0.01965	0.000677	7.72222
LGV – Non Work	153.3038	3.6219	-0.02358	0.000812	9.26667
OGV1	147.4288	26.57438	-0.40236	0.003463	19.08742
OGV2	275.0026	57.38311	-0.82149	0.006183	35.41874

4.5.12 Table 4.5 provides similar information for non-fuel VOC parameter values, extracted from WTAG Tables 1.3.14 and 1.3.15, along with the resultant 'cost' based on the following formula:

$$a + \frac{b}{v}$$

where v = speed in kph

Table 4.5: Extracts from TAG Databook (Autumn 2014) Table A.1.3.14 and Table A.1.3.15

User Class	Non-Fuel VOC Formula Parameter Values (pence, 2010 prices)		Cost (pence per km)
	a	b1	
Car – Work	4.95977	135.946	6.56381
Car – Non Work	3.84160	0	3.84160
LGV – Work	7.213	47.113	7.76889
LGV – Non Work	7.213	0	7.213
OGV1	6.714	263.817	9.82680
OGV2	13.061	508.525	19.06113

4.5.13 The fuel and non-fuel VOC is summed together to provide total VOC for each user class. Table 4.6 provides proportions of travel in work/non-work time for each vehicle type and time period, extracted from TAG Table 1.3.4, which are used to derive the weighted average calculations of VOC in pence per kilometre, shown in Table 4.7.

Table 4.6: Extracts from TAG Databook (Autumn 2014) Table A.1.3.4

Vehicle Type		Percentage of vehicle trips		
		AM (7-10am)	IP (10am-4pm)	PM (4-7pm)
Car	Work	6.8	8.3	5.5
	Non Work	40.6	11.6	32.3
	Other	52.7	80.1	62.2
LGV	Work (freight)	88	88	88
	Non – Work	12	12	12
OGV1	Work	100	100	100
OGV2	Work	100	100	100

Table 4.7: Value of Distance (pence per kilometre)

User Class	2015 Value of Distance (pence per kilometre)		
	AM (7-10am)	IP (10am-4pm)	PM (4-7pm)
Car – Work	11.93	11.93	11.93
Car – Non Work	10.28	10.28	10.28
Average Car	**10.41**	**10.42**	**10.37**
Average LGV	**15.61**	**15.61**	**15.61**
OGV1	**28.91**	**28.91**	**28.91**
OGV2	**54.48**	**54.48**	**54.48**

4.5.14 These values of distance are converted into 'pence per metre x 100' for input to VISUM, as shown in Table 4.8 along with the values of time.

Table 4.8: 2015 Modelled Generalised Cost Parameters

Vehicle Class	AM Peak		Inter Peak		PM Peak	
	Time	Distance	Time	Distance	Time	Distance
Car	37.7136	1.0406	41.3721	1.0420	35.0955	1.0374
LGV	40.9974	1.5610	40.9974	1.5610	40.9974	1.5610
HGV	84.2904	3.9146	84.2904	3.9146	84.2904	3.9146

IMPEDANCE

4.5.15 The calculation of impedance at controlled nodes, i.e. priority, signals or roundabout, is based on VISUM's 'Intersection Capacity Analysis' or 'ICA' calculation which uses the capacity, geometry and gap acceptance settings of the node to calculate average delay on each turning movement. ICA is calculated before and during assignment, so that the delays incurred within each iteration impact on the assignment of the next iteration.

4.5.16 The benefit of this method of impedance calculation is that the delays on each turning movement can be aggregated to produce an average level of delay at the node, which is categorised to provide a 'Level of Service'. This is a very useful statistic for quickly demonstrating in a graphical way where junctions may be operating close to capacity in any given scenario.

CAPACITY RESTRAINTS AND CONVERGENCE

4.5.17 The Sizewell VISUM traffic model operates with a capacity-restrained assignment. In effect, the capacity of the highway network constrains the assignment of trips according to the defined link capacities so that no link may carry an assigned flow higher than its capacity (although demand flows may exceed capacity, the excess flow is recorded as a queue on the link). The demand traffic that is loaded onto the network, through the OD demand matrices, is moved around on different available paths between successive iterations until a balance is achieved where no links are over-capacity, in terms of the assigned flow volumes, and the change in flows and delays between each of the iterations is very small. The resulting stability is known as 'convergence' and is discussed further in Chapter 6.

5 HIGHWAY ASSIGNMENT MODEL – MATRIX DEVELOPMENT

5.1 INTRODUCTION

5.1.1 A broad methodology[3] for development of the 2015 'Initial' traffic matrices was submitted to AECOM for review. Following some amendments the approach has been agreed with AECOM and SCC and the detailed matrix development process, in the form of Excel spreadsheet flow charts, was subsequently provided to AECOM for review.

5.1.2 The process of the Initial matrix development, and subsequent matrix calibration, is described in detail in this chapter.

5.2 INITIAL MATRIX

5.2.1 Initial development of the traffic matrices focussed on the peak hours modelled in the East of England Regional Highway Assignment Model (EERHAM) maintained by AECOM on behalf of Highways England. Cordon matrices from the 2006 EERHAM model were provided for the SZC modelled area. This enabled development of one 'AM peak hour' Initial Matrix (08:00-09:00) and one 'PM Peak Hour' Initial Matrix (17:00-18:00), along with a '15:00-16:00' PM peak hour Initial Matrix based on the Inter-Peak (10:00-16:00 'Average Hour') EERHAM model.

5.2.2 For LGV and HGV trips, the Initial matrices were developed purely from the EERHAM data source. The use of GPS Origin-Destination (OD) data from the DfT was investigated for 'Internal to Internal' ('I-I') trips, however as the number of trips in the resulting matrices was extremely low it was not possible to be confident that the matrix would be suitable for factoring to observed traffic flows. As for the 2012 model development the EERHAM cordon matrices were therefore used to estimate LGV and HGV trips for the whole model area.

5.2.3 For Car trips, the EERHAM cordon matrices provided the basis for all trips with an 'External' trip end, i.e. 'E-E', 'E-I' and 'I-E' trips. Additional data sources were used to provide the Initial 'I-I' trip matrices for 'Commuting', 'Education' and 'Other Purpose' trips. In summary, the following data sources have been utilised:

Underlying trip distribution patterns:

- 2006 East of England Regional Highway Assignment Model (EERHAM)
- 2011[4] Census Journey-to-Work (JTW)
- School pupils data from EduBase (January 2014) database
- School catchment information from Suffolk County Council
- TRICS database for school trip rates
- National Travel Survey (NTS) 2015 statistics for trip rates by purpose
- National Trip End Model (NTEM dataset 6.2) for trip volumes by purpose
- Office of National Statistics (ONS)
- www.GOV.uk/holiday-entitlement-rights

[3] 2015 Base Modelling methodology_updated to reflect AECOM comments_290915
[4] 2011 JTW data has not yet been released

- Suffolk 'Lorry Route Network'

Traffic growth factors (for factoring older data to May 2015 levels):

- DfT actual traffic growth figures from http://www.dft.gov.uk/traffic-counts
- National Trip End Model (NTEM dataset 6.2) traffic growth rates
- DfT TAG (Autumn 2014) fuel cost and income adjustment factors
- 2015 road traffic statistics taken from https://www.gov.uk/government/organisations/department-for-transport/series/road-traffic-statistics

EAST OF ENGLAND REGIONAL MODEL

5.2.4 The EERHAM model covers more than the SZC model area albeit in a coarser level of detail. AECOM provided cordoned traffic matrices extracted from the 2006 EERHAM for the SZC model area, for each of the three vehicle classes Car, LGV and HGV, for the three modelled hours as follows:

- AM peak hour: 08:00-09:00
- PM peak hour: 17:00-18:00
- Average Inter peak hour: used for 15:00-16:00

5.2.5 The EERHAM cordon area is shown in Figure 4.1. The SZC 2015 base model zones are categorised as 'External' or 'Internal' as follows:

- Zones 1 to 16 (External)
- Zones 201 to 1001 (Internal)

5.2.6 The EERHAM cordon crossing points were defined at the 16 external network entry points on the SZC VISUM network. Each SZC 'External' zone is connected to a single EERHAM cordon link, resulting in a simple correlation between external EERHAM and SZC zones. 'Internal' zones were modelled to represent the areas which would most likely connect to a road which does not form part of the EERHAM cordon, which avoids potential double-counting of trips from EERHAM and other data sources.

5.2.7 Since EERHAM model zones are larger than in the SZC model, it was necessary to disaggregate the EERHAM matrices to represent the SZC 'Internal' zone structure. This was achieved by using zone populations taken from the 2011 Census Output Areas (OAs). The 2011 Census OAs were 'intersected' with SZC zones in ArcGIS, to calculate the population within each SZC zone. Where necessary, zone area was used to estimate zone proportions.

5.2.8 The EERHAM base year is 2006 so the disaggregated cordon matrices were growthed to represent 2015 traffic levels. For each vehicle class, actual traffic growth figures across Suffolk were obtained from the DfT for the period 2006-2014, which are aggregated by road type. The average growth rate across all road types, from the total of all DfT observed counts in Suffolk for which 2006 and 2014 counts were available, was firstly calculated for each vehicle class for the period 2006-2014. These are shown in Table 5.1 for Cars and Table 5.5 for LGV and HGV.

5.2.9 Further growth factors from 2014 to 2015 were then needed to complete the conversion of the 2006 EERHAM matrices to 2015 levels.

5.2.10 For Cars, TEMPRO traffic growth factors (supplied by region and time period in NTEM dataset 6.2) were applied along with TAG[5] (Autumn 2014) fuel cost and income adjustment factors. The respective growth rates for Cars are shown in Table 5.1 to Table 5.3.

Table 5.1: DfT Observed Car Traffic Growth in Suffolk (2006-2014)

Vehicle Class	Total Observed Traffic		
	2006	2014	Growth Factor
Cars/Taxis	1,787,504	1,765,349	0.9876

Table 5.2: TEMPRO Car Driver Growth (2014-2015)

TEMPRO Region	Growth Factor					
	Weekday AM (0700 – 0959)		Weekday IP (1000 – 1559)		Weekday PM (1600 – 1859)	
	Origin	Destination	Origin	Destination	Origin	Destination
South Norfolk	1.0113	1.0129	1.0143	1.0144	1.0133	1.0123
Suffolk	1.0112	1.0105	1.013	1.013	1.0112	1.0116
Babergh	1.0077	1.0096	1.0118	1.0117	1.0101	1.0091
Ipswich	1.0165	1.0132	1.0141	1.0143	1.0134	1.0152
Mid Suffolk	1.0106	1.0096	1.0135	1.0135	1.0109	1.0116
Suffolk Coastal	1.0101	1.0103	1.0128	1.0128	1.0111	1.011
Waveney	1.0093	1.0084	1.0115	1.0114	1.0092	1.0099

Table 5.3: TAG Fuel Cost and Income Adjustment Factors (2014-2015)

Adjustment Type	Growth Factor
Income	1.0020
Fuel cost	1.0146
Combined	1.0166

5.2.11 Combining the above factors provides overall growth factors, by region, for 2006 to 2015 as shown in Table 5.4.

Table 5.4: Overall Car Traffic Growth (2006-2015)

TEMPRO Region	Growth Factor					
	Weekday AM (0700 – 0959)		Weekday IP (1000 – 1559)		Weekday PM (1600 – 1859)	
	Origin	Destination	Origin	Destination	Origin	Destination
South Norfolk	1.0154	1.0170	1.0184	1.0185	1.0174	1.0164
Suffolk	1.0153	1.0146	1.0171	1.0171	1.0153	1.0157
Babergh	1.0118	1.0137	1.0159	1.0158	1.0142	1.0132
Ipswich	1.0206	1.0173	1.0182	1.0184	1.0175	1.0193
Mid Suffolk	1.0147	1.0137	1.0176	1.0176	1.0150	1.0157
Suffolk Coastal	1.0142	1.0144	1.0169	1.0169	1.0152	1.0151
Waveney	1.0134	1.0125	1.0156	1.0169	1.0133	1.0140

[5] TAG_data_book_Autumn_2014.xls

5.2.12 Since differing growth factors are supplied for origin and destination trips, for each region, it was necessary to furness the 2006 traffic matrices using the combined factors to achieve the desired 2015 traffic volumes for each zone O-D pair.

5.2.13 For LGVs and HGVs, regional traffic growth factors were derived from RTF15, for the 'Eastern England' region, for 2014 to 2015. The DfT observed traffic growth rates for 2006 to 2014 are shown in Table 5.5 whilst the RTF growth rates for 2014 to 2015 are shown in Table 5.6. The overall combined growth factors for LGV and HGV, for 2006 to 2015, are displayed in Table 5.7.

Table 5.5: DfT Observed LGV/HGV Traffic Growth in Suffolk (2006-2014)

Vehicle Class	Total Observed Traffic		
	2006	2014	Growth Factor
LGVs	286,736	338,639	1.1810
HGVs	244,927	219,438	0.8959

Table 5.6: RTF15 LGV/HGV growth factors (2014-2015)

Vehicle Class	Growth Factor
LGV	1.0156
HGV	1.0034

Table 5.7: Overall LGV/HGV Traffic Growth (2006-2015)

Vehicle Class	Growth Factor
LGV	1.1994
HGV	0.8990

5.2.14 The 2006 EERHAM matrix totals and the resultant 2015 trip matrix totals are shown in Table 5.8.

Table 5.8: EERHAM Matrix Totals

Modelled Hour	2006 EERHAM Trips			2015 EERHAM Trips		
	Car (excl 'I-I')	LGV	HGV	Car (excl 'I-I')	LGV	HGV
08:00-09:00	14,153	2,917	1,950	**14,363**	**3,499**	**1,753**
15:00-16:00	9,418	2,606	1,919	**9,555**	**3,125**	**1,725**
17:00-18:00	14,933	2,209	1,285	**15,154**	**2,650**	**1,155**

5.2.15 This process was applied to provide full Initial matrices for the LGV and HGV vehicle classes. For Cars, the EERHAM matrices provided one element of the Initial matrix, for O-D pairs with an 'external' trip end, i.e. those trips starting or ending in an external zone. Additional data sources were used to provide 'Internal to Internal' trips as described in the following section.

COMMUTING TRIPS

5.2.16 Commuting trips for Car 'Internal to Internal' zone OD pairs were derived from 2011 Census JTW data.

5.2.17 2011 Census JTW data was extracted, for 'Car Driver' mode (equivalent to Car 'vehicle trips'), in the form of 'Output Areas' (OAs) for origins and 'WorkPlace Zones' (WPZs) for destinations. These were 'intersected' with SZC model 'Internal' zones within ArcGIS, based on population and zone area (for OAs) and population weighted centroids for WPZs. This provided a 2011 24-hour JTW Car matrix in the SZC zone structure.

5.2.18 This matrix was firstly 'cleaned' to remove any trips between 'Internal' zones that would not use the modelled highway network, i.e. OD pairs whose intermediate routes are not modelled, such as zones located within the area bounded by the A140 / B1117 / B1116 / A1120. If such trips were assigned to the network they would be forced to take unrealistic routes since their realistic routes are not available, so it was necessary to remove them from the trip matrix. The process for this included assessing the ratio of 'trip distance' to 'direct distance' followed by a manual check, to highlight OD pairs for removal from the matrix.

5.2.19 This 'cleaned' 2011 24-hour JTW matrix was then growthed to 2015 levels. Actual traffic growth rates were derived from DfT observed counts for the period 2011 to 2014, in combination with forecast traffic growth factors (for the 'Home-Based Work' journey purpose) for 2014 to 2015 obtained from NTEM dataset 6.2 (via TEMPRO) , adjusted by TAG fuel cost and income adjustment factors. The respective growth factors are shown in Table 5.9 to Table 5.11.

Table 5.9: DfT Observed Car Traffic Growth in Suffolk (2011-2014)

Vehicle Class	Total Observed Traffic		
	2011	2014	Growth Factor
Cars/Taxis	1,703,863	1,765,349	1.0361

Table 5.10: TEMPRO 'Home-Based Work' Car Driver Growth (2014-2015)

TEMPRO Region	Growth Factor	
	Average Weekday	
	Origin	Destination
South Norfolk	1.0105	1.0106
Suffolk	1.0093	1.0093
Babergh	1.0065	1.0065
Ipswich	1.0147	1.0147
Mid Suffolk	1.0081	1.008
Suffolk Coastal	1.0085	1.0085
Waveney	1.0069	1.0069

Table 5.11: TAG Fuel Cost and Income Adjustment Factors (2014-2015)

Adjustment Type	Growth Factor
Income	1.0020
Fuel cost	1.0146
Combined	1.0166

5.2.20 Combining the above factors provides overall growth factors, by region, for 2011 to 2015 as shown in Table 5.12.

Table 5.12: Overall JTW Car Traffic Growth (2011-2015)

TEMPRO Region	Growth Factor	
	Average Weekday	
	Origin	Destination
South Norfolk	1.0644	1.0645
Suffolk	1.0631	1.0645
Babergh	1.0602	1.0602
Ipswich	1.0688	1.0688
Mid Suffolk	1.0618	1.0617
Suffolk Coastal	1.0623	1.0623
Waveney	1.0606	1.0606

5.2.21 Similarly to the EERHAM matrix, since differing growth factors are supplied for origin and destination trips, for each region, it was necessary to furness the 2011 traffic matrices using the combined factors to produce the 2015 24-hour JTW matrix.

5.2.22 Statistics were subsequently obtained from the ONS and www.gov.uk, to estimate the proportions of workers off sick, on leave or working part-time on any given weekday. These reduction factors, reported in Table 5.13, were applied to the 2015 24-hour JTW matrix to provide more realistic trip volumes for a typical day, in the 'home-to-work' direction.

Table 5.13: Proportion of Workers 'Not At Work'

Proportion of workers on leave		
Minimum allowance (incl bank holidays), weeks[6]	5.6	
% of workers on leave	**10.8%**	
Proportion of workers off sick		
Hours lost to sickness (2013)[7]	1.2%	
% of workers off sick	**1.2%**	
Proportion of workers part-time		
	Employees working full-time	**Employees working part-time**
Sep-Nov 2014[8]	19,238,869	6,827,198
% of workers full-time / part-time	73.8%	26.2%
Assumed average hours as % of working week	100%	60%
% of workers part-time and not at work	**10.48%**	
Total proportion of workers 'not at work'		
Overall Reduction Factor to JTW matrix	**22.45%**	

5.2.23 The 24-hour JTW matrix totals are given in Table 5.14 for each stage of the calculations described above. The transpose of the final 'reduced' 2015 24-hour 'home-to-work' matrix provided a similar dataset for 24-hour 'work-to-home' trips.

[6] www.gov.uk "Holiday Entitlement Rights" (17 November 2014)
[7] ONS "Sickness Absence in the Labour Market, February 2014"
[8] ONS "Labour Market Statistics, January 2015" – Table A01: Summary of labour market statistics (sub-table 3: Full-time, part-time & temporary workers)

Table 5.14: 24-hour JTW Matrix Totals

24-hour JTW Matrix	Total Car Trips
2011	88,230
2011 cleaned	84,433
2015	89,840
2015 excl. 'not at work' (final JTW)	**69,675**
2015 total two-way trips	**139,349**

5.2.24 The next step was to derive the hourly JTW trips from the 24-hour matrix. NTS Table 0503 (September 2015) provides hourly trip profile factors by purpose, enabling the calculation of total (two-way) commuting trips within each modelled hour. It does not however provide information on the proportions of trips travelling 'to work' or 'from work'.

5.2.25 In September 2006 a Road Side Interview (RSI) survey was conducted on the A12 between Marlesford and Little Glemham, by AECOM on behalf of Suffolk County Council. This data was provided to WSP | Parsons Brinckerhoff and was used to analyse the directional split of commuting trips observed in each hour. A separate technical note9 has been produced detailing this analysis.

5.2.26 These hourly directional splits were applied to the 2015 24-hour JTW matrix, alongside hourly commuting trip profile factors derived from NTS Table 0503, to generate hourly matrices with evidence-based proportions of 'home-to-work' and 'home-to-work' trips. The final hourly 'commuting' Car matrix totals, for the 'I-I' matrix element, are shown in Table 5.15.

Table 5.15: Hourly 'Commuting' Factors and Matrix Totals

Modelled Hour	Directional Split from RSI		NTS profile of two-way commuting trips	Matrix Total		
	Home-to-Work	Work-to-Home	% of 24-hour trips in hour	Home-to-Work	Work-to-Home	All Trips
08:00-09:00	95.1%	4.9%	14.1%	18,707	962	**19,669**
15:00-16:00	33.3%	66.7%	4.4%	2,048	4,097	**6,145**
17:00-18:00	0.0%	100.0%	14.9%	0	20,701	**20,701**

OTHER PURPOSE TRIPS

5.2.27 Analysis of the 2006 RSI on the A12, details of which are provided in a separate technical note, demonstrates very similar trip length distributions for 'commuting' and 'other purpose' trips, as shown in Figure 5.1.

[9] Sizewell C 2015_Use of 2006 RSI Survey_170915

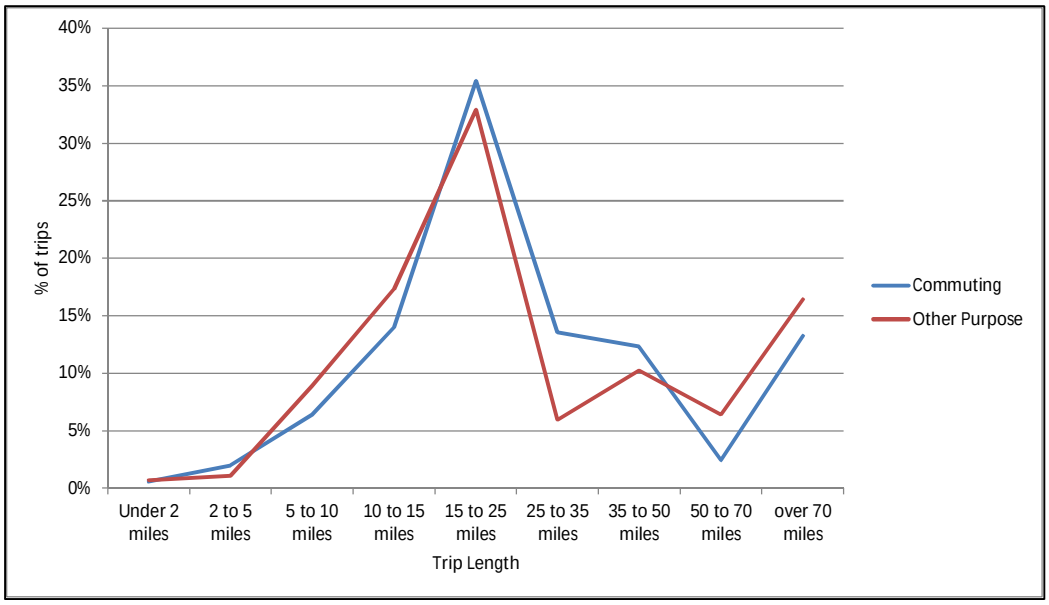


Figure 5.1: 2006 RSI 'Commuting' and 'Other Purpose' Trip Length Distribution

5.2.28 Since there is no other suitable source of data to provide the distribution of 'other purpose' trips, it was agreed with AECOM and SCC that the distribution of the 'commuting' matrices could be used given the similarities between the trip length distributions.

5.2.29 Factors derived from NTEM dataset 6.2 (via TEMPRO) were used to firstly convert 'home-based work' to 'other purpose' daily Car (vehicle) trip volumes, shown in Table 5.16.

Table 5.16: TEMPRO 'Car Driver' Trips by Purpose (2015)

TEMPRO Region	Average Weekday Trips					
	Home-Based Work		All Other Purposes		Conversion Factor 'commuting' to 'other purpose'	
	Origin	Destination	Origin	Destination	Origin	Destination
South Norfolk	57,767	57,864	125,200	124,967	**2.1673**	**2.1597**
Suffolk	326,471	326,522	735,812	735,972	**2.2538**	**2.2540**
Babergh	37,214	37,142	87,351	87,527	**2.3473**	**2.3566**
Ipswich	61,542	61,613	130,404	130,185	**2.1189**	**2.1129**
Mid Suffolk	41,149	41,038	81,657	81,932	**1.9844**	**1.9965**
Suffolk Coastal	58,287	58,444	131,978	131,848	**2.2643**	**2.2560**
Waveney	43,616	43,541	104,412	104,835	**2.3939**	**2.4077**

5.2.30 Similarly to the commuting matrices, hourly matrices were created for 'other purpose' trips using hourly trip profile factors provided in NTS Table 0503 (September 2015) and the directional split of 'from home' and 'to home' trips derived from the 2006 A12 RSI.

5.2.31 The hourly two-way trip profile factors for 'other purpose' trips, obtained from NTS Table 0503, were calculated as the average of all 'other' trip purposes (Business, Shopping, Other Personal, Visiting Friends/Family, Holiday). The 2006 RSI was used to analyse the directional split of 'other purpose' trips observed in each hour, based on trips with any purpose excluding 'work' or 'education' (Holiday Home, Employer's Business, Shopping, Personal Business, Visit Friends, Recreation/Leisure).

5.2.32 The final hourly 'other purpose' Car matrix totals, for the 'I-I' matrix element, are shown in Table 5.17.

Table 5.17: Hourly 'Other Purpose' Factors and Matrix Totals

Modelled Hour	24-Hour Total Trips		Directional Split from RSI		NTS profile of two-way 'other' trips	Matrix Total		
	Commuting	Other Purpose	Home-to-Work	Work-to-Home	% of 24-hour trips in hour	From Home	To Home	All Trips
08:00-09:00	139,349	310,374	96.1%	3.9%	5.7%	16,974	698	**17,672**
15:00-16:00			26.2%	73.8%	8.0%	6,509	18,384	**24,893**
17:00-18:00			36.6%	63.4%	7.5%	8,553	14,860	**23,413**

EDUCATION TRIPS

5.2.33 The 'EduBase' government database (updated in January 2014) contains information on schools and pupil numbers across the UK. A shapefile of school catchment areas was provided by SCC for the Suffolk districts covered by the SZC highway network.

5.2.34 Schools data for those districts lying outside of the modelled highway network was excluded from the analysis. School pupil trips are made within the catchment area for that school so trips made in these 'outer' locations would be very unlikely to enter the modelled highway network.

5.2.35 Figure 5.2 shows those areas (coloured) for which schools data has been utilised. The pink areas which are not coloured in detail are excluded from the school trips analysis.

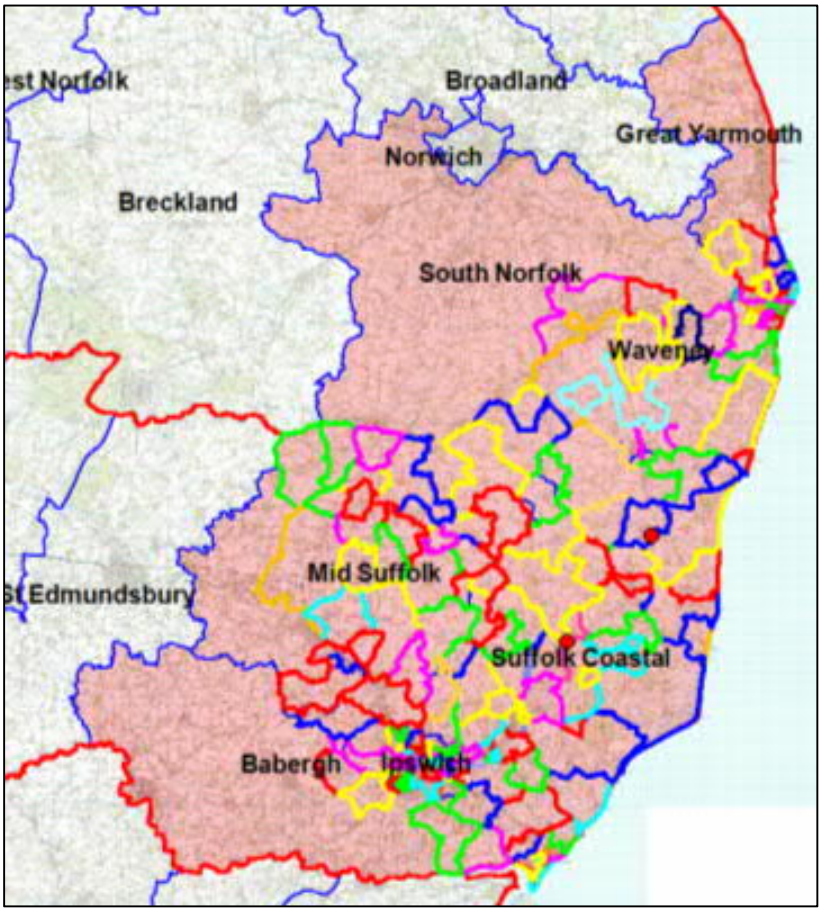


Figure 5.2: School Data Coverage

5.2.36 The Edubase database was then filtered to include only those schools with status “Open” or “Open, but proposed to Close”. Finally the database was filtered to remove the following types of establishment:

- Miscellaneous (education centres)
- Pupil Referral Unit
- Special Post 16 Institution
- Children’s home

5.2.37 Schools opened later than the census date of 16 January 2014 reported zero pupils in the database. Therefore for these schools, an estimation of pupil numbers was calculated from the school capacity, based on other schools as shown in Table 5.18.

Table 5.18: School Pupil Calculation

School type	Capacity (all schools)	Pupils (all schools)	Ratio of Pupils to Capacity
Primary	8,546	3,338	39%
Secondary	24,120	19,875	82%
Academy Special	202	215	106%

5.2.38 The ‘TRICS’ database provides a source of observed Car trip rate information, on an hourly basis, for a range of different land use types. A series of schools were selected across Suffolk for inclusion in the dataset, to provide typical hourly vehicular trip rates, per pupil, that could be applied to the schools within the modelled area. These trip rates are shown in Table 5.19.

Table 5.19: TRICS School Trip Rates

School Type	Arrivals						
	AM			PM			
	6-7am	7-8am	8-9am	3-4pm	4-5pm	5-6pm	6-7pm
Nursery	-	0.034	0.255	0.034	0.097	0.103	0.000
Primary	-	0.035	0.219	0.124	0.035	0.035	0.050
Secondary	-	0.045	0.176	0.085	0.038	0.024	0.032
6th Form (college)	-	0.011	0.050	0.010	0.012	0.011	0.009
Independent (boarding)	-	0.042	0.280	0.032	0.124	0.027	0.042
Independent (day)	-	0.035	0.219	0.124	0.035	0.035	0.050
School Type	**Departures**						
	AM			PM			
	6-7am	7-8am	8-9am	3-4pm	4-5pm	5-6pm	6-7pm
Nursery	-	0.014	0.145	0.034	0.117	0.131	0.055
Primary	-	0.005	0.137	0.156	0.084	0.044	0.024
Secondary	-	0.007	0.116	0.118	0.064	0.040	0.025
6th Form (college)	-	0.002	0.016	0.018	0.028	0.021	0.007
Independent (boarding)	-	0.017	0.126	0.027	0.219	0.059	0.061
Independent (day)	-	0.005	0.137	0.156	0.084	0.044	0.024

5.2.39 TRICS survey data does not distinguish between pupil trips and staff trips (the latter would already be included in the ‘commuting’ matrix) therefore some adjustment to the TRICS trip rates was necessary in order to calculate approximate ‘pupil’ Car trip numbers. It should be noted that no analysis has been undertaken to separate ‘linked’ trips, i.e. parents making a school drop-off on the way to work, so the

trip rates used in this assessment reflect a robust assumption that all 'education' trips will be new trips on the network and not part of a linked 'commuting' trip.

5.2.40 Firstly, it was assumed that all trips made after 4pm would be made by staff rather than pupils, and that all trips made within 15:00-16:00 would be made to escort pupils. A proportion was therefore derived to represent pupil trips (15:00-16:00) as a proportion of all PM trips (16:00-19:00). This factor was then applied to the sum of all trips made in the morning period (06:00-09:00) to calculate the number of pupil escort trips in the AM period, all of which were assumed to travel between 08:00-09:00. Thus education trip matrices were produced only for 08:00-09:00 and 15:00-16:00 hours.

5.2.41 Table 5.20 displays the calculation of pupil trip rates as a proportion of total trip rates in the PM hours, along with the total trip rates in the AM hours.

Table 5.20: Calculation of Pupil Trip Proportions

School Type	Total Trip Rates (Arr+Dep)		Proportion of 'Pupil' Trips	6-9am (all trips)	
	3-4pm (pupil trips)	3-7pm (all trips)		Arr	Dep
Nursery	0.068	0.571	11.9%	0.289	0.159
Primary	0.280	0.552	50.7%	0.254	0.142
Secondary	0.203	0.426	47.7%	0.221	0.123
6th Form (college)	0.028	0.116	24.1%	0.061	0.018
Independent (boarding)	0.059	0.591	10.0%	0.322	0.143
Independent (day)	0.280	0.552	50.7%	0.254	0.142

5.2.42 The adjusted 'pupil trip rates' based on the above calculations, along with pupil numbers and resultant trip volumes by school type for all school catchments within Suffolk, are shown in Table 5.21.

Table 5.21: Pupil Trips

School Type	Pupil Trip rates				School Catchment		
	8-9am		3-4pm		Pupils	Trips	
	Arr	Dep	Arr	Dep		8-9am	3-4pm
Nursery	0.034	0.019	0.034	0.034	103	5	7
Primary	0.129	0.072	0.124	0.156	31,966	6,421	8,950
Secondary	0.105	0.059	0.085	0.118	26,854	4,402	5,451
6th Form	0.015	0.004	0.010	0.018	1,568	30	44
Independent (boarding)	0.032	0.014	0.032	0.027	3,974	184	234
Independent (day)	0.129	0.072	0.124	0.156	1,248	251	350
Total					**65,713**	**11,294**	**15,037**

5.2.43 Once the trip volumes generated by each school had been calculated, the school catchment areas were disaggregated to SZC model zones based on the 2011 Census population of 5-15 year olds.

5.2.44 Where zones lie on the outskirts of the model, the catchment areas have been split with schools and 'home' zones lying outside of the modelled network being excluded, as these trips would be unlikely to enter the modelled highway network. Finally, the same 'cleaning' process was applied to the Education matrices as the Commuting matrices, whereby trips in the 'Internal' model area that are likely to use roads that are not modelled were removed from the matrices. The final matrix totals are displayed in Table 5.22.

Table 5.22: Education Matrix Totals

Modelled Hour	Total Car Trips	
	Before Cleaning of Trips	Final
08:00:09:00	11,294	**9,379**
15:00-16:00	15,037	**12,519**

MARTLESHAM PARK & RIDE

5.2.45 A separate zone (1001) has been coded in the SZC model to represent the Martlesham Park & Ride (P&R) site to the north-west of the A12 / A1214 roundabout.

5.2.46 An ATC was collected at the site entrance which provided exact trip volumes to and from the zone.

5.2.47 Since this P&R service runs between the car park and Ipswich town centre it was considered reasonable to derive a proxy distribution of trips from the 2015 24-hour JTW matrix, based on a selection of central Ipswich zones (for the 'work' trip end) and zones to the east of the town centre (for the 'home' trip end). The model zones were filtered to provide the origin and destination zones likely to use the Park & Ride site, which are shown in Figure 5.3.

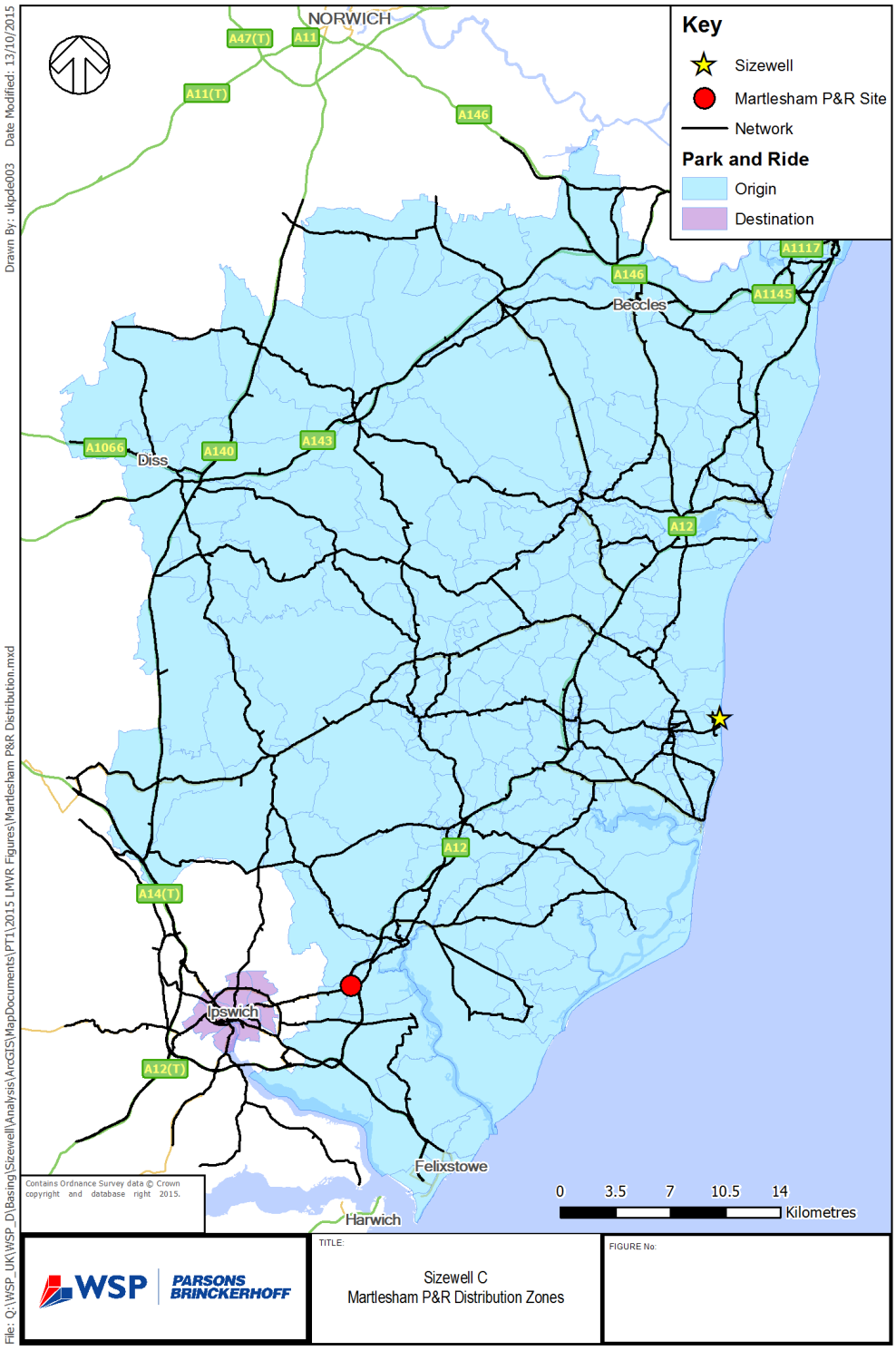


Figure 5.3: Martlesham P&R Trip Distribution Zones

5.2.48 The distribution of trips between these origin and destination zones, extracted from the 2015 24-hour JTW matrix, was factored to the observed 'to P&R' Car trips for each modelled hour. The distribution from the transposed JTW matrix was similarly factored to the observed 'from P&R' Car trips. The total Car trips for this zone are shown in Table 5.23. Note that there are no LGV and HGV trips modelled in this zone.

Table 5.23: Martlesham Park & Ride Car Trips

Modelled Hour	To Zone	From Zone	Total
08:00:09:00	70	17	**87**
15:00-16:00	9	27	**36**
17:00-18:00	7	41	**48**

5.2.49 Since these trips are 'Park & Ride' and not 'Car' mode, they are not double-counted within the JTW data so there was no requirement to offset the additional trips modelled in this zone.

COMBINED 'CAR' MATRICES

5.2.50 The 'commuting', 'education' and 'other purpose' trip matrices were summed, along with the Martlesham P&R trips, to provide 'Internal-Internal' origin-destination trips for each modelled hour, for the Car vehicle class.

5.2.51 These were then combined with the EERHAM trip matrices which represented all trips with an external trip end, i.e. 'E-E', 'E-I' and 'I-E', to provide full 'Car' Initial matrices for 08:00-09:00, 15:00-16:00 and 17:00-18:00 hours, which were assigned to the 2015 base model networks as the first step in model calibration. The Initial matrix totals are shown in Table 5.24.

Table 5.24: Initial Highway Matrix Totals (veh/hour)

Modelled Hour	Car						LGV	HGV
	EERHAM	Commute	Other Purpose	Education	Martlesham P&R	Total		
08:00-09:00	14,363	19,669	17,672	9,379	87	**61,170**	**3,499**	**1,753**
15:00-16:00	9,556	6,145	24,893	12,519	36	**53,148**	**3,125**	**1,725**
17:00-18:00	15,154	20,701	23,413	-	48	**59,316**	**2,650**	**1,155**

5.3 MATRIX CALIBRATION

5.3.1 Part of model calibration, which is discussed in chapter 6, involves calibration of the traffic demand matrix. Following development of the Initial matrices, changes are made so that the origin-destination movements are representative of observed highway traffic flows and meet TAG criteria.

5.3.2 According to TAG unit M3.1 (January 2014), manual changes may be made to the Initial matrices in order to achieve a closer fit with observed count data, before a final step of matrix estimation is undertaken to fine-tune the trip matrices.

5.3.3 Following the assignment of the Initial matrices to the highway network, it was apparent that some adjustments to these Initial matrices were necessary prior to running the matrix estimation procedure. This process is described in detail in section 6.4.

5.3.4 A comparison of trip volumes by sector was undertaken to review where the key changes in traffic volume have occurred. So that the integrity of the matrix was maintained during the matrix calibration process, an analysis was also undertaken of the comparative trip length frequency distribution exhibited by the Prior (pre-ME) and Final (post-ME) matrices. These comparisons are presented in Chapter 7.

6 HIGHWAY ASSIGNMENT MODEL – CALIBRATION

6.1 INTRODUCTION

6.1.1 The process of model calibration is designed so that the parameters that control the model's calculation of route choices and the resulting delays replicate traffic patterns in the network. Model calibration also refers to the process of adjusting and confirming values of Origin-Destination (OD) movements in the trip matrices to improve the performance of the model, which is achieved by making use of the various data collected during the study. Manual adjustments to the traffic matrix can also be applied where there may be a particular imbalance of trip patterns.

6.1.2 A number of calibration and validation checks were performed as follows:

- Routeing validation
- Model convergence
- Link flow calibration

6.1.3 This Chapter describes the process of model calibration and presents the 2015 base model calibration results for 08:00-09:00, 15:00-16:00 and 17:00-18:00.

6.2 CALIBRATION AND VALIDATION CRITERIA

6.2.1 Transport models should be developed in accordance with the DfT's TAG guidance and should meet the criteria shown in Table 6.1.

Table 6.1: TAG Model Calibration and Validation Criteria

Measure	Criteria	Acceptability Guideline
Flow Criteria		
Observed flow < 700 vph	Modelled flow within ±100 vph	> 85 % of links
Observed flow 700 - 2,700 vph	Modelled flow within ±15%	> 85 % of links
Observed flow > 2,700 vph	Modelled flow within ±400 vph	> 85 % of links
Total screenline flows (normally >5 links) to be within ±5%		All (or nearly all) screenlines
GEH Criteria		
GEH Statistic for individual links < 5		> 85 % of links
GEH Statistic for screenline totals < 4		All (or nearly all) screenlines
Journey Times		
Modelled journey time within ±15% (or 1 minute, whichever is greater) of observed journey time		> 85% of routes

6.2.2 Traffic flows are required to meet either the 'GEH' or the 'Flow' criteria on 85% of links, and 'all or nearly all' screenlines.

6.2.3 Model calibration refers to traffic count data which has been used as part of the model and matrix calibration, i.e. input to the matrix estimation process.

6.2.4 Model validation refers to independent observed data which has not been used during for calibration. There is no guidance on the proportion of traffic data that should be reserved for model validation, however 10% is usually considered to be sufficient. In addition, journey times are compared to check the modelled speeds and levels of delay are in accordance with observed conditions.

6.2.5 Both sets of traffic count data (for calibration and validation) are subject to the criteria defined in Table 6.1, i.e. a comparison of the individual counts is made as well as for a set of screenlines. The results of model calibration are discussed in section 6.5, whilst the model validation results are discussed in Chapter 7. The calibration and validation screenlines are shown graphically in Appendix E.

6.2.6 In addition to the link flow and journey time criteria shown in Table 6.1, the following checks must be made of the changes brought about by matrix estimation (ME):

- Assessment of the change in trip volumes between Prior (pre-ME) matrix and Final (post-Me) matrix
- Assessment of the change in trip length distribution between the Prior matrix and Final matrix

6.2.7 These comparisons of the Prior and Final traffic demand matrices are described in Chapter 7.

6.3 SURVEY DATA CHECKS

6.3.1 All count data was firstly checked for consistency and any observed counts that were inconsistent with counts at adjacent sites were balanced, as described in section 3.3.

6.3.2 The sites that were included in calibration/validation are shown in the detailed tables contained in Appendix F and Appendix G. A summary of the excluded and balanced counts is contained in Appendix D.

6.4 MODEL CALIBRATION PROCESS

ROUTEING VALIDATION

6.4.1 Sense checks were carried out on a number of strategic and local routes across the study area. In particular, route choice of HGV was checked so that key strategic routes were chosen rather than localised short-cuts.

6.4.2 Following assignment of the Initial highway matrices, as described in section 5.3, ‘flow bundles’ were carried out on numerous links to sense-check the paths of trips traversing these links. Such links included:

- A14
- A12
- A143
- A140
- A1214 (around Ipswich)
- B1077 and B1079 (north of Ipswich)
- B1078 (west of Wickham Market)
- B1069 (east of Wickham Market)
- B1438 (south of Wickham Market)
- B1438 (east of Woodbridge)

- A1120 (west of Yoxford)
- B1125 (east of Yoxford)
- B1122 (north of Leiston)
- A1120 and B1119 (west of Saxmundham)
- B1121 (east of Saxmundham)

6.4.3 These checks were also made regularly during the calibration process.

QUEUE FORMATION

6.4.4 Modelled queue lengths were reviewed to check that they were forming in expected locations, e.g. Ipswich town centre. This highlighted areas where queues at particular junctions were preventing the required traffic demand from getting through that junction and onto downstream links. Where such queuing was observed, the modelled flows were compared against observed flows on surrounding links to determine whether these delays should be reduced in order to increase the capacity of a particular turn to allow the observed flow to be achieved. In such cases signal timings or 'critical gap' and 'follow-up' times (at priority junctions) were adjusted to reduce the delay on the required turns.

6.4.5 In the case of slip road merges, as was the case in the 2012 base models, at these nodes the critical gap has been set to '2.0' with a follow-up time of '1.5', in order to achieve a balance between achieving the desired throughput of traffic and simulating realistic levels of delay at such junctions.

DEMAND CALIBRATION

6.4.6 As described in Chapter 5, the process of model calibration involves adjustments to the traffic demand matrices as well as to the network.

6.4.7 After assigning the 'Initial' matrices to the networks and undertaking a first matrix estimation procedure to assess the level of calibration achieved, the comparison, although reasonably good, highlighted the following characteristics in the Initial matrices:

- HGV matrices largely underestimating trips, potentially due to the difference in zone sizing between EERHAM and SZC models as well as the fact that the matrices are built solely from the 2006 EERHAM data which does not necessarily reflect trip volumes well in the SZC model area
- Car matrices slightly overestimating trips, potentially only within the 'Internal-Internal' movements generated from JTW and Education data

6.4.8 Adjustments to the Initial traffic demand matrices were therefore made as follows:

- HGV 'I-I' matrix doubled (external movements unchanged)
- Car 'I-I' matrix factored down by 5% (external movements unchanged)

6.4.9 There was no suitable data source that could be used to improve the HGV matrices, so applying a simple factor of 2 was deemed the most appropriate method for providing Initial matrices that fit better with observed traffic counts. For the Car matrices, it is considered that all possible data sources were utilised to provide a good quality set of Initial matrices however the application of this simple, small-scale reduction factor provided an enhancement to the Initial matrices that is in line with DfT TAG guidance.

6.4.10 The above manual changes were made to the Initial matrices to produce 'Prior' matrices which were assigned to the network, before applying matrix estimation which resulted in the Final matrices. The matrix totals at each stage are shown in Table 6.2.

Table 6.2: Final Highway Matrix Totals (veh/hour)

Vehicle Class / Modelled Hour	Matrix Totals (veh/hr)		
	Initial	Prior (Pre-ME)	Final (Post-ME)
Car			
08:00-09:00	61,170	58,834	**53,300**
15:00-16:00	53,148	50,971	**49,865**
17:00-18:00	59,316	57,110	**50,946**
LGV			
08:00-09:00	3,499	3,499	**3,727**
15:00-16:00	3,125	3,125	**3,062**
17:00-18:00	2,650	2,650	**2,771**
HGV			
08:00-09:00	1,753	2,212	**2,747**
15:00-16:00	1,725	2,232	**2,744**
17:00-18:00	1,155	1,378	**1,623**

6.4.12 It is important to note that some OD pairs were 'frozen' during matrix estimation so that these particular trips would not be changed:

- → Zone 1001 which represents Martlesham Park & Ride (matrix volumes based on ATC)
- → 'External-External' trips (derived from EERHAM matrices)

6.4.13 The freezing of all External trips was considered however this could not be achieved with the 2015 traffic count data. For example, where the modelled 'Car' traffic flows were too high compared with the observed counts, particularly on the A14 where the majority of this traffic has an External trip end, it was not possible to reduce the trips in the matrix to a level similar to the counts by only changing 'Internal-Internal' trips.

6.4.14 Assignment of the Final highway matrices was assessed against the calibration and validation criteria set out in Table 6.1, the results of which are discussed in section 6.5 and section 7.2.

6.5 MODEL CALIBRATION RESULTS

6.5.1 Checks have been made so that:

- → TAG guidance on model convergence (Delta (δ) values of less than 0.2%) is met
- → Calibration and validation of VISUM meets DfT TAG criteria

CONVERGENCE

6.5.2 As described in section 4.5 each transport system is assigned over a number of iterations until a level of stability or 'convergence' is achieved. The TAG-recommended convergence criteria, which is pre-set set within VISUM, is set out in Table 6.3.

Table 6.3: TAG Convergence Criteria

Measure of Convergence	Acceptable Value
'Delta'	Less than 1%
Percentage of links with flow changes < 5% ('P')	Four consecutive iterations greater than 90%

6.5.3 The maximum number of 'LUCE' assignment iterations has been set to 100 for each transport system, since the majority of models should converge within this range. For the Car element these represent the 'inner' iterations within each overall 'Assignment with ICA' iteration. For the Car assignment VISUM does not assess the 'P' statistic in terms of percentage change in link flows; rather it assesses the difference in flows on a turn basis in terms of the GEH and reports the percentage of turns with flow changes less than a GEH value of 1.

6.5.4 The results of the assignment are shown in Table 6.4 to Table 6.6 for the 08:00-09:00, 15:00-16:00 and 17:00-18:00 models respectively. These demonstrate that the vehicle classes converge 'naturally', i.e. according to the settings defined within the model.

Table 6.4: Convergence Results (08:00-09:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000876544	50	100.0%	99.8%	99.7%	99.6%
LGV	0.00000227127	6	0.0%	0.0%	0.0%	98.5%
HGV	0.00000096977	6	0.0%	0.0%	0.0%	99.2%

Table 6.5: Convergence Results (15:00-16:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000298650	50	100.0%	100.0%	100.0%	100.0%
LGV	0.00000017553	6	0.0%	0.0%	0.0%	98.5%
HGV	0.00000009903	7	0.0%	0.0%	0.0%	98.5%

Table 6.6: Convergence Results (17:00-18:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000501177	50	99.7%	99.4%	99.9%	99.9%
LGV	0.00000034174	6	0.0%	0.0%	0.0%	99.4%
HGV	0.00000142046	6	0.0%	0.0%	0.0%	99.2%

CALIBRATION TRAFFIC FLOWS

6.5.5 Observed traffic flow data that was used during matrix estimation to produce a better fit of traffic demand is compared against assigned modelled outputs as part of model calibration. The majority of count data was used during model calibration (114 link counts), whilst around 10% of the data was reserved for model validation (16 link counts) hence was excluded from the matrix estimation input.

6.5.6 The assignment of the matrix to the network should reproduce the overall level and general distribution of observed traffic, which is assessed by comparing assignment results with selected observed link flows within the study area. The assessment is conducted in accordance with guidance provided in TAG Unit M3.1. The model outputs are compared against surveyed traffic data for the modelled hour to ascertain the goodness-of-fit. A modified Chi^2 statistic known as the GEH (Geoffrey Edward Havers) statistic is used to determine the best fit. In terms of traffic flow, for each count location the 'GEH' statistic is calculated as a combination of the absolute difference and the percentage difference between the modelled (M) and observed (O) traffic flow. The formula is:

$$GEH = \sqrt{\frac{(O - M)^2}{0.5\ (O + M)}}$$

6.5.7 The GEH statistic recognises that when traffic flows are low the percentage difference between observed and modelled flows may be high but the significance of this difference is small. A GEH value greater than 10 indicates that closer attention is required as the match between observed and modelled flows is poor, while a GEH of less than 5 indicates a very good fit. According to DfT guidance, modelled flows should have a GEH value of less than 5, or meet the 'flow' criteria (as per Table 6.1), for at least 85% of traffic counts, in order to be considered a good 'fit'.

6.5.8 Traffic models are typically built using total link flows, and there is no guidance or requirement to assess turning movements. Consequently, where MCC survey data is used, total flows to and from each arm were calculated to provide link totals.

6.5.9 A summary of the link flow calibration for the 08:00-09:00, 15:00-16:00 and 17:00-18:00 modelled hours are shown in Table 6.7 to Table 6.9. Also presented are the results from the Prior matrix assignment (before matrix estimation) with detailed results provided in Appendix F.

Table 6.7: Traffic Flow Calibration Summary (08:00-09:00)

08:00-09:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	62	75	68%	18
LGV	114	56	107	94%	8
HGV	114	100	108	95%	4
Total Vehs	114	60	72	63%	24
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**58476**	**55699**		**-5%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	5		50%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	95	96	84%	3
LGV	114	107	114	100%	0
HGV	114	111	113	99%	0
Total Vehs	114	93	95	86%	5
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**58476**	**54277**		**-7%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	9		90%	0

Table 6.8: Traffic Flow Calibration Summary (15:00-16:00)

15:00-16:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	69	82	73%	13
LGV	114	71	110	96%	2
HGV	114	98	107	94%	6
Total Vehs	114	63	75	68%	15
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**54342**	**51020**		**-6%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	6		60%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	104	102	92%	0
LGV	114	104	113	99%	0
HGV	114	111	113	99%	0
Total Vehs	114	100	101	89%	2
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**54342**	**50628**		**-7%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	8		80%	0

Table 6.9: Traffic Flow Calibration Summary (17:00-18:00)

17:00-18:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	62	72	63%	21
LGV	114	74	112	98%	2
HGV	114	107	113	99%	1
Total Vehs	114	61	71	63%	19
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**57777**	**57565**		**0%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	5		50%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	107	105	96%	3
LGV	114	102	113	99%	0
HGV	114	112	114	100%	0
Total Vehs	114	104	100	92%	3
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**57777**	**55388**		**-4%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	7		70%	0

6.5.10 These tables demonstrate that the model is well calibrated in each represented hour. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

7 HIGHWAY ASSIGNMENT MODEL – VALIDATION

7.1 INTRODUCTION

7.1.1 As described in Chapter 6, model calibration refers to the process of checking route choices and network conditions and comparing against traffic counts undertaken across the study area. Validation of the assignment model requires that the modelled transport flows replicate independent data not used in the construction of the models, i.e. other link flow counts not used in matrix estimation. Whilst there is no guidance on the proportion of traffic data that should be reserved for model validation, 10% is usually considered to be sufficient and this has been applied for the Sizewell C 2015 base models.

7.1.2 This Chapter describes the 2015 base model validation results for 08:00-09:00, 15:00-16:00 and 17:00-18:00.

7.2 MODEL VALIDATION RESULTS

LINK TRAFFIC FLOWS

7.2.1 As with the traffic flow calibration, the same GEH criteria is applied in order to establish the goodness-of-fit of link flows against observed. Independent count data is compared against modelled output, for each individual vehicle class as well as total vehicles, to assess in detail the level of validation of the model.

7.2.2 A summary of the link flow validation for the 08:00-09:00, 15:00-16:00 and 17:00-18:00 modelled hours is shown in Table 7.1 to Table 7.3. Also presented are the results from the Prior matrix assignment (before matrix estimation) with detailed results provided in Appendix G.

Table 7.1: Traffic Flow Validation Summary (08:00-09:00)

08:00-09:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	10	12	81%	0
LGV	16	9	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	11	14	94%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**6390**	**6862**		**7%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	14	15	94%	0
LGV	16	16	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	13	14	88%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**6390**	**6658**		**4%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

Table 7.2: Traffic Flow Validation Summary (15:00-16:00)

15:00-16:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	13	13	81%	0
LGV	16	13	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	13	13	81%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7162**	**6742**		**-7%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	12	13	81%	0
LGV	16	16	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	12	12	75%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7162**	**6997**		**-2%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

Table 7.3: Traffic Flow Validation Summary (17:00-18:00)

17:00-18:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	11	12	75%	0
LGV	16	11	14	88%	0
HGV	16	16	16	100%	0
Total Vehs	16	12	14	88%	1
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7072**	**7307**		**3%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	11	13	81%	0
LGV	16	14	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	11	14	88%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7072**	**7051**		**0%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

7.2.3 These tables demonstrate that the model is well validated in each represented hour. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

JOURNEY TIMES

7.2.4 The locations of journey time routes are presented at Figure 3.1 in chapter 3. A summary of the journey time validation for the 08:00-09:00, 15:00-16:00 and 17:00-18:00 modelled hours is shown in Table 7.4 to Table 7.6. The detailed comparison results for each route individually are presented in Appendix H.

Table 7.4: Journey Time Validation Summary (08:00-09:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	21:38	18:23	24:53	21:16	✓
	WB	20:03	17:03	23:03	21:01	✓
Route 2	NB	31:20	26:38	36:02	30:33	✓
	SB	36:02	30:38	41:26	32:30	✓
Route 3	NB	27:16	23:11	31:21	25:55	✓
	SB	27:37	23:28	31:46	26:08	✓
Route 4	EB	42:10	35:50	48:30	42:06	✓
	WB	43:17	36:47	49:47	42:03	✓
Route 5	EB	44:27	37:47	51:07	40:40	✓
	WB	45:31	38:41	52:21	40:23	✓
Route 6	NB	21:58	18:40	25:16	24:26	✓
	SB	25:19	21:31	29:07	22:20	✓
Route 7	NB	29:51	25:22	34:20	27:30	✓
	SB	26:46	22:45	30:47	27:48	✓
Route 8	NB	35:43	30:22	41:04	31:33	✓
	SB	41:01	34:52	47:10	33:23	×
Route 9	EB	31:08	26:28	35:48	22:38	×
	WB	30:21	25:48	34:54	22:50	×
Route 10	NB	34:36	29:25	39:47	33:56	✓
	SB	33:36	28:34	38:38	34:37	✓
Total Routes		**20**				**17**
						85%

Table 7.5: Journey Time Validation Summary (15:00-16:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	19:21	16:27	22:15	20:29	✓
	WB	18:31	15:44	21:18	20:29	✓
Route 2	NB	32:57	28:00	37:54	31:10	✓
	SB	31:57	27:09	36:45	30:08	✓
Route 3	NB	29:28	25:03	33:53	26:14	✓
	SB	28:58	24:37	33:19	25:59	✓
Route 4	EB	44:02	37:26	50:38	41:58	✓
	WB	47:32	40:24	54:40	41:40	✓
Route 5	EB	43:51	37:16	50:26	40:36	✓
	WB	48:45	41:26	56:04	40:00	×
Route 6	NB	26:42	22:42	30:42	24:32	✓
	SB	26:09	22:14	30:04	22:17	✓
Route 7	NB	30:20	25:47	34:53	27:15	✓
	SB	27:10	23:06	31:14	28:00	✓
Route 8	NB	38:14	32:30	43:58	32:37	✓
	SB	35:55	30:32	41:18	31:05	✓
Route 9	EB	29:30	25:04	33:55	22:33	×
	WB	28:27	24:11	32:43	22:31	×
Route 10	NB	38:26	32:40	44:12	33:11	✓
	SB	34:09	29:02	39:16	33:25	✓
Total Routes		**20**				**17**
						85%

Table 7.6: Journey Time Validation Summary (17:00-18:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	18:53	16:03	21:43	21:09	✓
	WB	19:34	16:38	22:30	21:19	✓
Route 2	NB	32:51	27:55	37:47	31:42	✓
	SB	32:04	27:15	36:53	30:23	✓
Route 3	NB	28:17	24:02	32:32	26:22	✓
	SB	28:40	24:22	32:58	25:51	✓
Route 4	EB	41:46	35:30	48:02	42:04	✓
	WB	41:38	35:23	47:53	41:44	✓
Route 5	EB	42:13	35:53	48:33	40:45	✓
	WB	43:33	37:01	50:05	40:04	✓
Route 6	NB	26:42	22:42	30:42	24:31	✓
	SB	24:56	21:12	28:40	22:14	✓
Route 7	NB	29:32	25:06	33:58	27:07	✓
	SB	28:25	24:09	32:41	27:55	✓
Route 8	NB	38:44	32:55	44:33	33:04	✓
	SB	36:12	30:46	41:38	31:14	✓
Route 9	EB	29:39	25:12	34:06	22:41	×
	WB	29:25	25:00	33:50	22:40	×
Route 10	NB	37:41	32:02	43:20	33:17	✓
	SB	32:51	27:55	37:47	33:46	✓
Total Routes		**20**				**18**
						90%

7.2.5 These results demonstrate that in the modelled journey times are well validated for each represented hour with at least 85% of modelled routes falling within the accepted range of observed values.

PRE-ME AND POST-ME MATRIX COMPARISON

7.2.6 As noted in section 5.3, TAG unit M3.1 (January 2014) provides guidance for assessing the level of change brought about by the matrix estimation process, which is the last step of matrix calibration. The following criteria are set out in TAG for the comparison of changes between pre- and post-matrix estimation:

8.3.13 The changes brought about by matrix estimation should be carefully monitored by the following means:

- scatter plots of matrix zonal cell values, prior to and post matrix estimation, with regression statistics (slopes, intercepts and R^2 values);
- scatter plots of zonal trip ends, prior to and post matrix estimation, with regression statistics (slopes, intercepts and R^2 values);
- trip length distributions, prior to and post matrix estimation, with means and standard deviations; and
- sector to sector level matrices, prior to and post matrix estimation, with absolute and percentage changes.

8.3.14 The changes brought about by matrix estimation should **not** be significant. The criteria by which the significance of the changes brought about by matrix estimation may be judged are given in Table 5.

Table 5 Significance of Matrix Estimation Changes

Measure	Significance Criteria
Matrix zonal cell values	Slope within 0.98 and 1.02 Intercept near zero R^2 in excess of 0.95
Matrix zonal trip ends	Slope within 0.99 and 1.01 Intercept near zero R^2 in excess of 0.98
Trip length distributions	Means within 5% Standard deviations within 5%
Sector to sector level matrices	Differences within 5%

8.3.15 All exceedances of these criteria should be examined and assessed for their importance for the accuracy of the matrices in the Fully Modelled Area or the area of influence of the scheme to be assessed. Where the exceedances are important and statistically significant, the development of the prior matrix should be reconsidered. Where they are not considered to be important, the reasons should be documented in the Local Model Validation Report.

7.2.7 A comparison of the Prior and Final traffic matrices has been undertaken to check the change in trip patterns resulting from the matrix estimation (ME) process. The matrix totals are contained in Table 6.2.

7.2.8 Trip length distribution changes are displayed in Figure 7.1 to Figure 7.3 and in Table 7.7 to Table 7.9 for the 08:00-09:00, 15:00-16:00 17:00-18:00 periods. These demonstrate that the trip length distributions of all vehicle classes show little change between the Prior (pre-ME) and Final (post-ME) trip matrices.

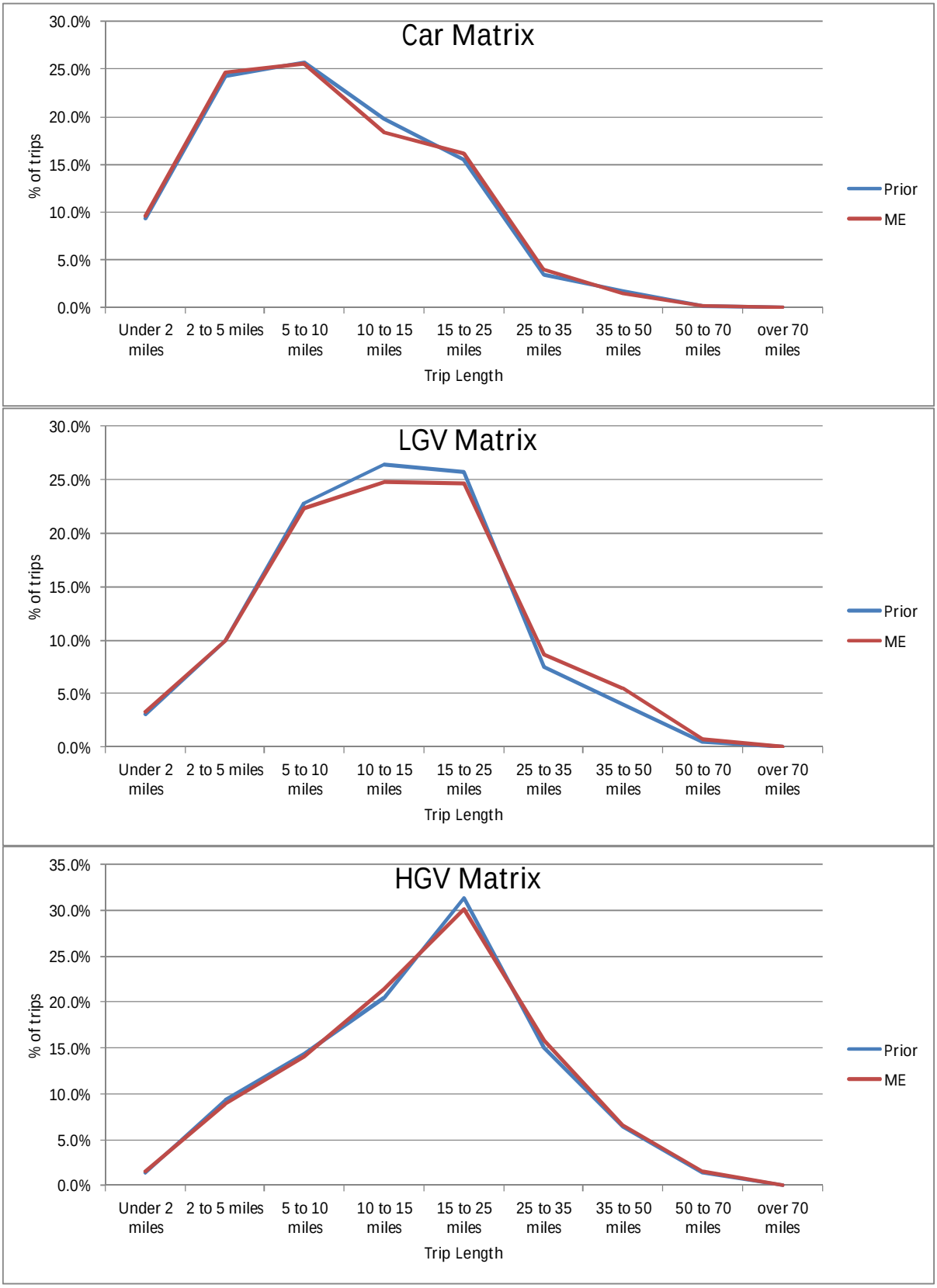


Figure 7.1: Trip Length Distribution (08:00-09:00) Prior and Final Matrices

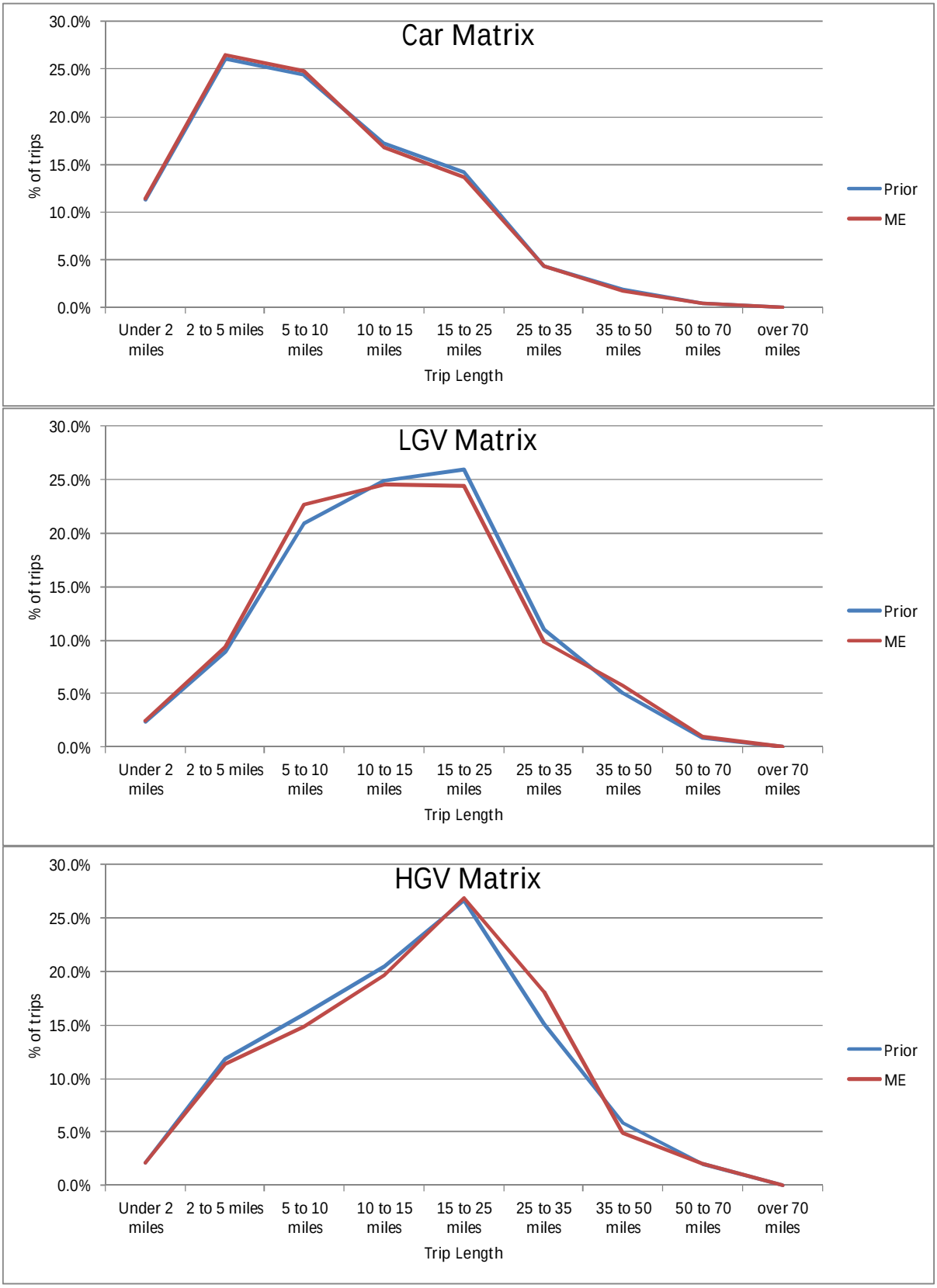


Figure 7.2: Trip Length Distribution (15:00-16:00) Prior and Final Matrices

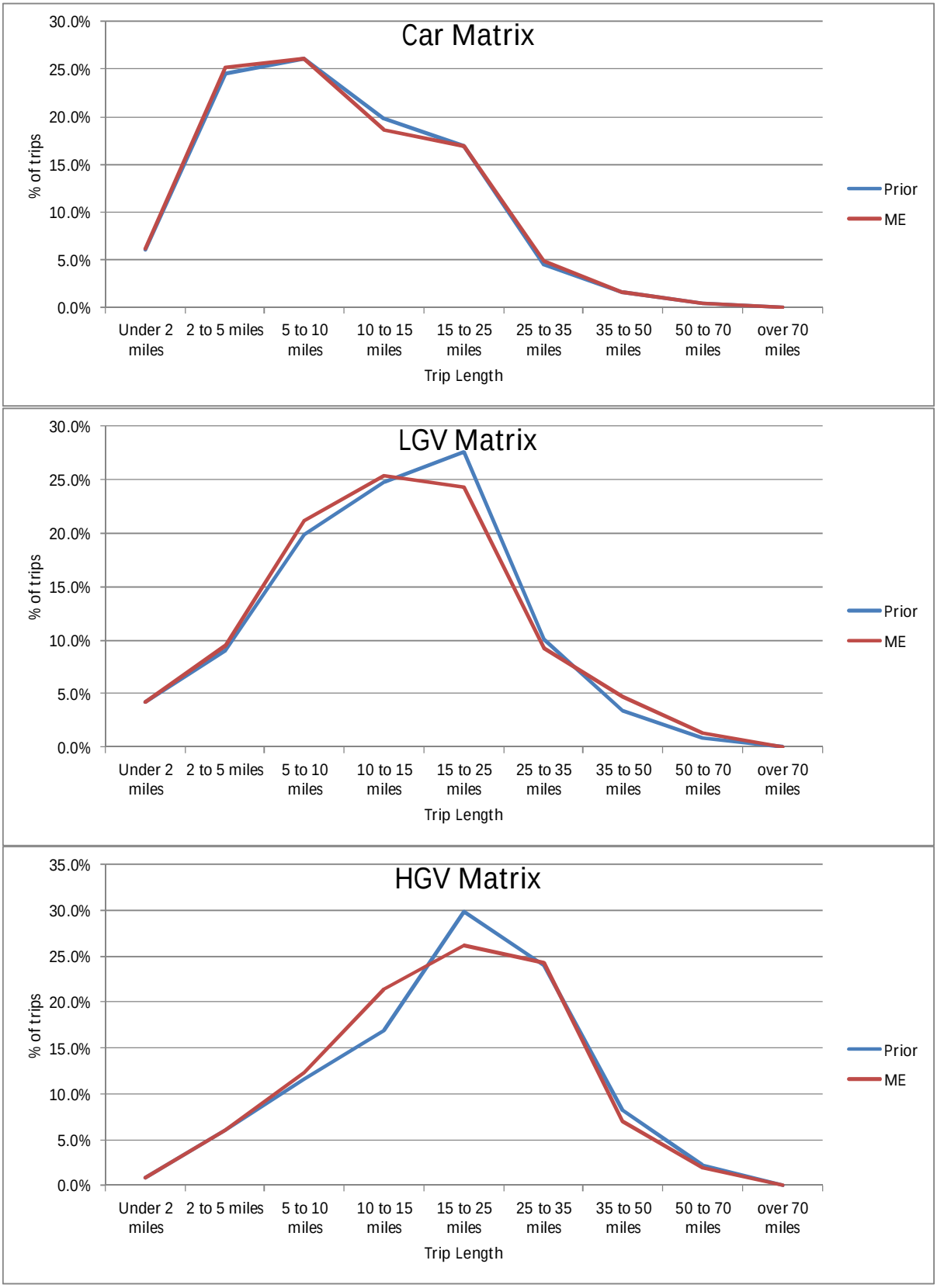


Figure 7.3: Trip Length Distribution (17:00-18:00) Prior and Final Matrices

Table 7.7: Change in Trip Length Distribution (08:00-09:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	16.00	15.94	**-0.36%**	22.96	23.96	**4.35%**	28.48	28.65	**0.61%**
Std Dev	13.01	12.95	**-0.53%**	15.08	16.37	**8.55%**	17.56	17.73	**0.97%**

Table 7.8: Change in Trip Length Distribution (15:00-16:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	15.86	15.58	**-1.76%**	24.98	24.67	**-1.23%**	27.21	27.55	**1.26%**
Std Dev	14.19	13.99	**-1.47%**	16.39	16.79	**2.41%**	18.26	17.83	**-2.37%**

Table 7.9: Change in Trip Length Distribution (17:00-18:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	17.04	16.97	**-0.45%**	23.91	24.09	**0.74%**	32.28	31.00	**-3.96%**
Std Dev	13.56	13.65	**0.67%**	15.63	16.86	**7.90%**	18.10	17.71	**-2.16%**

7.2.9 The regression statistics, analysis changes in trip volumes at zonal, trip end and sector level, are displayed in Table 7.10 to Table 7.12 for the 08:00-09:00, 15:00-16:00 17:00-18:00 models respectively. The sectored movements are defined as follows, based on zone categorisation as described in section 4.3:

- External to External
- External to Internal
- Internal to External
- Internal to Internal

Table 7.10: Prior and Final Matrix Comparison (08:00-09:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.90	0.94
Origin Trip Ends		3.36	0.89	0.98
Destination Trip Ends		2.80	0.89	0.97
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-7.04%		
	I-E	2.48%		
	I-I	-12.28%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.01	0.90	0.84
Origin Trip Ends		0.83	0.99	0.95
Destination Trip Ends		2.55	0.85	0.90
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	15.38%		
	I-E	-10.22%		
	I-I	16.01%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	1.32	0.77
Origin Trip Ends		-0.19	1.27	0.96
Destination Trip Ends		-0.37	1.29	0.89
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	35.04%		
	I-E	38.19%		
	I-I	10.01%		

Table 7.11: Prior and Final Matrix Comparison (15:00-16:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	1.00	0.95
Origin Trip Ends		2.64	0.96	0.98
Destination Trip Ends		-0.15	0.98	0.98
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	7.57%		
	I-E	11.07%		
	I-I	-5.34%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.90	0.89
Origin Trip Ends		1.05	0.88	0.97
Destination Trip Ends		1.05	0.88	0.95
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-4.25%		
	I-E	-10.55%		
	I-I	5.41%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	1.65	0.90
Origin Trip Ends		-0.92	1.36	0.98
Destination Trip Ends		-1.40	1.42	0.92
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	33.25%		
	I-E	36.70%		
	I-I	10.14%		

Table 7.12: Prior and Final Matrix Comparison (17:00-18:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	0.91	0.96
Origin Trip Ends		4.47	0.87	0.98
Destination Trip Ends		1.21	0.89	0.97
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-5.16%		
	I-E	0.05%		
	I-I	-14.05%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.97	0.90
Origin Trip Ends		0.83	0.95	0.97
Destination Trip Ends		1.09	0.92	0.97
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-0.61%		
	I-E	-7.55%		
	I-I	17.85%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	1.24	0.91
Origin Trip Ends		0.00	1.18	0.99
Destination Trip Ends		0.09	1.16	0.91
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	18.97%		
	I-E	23.41%		
	I-I	15.38%		

7.2.10 These comparisons demonstrate that the changes brought about by matrix estimation, although not strictly within the TAG recommended ranges, are reasonable given that minimal changes were made to improve the Initial matrices prior to applying matrix estimation, and that the trip length distributions of the pre-ME and post-ME matrices are very similar.

8 SUMMARY

8.1.1 WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the impacts of Sizewell C on the surrounding highway network during the construction phase. The VISUM software platform has been used to develop a strategic highway assignment model of the Suffolk and south Norfolk area, which could demonstrate the impacts of construction period traffic for a number of alternative scenarios.

8.1.2 It is necessary to create a robust transport model that realistically represents traffic routeing and conditions on the highway network, so that valid future forecasts can be produced to assess the potential impacts of the proposed Sizewell C site and inform the development of any necessary mitigation measures.

8.1.3 VISUM transport models were initially developed, calibrated and validated to a 2012 base year. AECOM reviewed the models, on behalf of Suffolk County Council (SCC), raising concerns over the potential validity of the model outputs given that the traffic matrices were developed from 2001 Census Journey To Work (JTW) data, in the absence of the 2011 data.

8.1.4 Since the 2011 Census JTW data was released in late 2014, and additional traffic surveys were commissioned in May 2015 to provide up-to-date traffic count data in the modelled area, WSP | Parsons Brinckerhoff has been instructed to update the 2012 base year to a 2015 base year using the latest available source data to produce the initial traffic matrices.

8.1.5 This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for the following initial three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

8.1.6 An addendum to this report will subsequently be produced detailing the calibration and validation of the remaining four time periods as follows, in due course:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

8.1.7 The model has been developed in accordance with the DfT's TAG guidance as far as practicable and has been calibrated and validated to observed traffic data collected across the study area between March and June 2015, in accordance with guidance set out in TAG Unit M3.1.

8.1.8 The results reported in chapter 6 and chapter 7, which are summarised for 'Total Vehicles' in Table 8.1 to Table 8.3, demonstrate that the model shows a good level of fit with observed data. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

Table 8.1: Summary of 08:00-09:00 Model Calibration and Validation

8am-9am				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**93**	**86%**	**5**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**9**	**90%**	**0**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**13**	**88%**	**0**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**17**	**85%**	

Table 8.2. Summary of 15:00-16:00 Model Calibration and Validation

3pm-4pm				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**100**	**89%**	**2**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**8**	**80%**	**0**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**12**	**75%**	**0**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**17**	**85%**	

Table 8.3. Summary of 17:00-18:00 Model Calibration and Validation

5pm-6pm				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**104**	**92%**	**3**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**7**	**70%**	**0**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**11**	**88%**	**0**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**18**	**90%**	

8.1.9 Changes brought about by the matrix estimation process, described in section 7.2, show that the trip length distributions from the 'Prior' traffic matrices are largely maintained in the 'Final' matrices.

8.1.10 The above summary of the calibration and validation of the 2015 base models indicate that the model provides a robust representation of the existing conditions on the highway network across the study area, and as such can be used for forecasting of future scenarios in relation to the proposals for the Sizewell C site.

APPENDICES

Appendix A
Link Classifications and Zones

Table A.1: Link Classifications

Link Type	Description	Capacity per lane (PCU)	Speed (mph)
0-1	Primary road - 70mph	2010	70
2-3	Primary road - 60mph	2010	60
34, 39	Primary road - 50mph	2010	50
4, 35	Primary road - 40mph	1640	40
5-7	Primary road - 30mph	1640	30
38	A-road - 60mph	1700	60
32	A road 50mph (dual)	2100	50
33, 36	A-road - 40mph (dual)	1700	40
31, 37	A-road - 40mph	1700	40
8-9	A-road - 30mph (dual)	1700	30
10-12	A-road - 30mph	1641	30
13-14	B-road - 30mph	1700	30
15-16	Unclassified - Rural - 60mph	1700	60
17	Unclassified - Rural - 50mph	1700	50
18	Unclassified - Rural - 40mph	1700	40
19-20	Unclassified - Rural - 30mph	1700	30
29	Country lane - 60mph	1200	60
30	Country lane - 30mph	1200	30
21-22	SubUrban - 30mph	1641	30
23	SubUrban - 20mph	1641	20
24-25	Urban - 30mph	1560	30
26	Town Centre- 30mph	1000	30
27-28	Town Centre- 20mph	1000	20

Table A.2: SZC 2015 Model Zones

Zone Numbers							
External	**Internal**						
1	301	344	385	440	480	520	560
2	302	345	387	441	481	521	561
3	303	346	401	442	482	522	562
4	304	347	402	443	483	523	563
5	305	348	403	444	484	524	564
6	307	349	404	445	485	525	565
7	308	350	405	446	486	526	566
8	309	351	406	447	487	527	567
9	310	352	407	448	488	528	568
10	311	353	408	449	489	529	569
11	312	354	409	450	490	530	570
12	313	355	410	451	491	531	601
13	314	356	411	452	492	532	602
14	315	357	412	453	493	533	603
15	316	358	413	454	494	534	604
16	318	359	414	455	495	535	605
	319	360	415	456	496	536	606
	320	361	416	457	497	537	607
	321	362	417	458	498	538	608
	322	363	418	459	499	539	609
	323	364	419	460	500	540	610
	324	365	420	461	501	541	611
	325	366	421	462	502	542	612
	326	367	422	463	503	543	613
	327	369	423	464	504	544	614
	328	370	424	465	505	545	615
	329	371	425	466	506	546	616
	330	372	426	467	507	547	617
	331	373	427	468	508	548	618
	332	374	428	469	509	549	619
	334	375	429	470	510	550	620
	335	376	430	471	511	551	621
	336	377	431	472	512	552	622
	337	378	432	473	513	553	623
	338	379	434	474	514	554	624
	339	380	435	475	515	555	625
	340	381	436	476	516	556	701
	341	382	437	477	517	557	801
	342	383	438	478	518	558	1001
	343	384	439	479	519	559	

Appendix B
Suffolk Lorry Route Network

Appendix C
Traffic Survey Locations

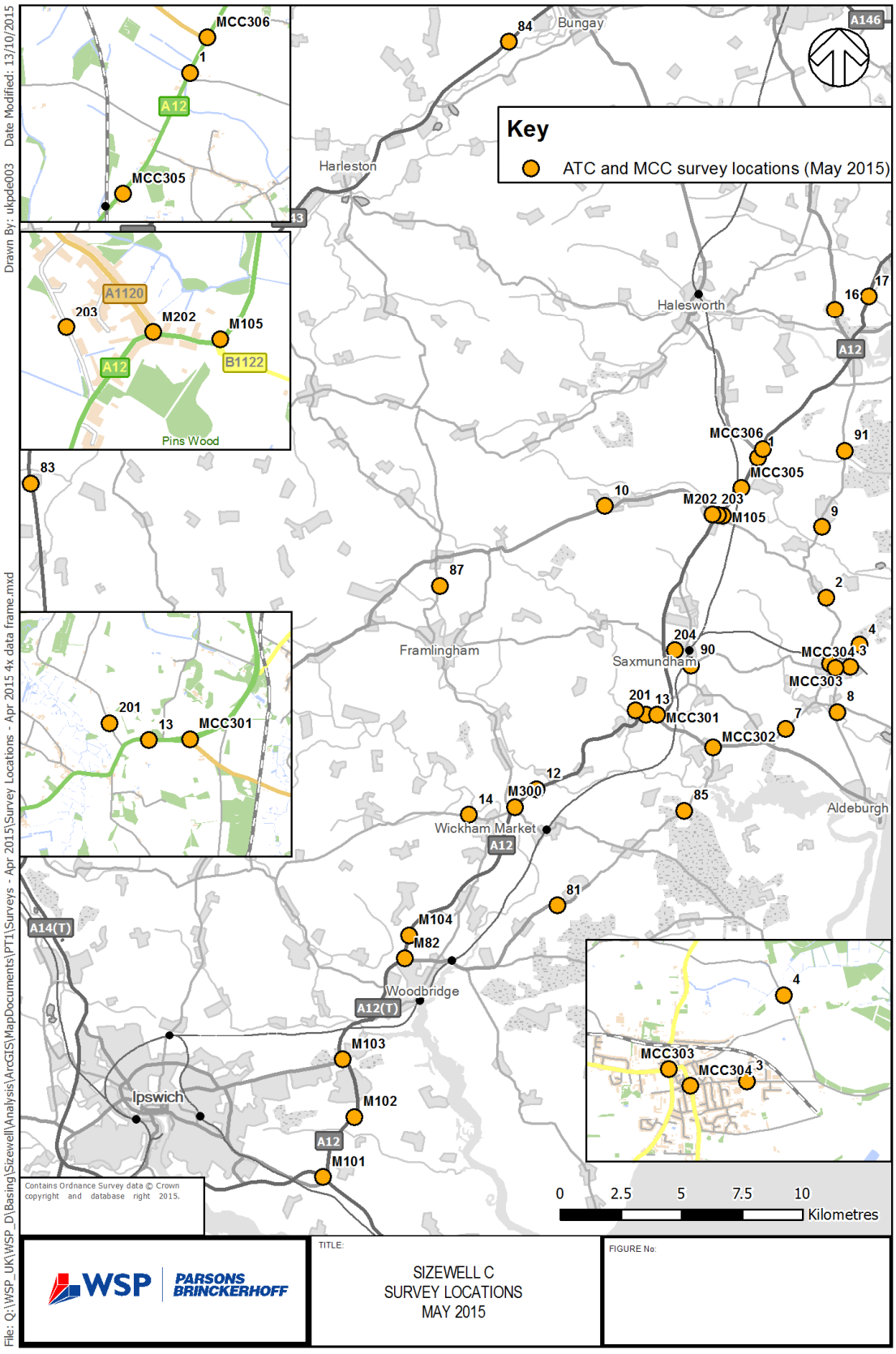


Figure C.0.1: ATC and MCC Survey locations

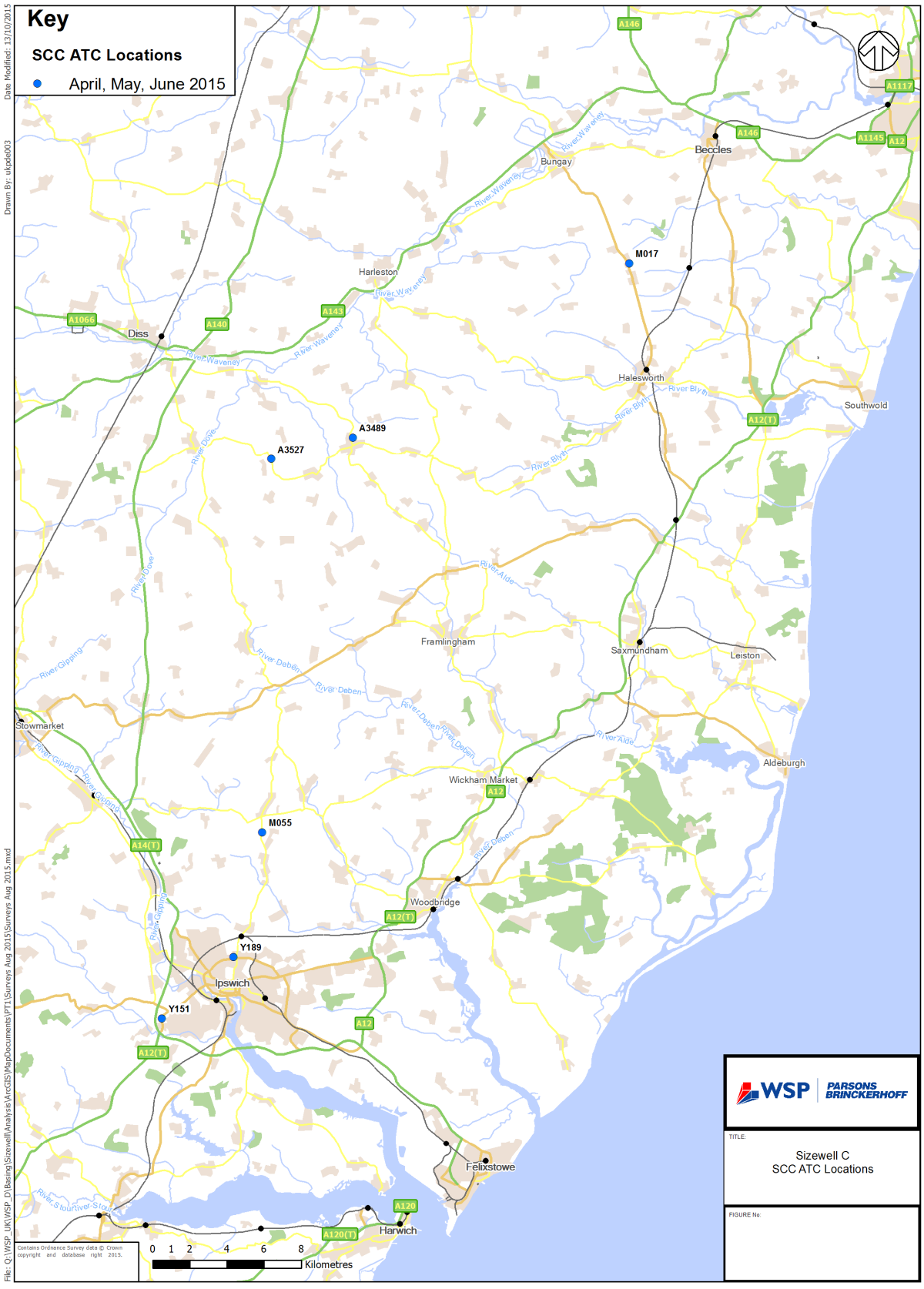


Figure C.0.2: SCC ATC locations

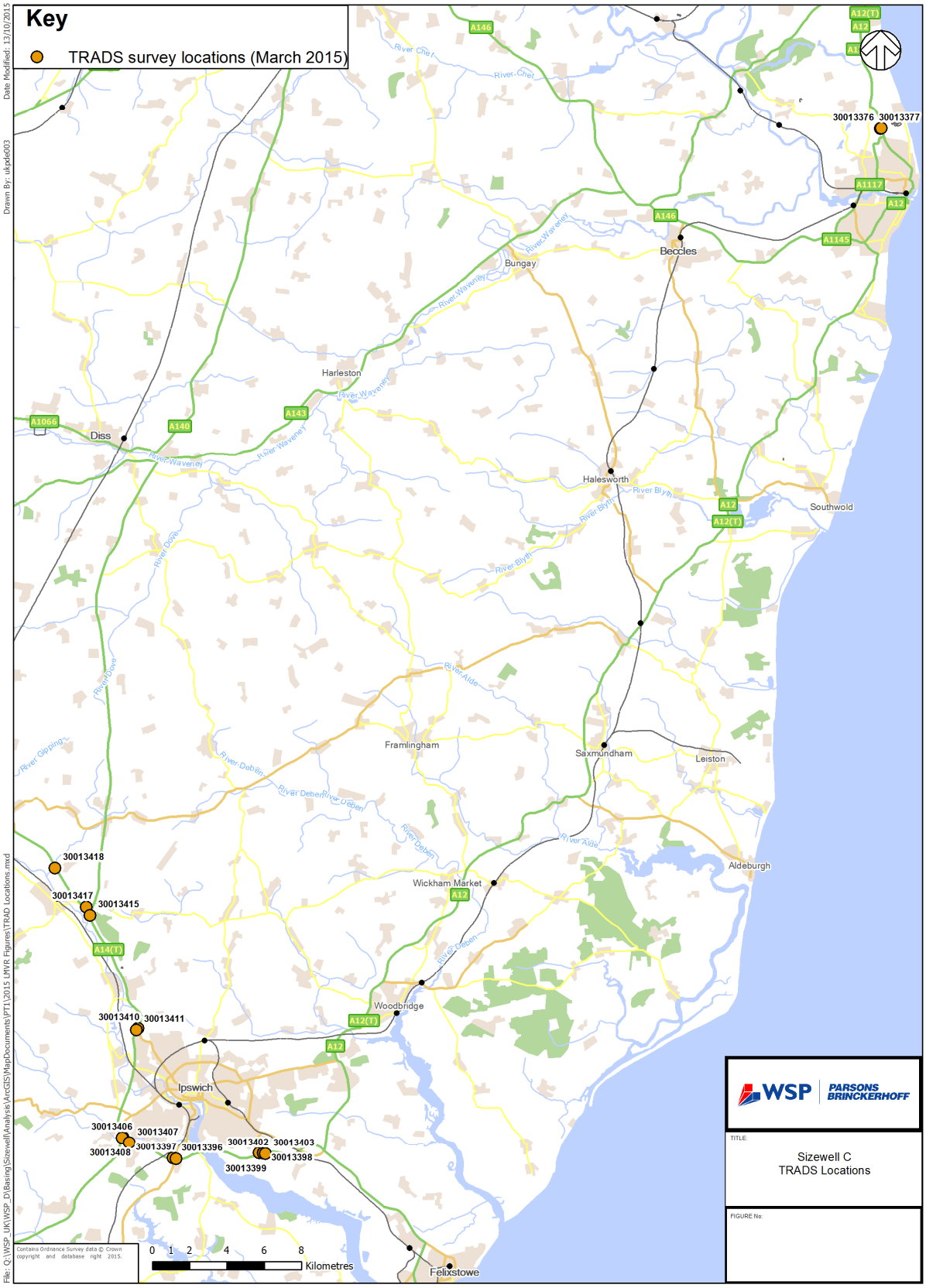


Figure C.0.3: TRADS Sites

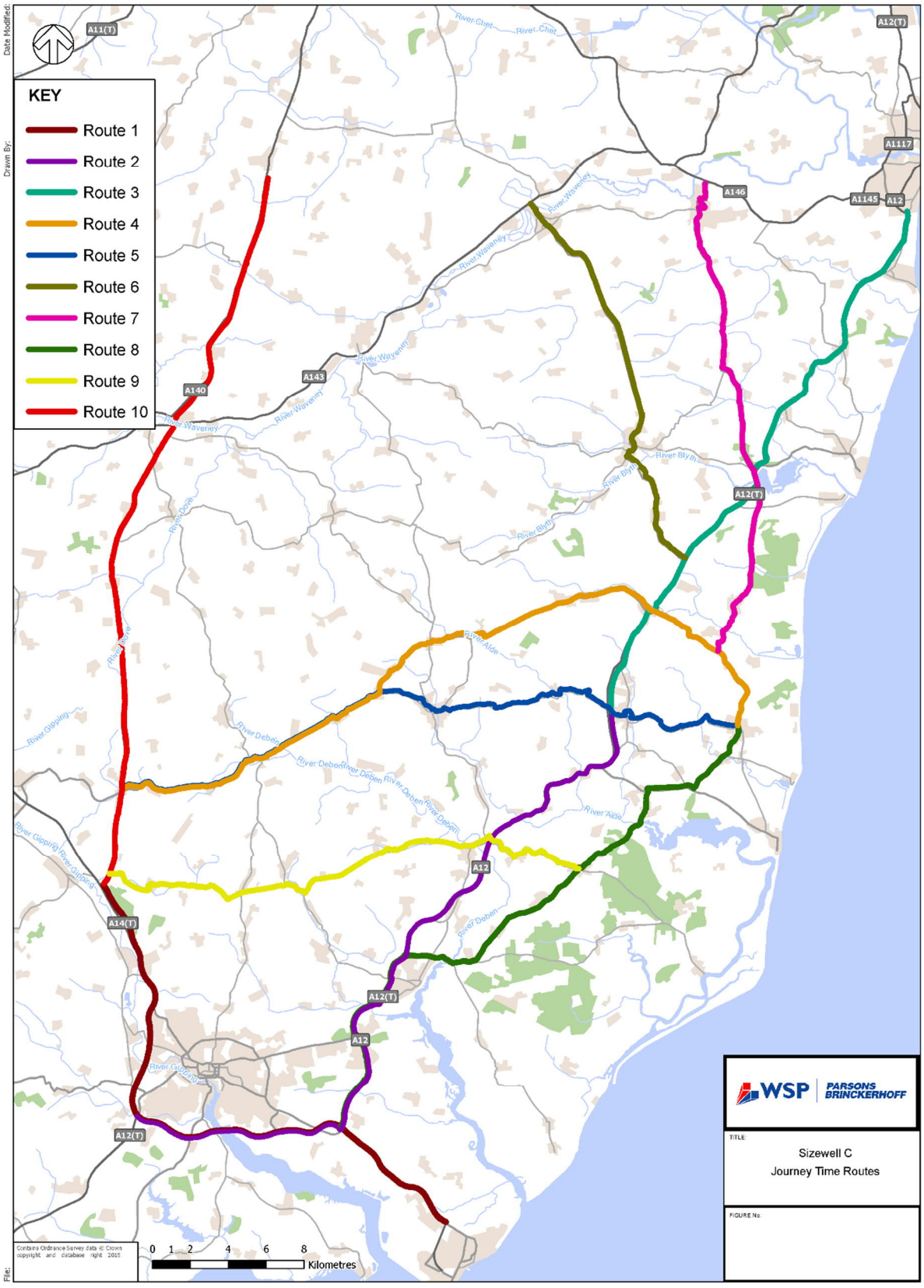


Figure C.0.4: Journey Time Validation Routes

Appendix D
Traffic Survey Data Exclusions and Balancing

Table D.1: ATC Sites Excluded from Calibration/Validation

Site	Location	Reason
83	83 (A140 near Stoke Ash)	Insufficient data
201	201 (road to Sweffling & Benhall)	Road not modelled - very low count (<20 vehicles)
203	203 (Old High Road, Yoxford)	Road not modelled - very low count (<20 vehicles)
101-1	101-1 (road to Bucklesham, north of A14)	Road not modelled - very low count (<50 vehicles)
104-1	104-1 (New Road, east of A12)	Road not modelled - very low count (<20 vehicles)
104-2	104-2 (A12, south of New Road)	Use 82-1 instead
104-3	104-3 (A12, north of Woodbridge Road)	Use 82-1 instead
104-4	104-4 (Woodbridge Road, west of A12)	Road not modelled - very low count (<40 vehicles)

Table D.2: ATC Counts Balanced

Site	Location	Issue	Count Balancing Measure
101	A14 / A12 Seven Hills Roundabout	ATC vehicle splits inconsistent with TRADS counts on A14	MCC 101 used to provide more reasonable vehicle splits on ATC
82-4	A12 Northbound, S of the A1152 Rbt	Discrepancy between junction total in/out on Car and LGV counts	Car and LGV counts increased on this arm (consistent with surrounding flow observations) to match total in/out at junction
105-2	A12, just East of the B1122 at Yoxford	Discrepancy between junction total in/out on LGV and HGV counts	LGV and HGV counts adjusted by small amounts on this arm to match total in/out at junction
202	A12 / A1120 / B1122	Discrepancy between junction total in/out on all vehicle classes	Counts increased on necessary arms to match total in/out at staggered junction

Appendix E
Calibration and Validation Screenlines

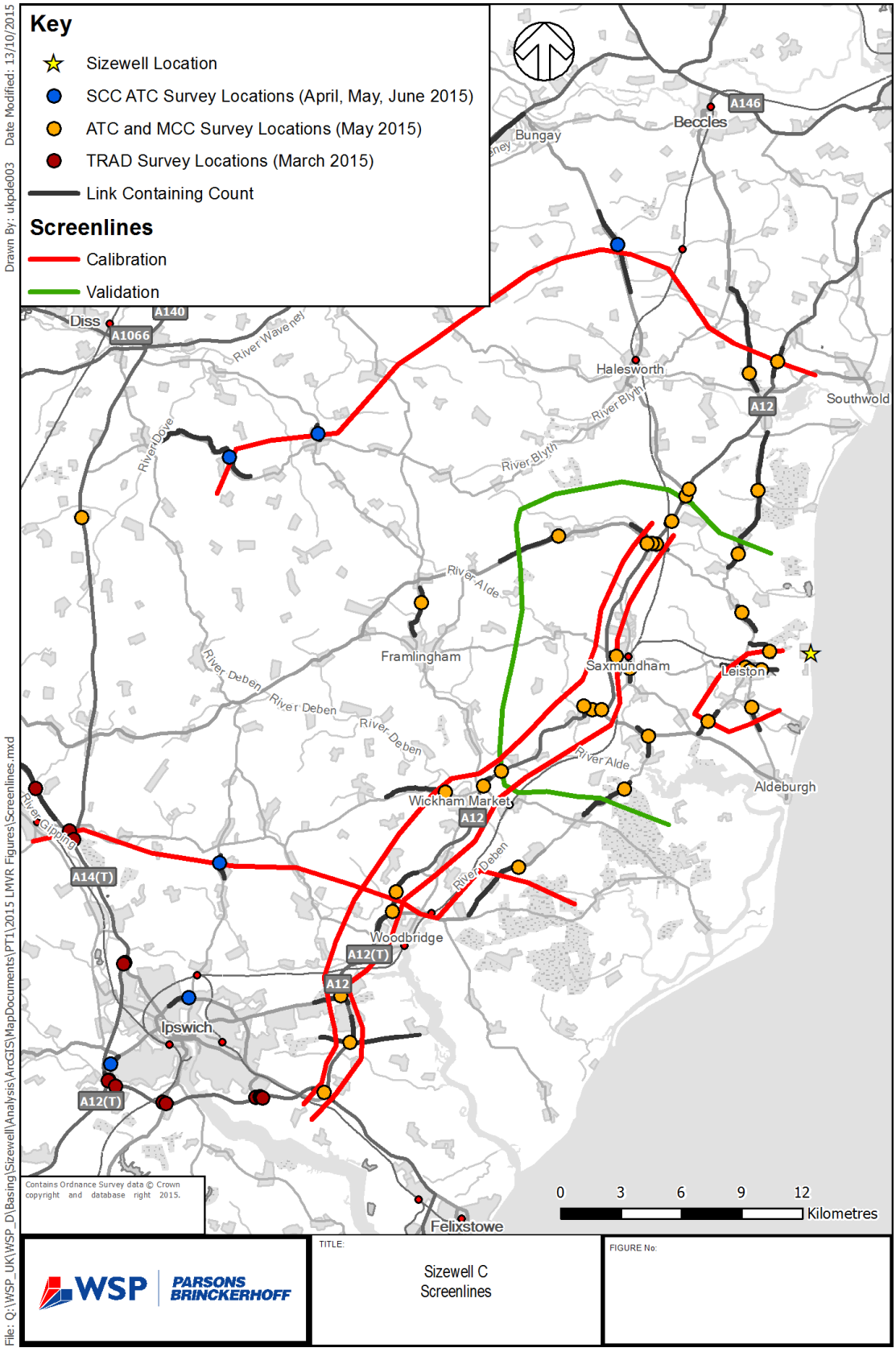


Figure E.0.5: Calibration and Validation Screenlines

Appendix F
2015 Model Link Flow Calibration Results

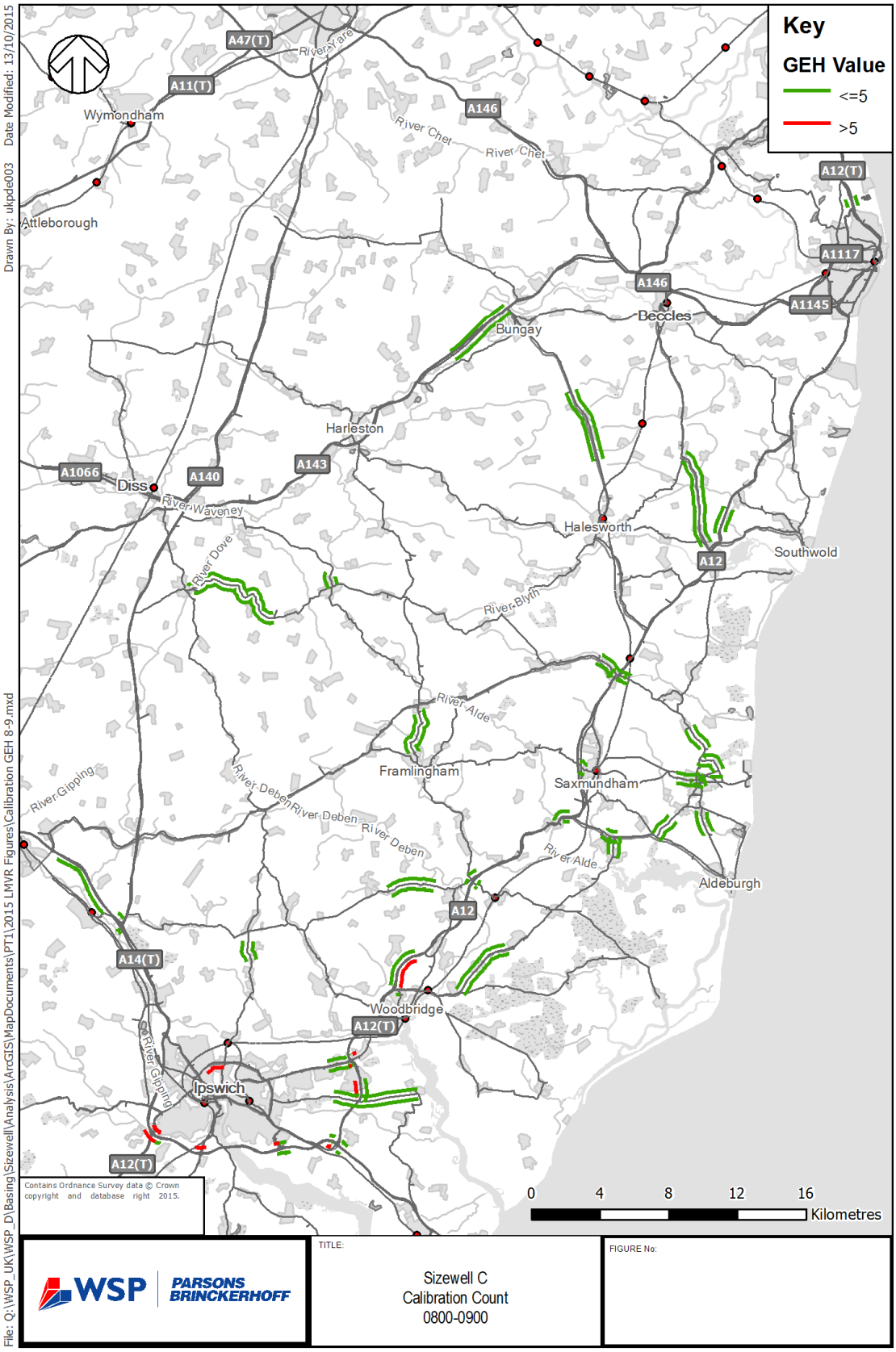


Figure F.0.6: Traffic Flow Calibration (08:00-09:00)

Table F.1: Traffic Flow Calibration – Screenlines (08:00-09:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	48	58	10	1.4	8	3	-5	2.1	4	0	-4	2.8	60	61	1	0.1
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	121	99	-22	2.1	20	10	-10	2.6	10	8	-2	0.7	151	117	-34	2.9
SCC_M017_NB	M017 (A144 Ilketshall)	NB	183	182	-1	0.1	30	22	-8	1.6	14	21	7	1.7	227	225	-2	0.1
ATC_16_NB	A145 North of Blythburgh and B1123	NB	64	69	5	0.6	15	15	0	0.0	11	13	2	0.6	90	97	7	0.7
ATC_17_NB	A12 North of Blythburgh and A1095	NB	218	222	4	0.3	36	37	1	0.2	29	25	-4	0.8	283	284	1	0.1
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	37	41	4	0.6	6	2	-4	2.0	3	0	-3	2.4	46	43	-3	0.4
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	135	118	-17	1.5	22	14	-8	1.9	11	8	-3	1.0	168	140	-28	2.3
SCC_M017_SB	M017 (A144 Ilketshall)	SB	206	209	3	0.2	33	34	1	0.2	16	13	-3	0.8	255	256	1	0.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	97	102	5	0.5	28	12	-16	3.6	10	19	9	2.4	135	133	-2	0.2
ATC_17_SB	A12 North of Blythburgh and A1095	SB	257	267	10	0.6	65	53	-12	1.6	32	30	-2	0.4	354	350	-4	0.2
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	518	508	-10	0.4	63	73	10	1.2	119	105	-14	1.3	700	686	-14	0.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	56	74	18	2.2	9	11	2	0.6	4	2	-2	1.2	69	87	18	2.0
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	626	477	-149	6.3	95	133	38	3.6	52	45	-7	1.0	773	655	-118	4.4
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	209	198	-11	0.8	18	22	4	0.9	11	9	-2	0.6	238	229	-9	0.6
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	101	149	48	4.3	16	14	-2	0.5	8	2	-6	2.7	125	165	40	3.3
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	1039	882	-157	5.1	117	74	-43	4.4	48	41	-7	1.0	1204	997	-207	6.2
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	303	309	6	0.3	37	29	-8	1.4	13	8	-5	1.5	353	346	-7	0.4
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	128	133	5	0.4	27	24	-3	0.6	10	9	-1	0.3	165	166	1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	84	94	10	1.1	21	20	-1	0.2	11	11	0	0.0	116	125	9	0.8
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	875	990	115	3.8	111	114	3	0.3	31	36	5	0.9	1017	1140	123	3.7
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	488	437	-51	2.4	53	27	-26	4.1	14	9	-5	1.5	555	473	-82	3.6
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	999	859	-140	4.6	218	168	-50	3.6	135	118	-17	1.5	1352	1145	-207	5.9
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	81	84	3	0.3	17	23	6	1.3	7	8	1	0.4	105	115	10	1.0
ATC_14_WB	B1078 West of Wickham Market	WB	125	128	3	0.3	17	23	6	1.3	6	10	4	1.4	148	161	13	1.0
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	711	759	48	1.8	45	68	23	3.1	19	31	12	2.4	775	858	83	2.9
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	325	418	93	4.8	45	34	-11	1.8	8	7	-1	0.4	378	459	81	4.0
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	1021	834	-187	6.1	137	120	-17	1.5	108	90	-18	1.8	1266	1044	-222	6.5

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	140	142	2	0.2	27	23	-4	0.8	11	7	-4	1.3	178	172	-6	0.5
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	200	191	-9	0.6	14	10	-4	1.2	7	6	-1	0.4	221	207	-14	1.0
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	589	610	21	0.9	125	75	-50	5.0	61	75	14	1.7	775	760	-15	0.5
ATC_103-1_EB	Road to Martlesham	EB	104	210	106	8.5	32	21	-11	2.1	8	0	-8	4.0	144	231	87	6.4
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	170	169	-1	0.1	44	59	15	2.1	19	21	2	0.4	233	249	16	1.0
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	519	523	4	0.2	66	81	15	1.7	23	22	-1	0.2	608	626	18	0.7
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	81	83	2	0.2	14	14	0	0.0	8	7	-1	0.4	103	104	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	120	125	5	0.5	54	36	-18	2.7	11	5	-6	2.1	185	166	-19	1.4
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	759	708	-51	1.9	90	125	35	3.4	35	56	21	3.1	884	889	5	0.2
ATC_103-1_WB	Road to Martlesham	WB	125	0	-125	15.8	51	19	-32	5.4	5	0	-5	3.2	181	19	-162	16.2
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	225	248	23	1.5	42	40	-2	0.3	21	23	2	0.4	288	311	23	1.3
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	348	432	84	4.3	45	60	15	2.1	15	20	5	1.2	408	512	104	4.8
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	150	144	-6	0.5	13	3	-10	3.5	4	2	-2	1.2	167	149	-18	1.4
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	110	123	13	1.2	22	16	-6	1.4	4	6	2	0.9	136	145	9	0.8
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	174	177	3	0.2	26	35	9	1.6	11	7	-4	1.3	211	219	8	0.5
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	87	86	-1	0.1	10	7	-3	1.0	3	1	-2	1.4	100	94	-6	0.6
Outbound																		
ATC_4_NB	Lovers Lane	NB	34	36	2	0.3	5	1	-4	2.3	5	1	-4	2.3	44	38	-6	0.9
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	115	126	11	1.0	17	20	3	0.7	5	6	1	0.4	137	152	15	1.2
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	164	162	-2	0.2	24	28	4	0.8	12	7	-5	1.6	200	197	-3	0.2
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	129	121	-8	0.7	24	13	-11	2.6	7	1	-6	3.0	160	135	-25	2.1

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	634	630	-4	0.2	109	87	-22	2.2	68	67	-1	0.1	811	784	-27	1.0
	Southbound	732	737	5	0.2	154	115	-39	3.4	72	70	-2	0.2	958	922	-36	1.2
Northern	Northbound	1409	1257	-152	4.2	185	239	54	3.7	186	161	-25	1.9	1780	1657	-123	3.0
	Southbound	1443	1340	-103	2.8	170	117	-53	4.4	69	51	-18	2.3	1682	1508	-174	4.4
West of A12	Eastbound	2574	2513	-61	1.2	430	353	-77	3.9	201	183	-18	1.3	3205	3049	-156	2.8
	Westbound	2263	2223	-40	0.8	261	268	7	0.4	148	146	-2	0.2	2672	2637	-35	0.7
East of A12	Eastbound	1722	1845	123	2.9	308	269	-39	2.3	129	131	2	0.2	2159	2245	86	1.8
	Westbound	1658	1596	-62	1.5	296	294	-2	0.1	95	111	16	1.6	2049	2001	-48	1.1
Leiston	Inbound	521	530	9	0.4	71	61	-10	1.2	22	16	-6	1.4	614	607	-7	0.3
	Outbound	442	445	3	0.1	70	62	-8	1.0	29	15	-14	3.0	541	522	-19	0.8

Table F.2: Traffic Flow Calibration – All Counts (08:00-09:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	117	118	1	0.1	✓	25	17	-8	1.7	✓	11	6	-5	1.7	✓	153	141	-12	1.0	✓
		SB	ATC_2_SB	218	224	6	0.4	✓	37	30	-7	1.2	✓	12	6	-6	2.0	✓	267	260	-7	0.4	✓
3	King Georges Avenue	EB	ATC_3_EB	184	166	-18	1.4	✓	32	0	-32	8.0	✓	6	0	-6	3.5	✓	222	166	-56	4.0	✓
		WB	ATC_3_WB	89	31	-58	7.5	✓	23	3	-20	5.5	✓	6	1	-5	2.7	✓	118	35	-83	9.5	✓
4	Lovers Lane	NB	ATC_4_NB	34	36	2	0.3	✓	5	1	-4	2.3	✓	5	1	-4	2.3	✓	44	38	-6	0.9	✓
		SB	ATC_4_SB	150	144	-6	0.5	✓	13	3	-10	3.5	✓	4	2	-2	1.2	✓	167	149	-18	1.4	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	174	177	3	0.2	✓	26	35	9	1.6	✓	11	7	-4	1.3	✓	211	219	8	0.5	✓
		SB	ATC_7_SB	164	162	-2	0.2	✓	24	28	4	0.8	✓	12	7	-5	1.6	✓	200	197	-3	0.2	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	87	86	-1	0.1	✓	10	7	-3	1.0	✓	3	1	-2	1.4	✓	100	94	-6	0.6	✓
		SB	ATC_8_SB	129	121	-8	0.7	✓	24	13	-11	2.6	✓	7	1	-6	3.0	✓	160	135	-25	2.1	✓
13	A12 East of Farnham	EB	ATC_13_EB	499	496	-3	0.1	✓	101	103	2	0.2	✓	53	48	-5	0.7	✓	653	647	-6	0.2	✓
		WB	ATC_13_WB	641	642	1	0.0	✓	68	71	3	0.4	✓	39	41	2	0.3	✓	748	754	6	0.2	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	84	94	10	1.1	✓	21	20	-1	0.2	✓	11	11	0	0.0	✓	116	125	9	0.8	✓
		WB	ATC_14_WB	125	128	3	0.3	✓	17	23	6	1.3	✓	6	10	4	1.4	✓	148	161	13	1.0	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	64	69	5	0.6	✓	15	15	0	0.0	✓	11	13	2	0.6	✓	90	97	7	0.7	✓
		SB	ATC_16_SB	97	102	5	0.5	✓	28	12	-16	3.6	✓	10	19	9	2.4	✓	135	133	-2	0.2	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	218	222	4	0.3	✓	36	37	1	0.2	✓	29	25	-4	0.8	✓	283	284	1	0.1	✓
		SB	ATC_17_SB	257	267	10	0.6	✓	65	53	-12	1.6	✓	32	30	-2	0.4	✓	354	350	-4	0.2	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	209	198	-11	0.8	✓	18	22	4	0.9	✓	11	9	-2	0.6	✓	238	229	-9	0.6	✓
		WB	ATC_81_WB	303	309	6	0.3	✓	37	29	-8	1.4	✓	13	8	-5	1.5	✓	353	346	-7	0.4	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	626	477	-149	6.3	✗	95	133	38	3.6	✓	52	45	-7	1.0	✓	773	655	-118	4.4	✓
		SB	ATC_82-1_SB	1039	882	-157	5.1	✗	117	74	-43	4.4	✓	48	41	-7	1.0	✓	1204	997	-207	6.2	✗
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	589	610	21	0.9	✓	125	75	-50	5.0	✓	61	75	14	1.7	✓	775	760	-15	0.5	✓
		WB	ATC_82-2_WB	759	708	-51	1.9	✓	90	125	35	3.4	✓	35	56	21	3.1	✓	884	889	5	0.2	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	277	283	6	0.4	✓	37	36	-1	0.2	✓	41	33	-8	1.3	✓	355	352	-3	0.2	✓
		WB	ATC_84_WB	252	259	7	0.4	✓	54	59	5	0.7	✓	33	36	3	0.5	✓	339	354	15	0.8	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	63	66	3	0.4	✓	14	19	5	1.2	✓	4	1	-3	1.9	✓	81	86	5	0.5	✓
		WB	ATC_87_WB	160	172	12	0.9	✓	19	19	0	0.0	✓	6	1	-5	2.7	✓	185	192	7	0.5	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	519	523	4	0.2	✓	66	81	15	1.7	✓	23	22	-1	0.2	✓	608	626	18	0.7	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	348	432	84	4.3	✓	45	60	15	2.1	✓	15	20	5	1.2	✓	408	512	104	4.8	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	452	388	-64	3.1	✓	63	35	-28	4.0	✓	23	13	-10	2.4	✓	538	436	-102	4.6	✓
		SB	ATC_101-4_SB	517	391	-126	5.9	✗	48	32	-16	2.5	✓	13	11	-2	0.6	✓	578	434	-144	6.4	✗
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	1021	834	-187	6.1	✗	137	120	-17	1.5	✓	108	90	-18	1.8	✓	1266	1044	-222	6.5	✗
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	999	859	-140	4.6	✓	218	168	-50	3.6	✓	135	118	-17	1.5	✓	1352	1145	-207	5.9	✗
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	488	437	-51	2.4	✓	53	27	-26	4.1	✓	14	9	-5	1.5	✓	555	473	-82	3.6	✓
		WB	ATC_102-1_WB	325	418	93	4.8	✓	45	34	-11	1.8	✓	8	7	-1	0.4	✓	378	459	81	4.0	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1327	1291	-36	1.0	✓	229	188	-41	2.8	✓	85	86	1	0.1	✓	1641	1565	-76	1.9	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1635	1320	-315	8.2	✗	151	193	42	3.2	✓	122	120	-2	0.2	✓	1908	1633	-275	6.5	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	170	169	-1	0.1	✓	44	59	15	2.1	✓	19	21	2	0.4	✓	233	249	16	1.0	✓
		WB	ATC_102-4_WB	225	248	23	1.5	✓	42	40	-2	0.3	✓	21	23	2	0.4	✓	288	311	23	1.3	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	104	210	106	8.5	✗	32	21	-11	2.1	✓	8	0	-8	4.0	✓	144	231	87	6.4	✓
		WB	ATC_103-1_WB	125	0	-125	15.8	✗	51	19	-32	5.4	✓	5	0	-5	3.2	✓	181	19	-162	16.2	✗
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	875	990	115	3.8	✓	111	114	3	0.3	✓	31	36	5	0.9	✓	1017	1140	123	3.7	✓
		WB	ATC_103-4_WB	711	759	48	1.8	✓	45	68	23	3.1	✓	19	31	12	2.4	✓	775	858	83	2.9	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1025	899	-126	4.1	✓	269	187	-82	5.4	✓	128	124	-4	0.4	✓	1422	1210	-212	5.8	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1435	1190	-245	6.8	✗	275	187	-88	5.8	✓	103	93	-10	1.0	✓	1813	1470	-343	8.5	✗
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	17	17	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	17	17	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	70	69	-1	0.1	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	70	69	-1	0.1	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	140	142	2	0.2	✓	27	23	-4	0.8	✓	11	7	-4	1.3	✓	178	172	-6	0.5	✓
		WB	ATC_105-1_WB	81	83	2	0.2	✓	14	14	0	0.0	✓	8	7	-1	0.4	✓	103	104	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	360	357	-3	0.2	✓	75	75	0	0.0	✓	44	47	3	0.4	✓	479	479	0	0.0	✓
		SB	ATC_105-2_SB	430	426	-4	0.2	✓	83	84	1	0.1	✓	50	48	-2	0.3	✓	563	558	-5	0.2	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	81	84	3	0.3	✓	17	23	6	1.3	✓	7	8	1	0.4	✓	105	115	10	1.0	✓
		SB	ATC_202-1_SB	128	133	5	0.4	✓	27	24	-3	0.6	✓	10	9	-1	0.3	✓	165	166	1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	420	404	-16	0.8	✓	90	80	-10	1.1	✓	43	42	-1	0.2	✓	553	526	-27	1.2	✓
		WB	ATC_202-2_WB	422	414	-8	0.4	✓	85	79	-6	0.7	✓	46	43	-3	0.4	✓	553	536	-17	0.7	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	303	308	5	0.3	✓	55	60	5	0.7	✓	35	34	-1	0.2	✓	393	402	9	0.5	✓
		SB	ATC_202-3_SB	362	368	6	0.3	✓	60	60	0	0.0	✓	41	36	-5	0.8	✓	463	464	1	0.0	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	200	191	-9	0.6	✓	14	10	-4	1.2	✓	7	6	-1	0.4	✓	221	207	-14	1.0	✓
		WB	ATC_204_WB	120	125	5	0.5	✓	54	36	-18	2.7	✓	11	5	-6	2.1	✓	185	166	-19	1.4	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	111	106	-5	0.5	✓	22	19	-3	0.7	✓	5	9	4	1.5	✓	138	134	-4	0.3	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	307	321	14	0.8	✓	28	27	-1	0.2	✓	13	8	-5	1.5	✓	348	356	8	0.4	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	152	152	0	0.0	✓	32	35	3	0.5	✓	12	6	-6	2.0	✓	196	193	-3	0.2	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	97	97	0	0.0	✓	22	15	-7	1.6	✓	11	10	-1	0.3	✓	130	122	-8	0.7	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	121	99	-22	2.1	✓	20	10	-10	2.6	✓	10	8	-2	0.7	✓	151	117	-34	2.9	✓
		SB	SCC_A3489_SB	135	118	-17	1.5	✓	22	14	-8	1.9	✓	11	8	-3	1.0	✓	168	140	-28	2.3	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	48	58	10	1.4	✓	8	3	-5	2.1	✓	4	0	-4	2.8	✓	60	61	1	0.1	✓
		SB	SCC_A3527_SB	37	41	4	0.6	✓	6	2	-4	2.0	✓	3	0	-3	2.4	✓	46	43	-3	0.4	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	183	182	-1	0.1	✓	30	22	-8	1.6	✓	14	21	7	1.7	✓	227	225	-2	0.1	✓
		SB	SCC_M017_SB	206	209	3	0.2	✓	33	34	1	0.2	✓	16	13	-3	0.8	✓	255	256	1	0.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	56	74	18	2.2	✓	9	11	2	0.6	✓	4	2	-2	1.2	✓	69	87	18	2.0	✓
		SB	SCC_M055_SB	101	149	48	4.3	✓	16	14	-2	0.5	✓	8	2	-6	2.7	✓	125	165	40	3.3	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	597	1073	476	16.5	✗	97	96	-1	0.1	✓	47	57	10	1.4	✓	741	1226	485	15.5	✗
		SB	SCC_Y151_SB	498	682	184	7.6	✗	81	176	95	8.4	✓	39	98	59	7.1	✓	618	956	338	12.0	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	657	453	-204	8.7	✗	107	65	-42	4.5	✓	52	33	-19	2.9	✓	816	551	-265	10.1	✗
		WB	SCC_Y189_WB	828	674	-154	5.6	✗	134	74	-60	5.9	✓	65	45	-20	2.7	✓	1027	793	-234	7.8	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	227	222	-5	0.3	✓	49	37	-12	1.8	✓	8	9	1	0.3	✓	284	268	-16	1.0	✓
		EB	MCC_302_B_EB	256	252	-4	0.3	✓	76	59	-17	2.1	✓	11	11	0	0.0	✓	343	322	-21	1.2	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	138	135	-3	0.3	✓	46	30	-16	2.6	✓	10	4	-6	2.3	✓	194	169	-25	1.9	✓
		SB	MCC_302_C_SB	116	117	1	0.1	✓	48	35	-13	2.0	✓	9	6	-3	1.1	✓	173	158	-15	1.2	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	213	209	-4	0.3	✓	77	70	-7	0.8	✓	15	15	0	0.0	✓	305	294	-11	0.6	✓
		WB	MCC_302_D_WB	192	198	6	0.4	✓	47	43	-4	0.6	✓	12	11	-1	0.3	✓	251	252	1	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	165	156	-9	0.7	✓	46	32	-14	2.2	✓	14	6	-8	2.5	✓	225	194	-31	2.1	✓
		SB	MCC_303_A_SB	194	190	-4	0.3	✓	39	29	-10	1.7	✓	10	6	-4	1.4	✓	243	225	-18	1.2	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	110	123	13	1.2	✓	22	16	-6	1.4	✓	4	6	2	0.9	✓	136	145	9	0.8	✓
		WB	MCC_303_B_WB	115	126	11	1.0	✓	17	20	3	0.7	✓	5	6	1	0.4	✓	137	152	15	1.2	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	228	223	-5	0.3	✓	27	30	3	0.6	✓	6	7	1	0.4	✓	261	260	-1	0.1	✓
		NB	MCC_303_C_NB	206	196	-10	0.7	✓	35	29	-6	1.1	✓	13	9	-4	1.2	✓	254	234	-20	1.3	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	190	160	-30	2.3	✓	21	14	-7	1.7	✓	5	5	0	0.0	✓	216	179	-37	2.6	✓
		EB	MCC_303_D_EB	178	149	-29	2.3	✓	25	14	-11	2.5	✓	1	4	3	1.9	✓	204	167	-37	2.7	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	78	101	23	2.4	✓	13	10	-3	0.9	✓	3	4	1	0.5	✓	94	115	21	2.1	✓
		NB	MCC_304_A_NB	160	135	-25	2.1	✓	21	12	-9	2.2	✓	7	5	-2	0.8	✓	188	152	-36	2.8	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	132	141	9	0.8	✓	33	27	-6	1.1	✓	7	3	-4	1.8	✓	172	171	-1	0.1	✓
		EB	MCC_304_B_EB	222	245	23	1.5	✓	33	27	-6	1.1	✓	4	2	-2	1.2	✓	259	274	15	0.9	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	152	129	-23	1.9	✓	21	5	-16	4.4	✓	5	2	-3	1.6	✓	178	136	-42	3.4	✓
		SB	MCC_304_C_SB	56	51	-5	0.7	✓	16	5	-11	3.4	✓	4	1	-3	1.9	✓	76	57	-19	2.3	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	149	133	-16	1.3	✓	27	16	-11	2.4	✓	2	0	-2	2.0	✓	178	149	-29	2.3	✓
		WB	MCC_304_D_WB	73	72	-1	0.1	✓	24	14	-10	2.3	✓	2	0	-2	2.0	✓	99	86	-13	1.4	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - betw een A1117 and B1375	NB	30013376	845	721	-124	4.4	✓	35	27	-8	1.4	✓	44	45	1	0.1	✓	924	793	-131	4.5	✓
30013377		SB	30013377	710	695	-15	0.6	✓	37	30	-7	1.2	✓	44	44	0	0.0	✓	791	769	-22	0.8	✓
30013396	A14 - J56 Through	EB	30013396	2215	1877	-338	7.5	✗	156	144	-12	1.0	✓	289	278	-11	0.7	✓	2660	2299	-361	7.2	✓
30013397	A14 - J56 EXIT	EB	30013397	513	328	-185	9.0	✗	28	36	8	1.4	✓	48	46	-2	0.3	✓	589	410	-179	8.0	✗
30013398	A14 - J57 Through	EB	30013398	1588	1472	-116	3.0	✓	129	154	25	2.1	✓	245	250	5	0.3	✓	1962	1876	-86	2.0	✓
30013399	A14 - J57 EXIT	EB	30013399	891	807	-84	2.9	✓	80	53	-27	3.3	✓	221	129	-92	7.0	✓	1192	989	-203	6.1	✗
30013402	A14 - J57 Through	WB	30013402	1475	1303	-172	4.6	✓	80	94	14	1.5	✓	322	315	-7	0.4	✓	1877	1712	-165	3.9	✓
30013403	A14 - J57 EXIT	WB	30013403	454	457	3	0.1	✓	19	37	18	3.4	✓	44	25	-19	3.2	✓	517	519	2	0.1	✓
30013406	A14 - J55 Through	WB	30013406	1058	870	-188	6.1	✗	85	67	-18	2.1	✓	269	238	-31	1.9	✓	1412	1175	-237	6.6	✗
30013407	A14 - J55 EXIT	WB	30013407	926	989	63	2.0	✓	74	75	1	0.1	✓	182	161	-21	1.6	✓	1182	1225	43	1.2	✓
30013408	A14 - J55 Through	EB	30013408	1473	1224	-249	6.8	✗	97	72	-25	2.7	✓	185	142	-43	3.4	✓	1755	1438	-317	7.9	✗
30013410	A14 - J53 Through	NB	30013410	1451	1178	-273	7.5	✗	126	110	-16	1.5	✓	419	311	-108	5.7	✗	1996	1599	-397	9.4	✗
30013411	A14 - J53 EXIT	NB	30013411	463	270	-193	10.1	✗	32	19	-13	2.6	✓	21	4	-17	4.8	✓	516	293	-223	11.1	✗
30013415	A14 - J51 EXIT	NB	30013415	518	508	-10	0.4	✓	63	73	10	1.2	✓	119	105	-14	1.3	✓	700	686	-14	0.5	✓
30013417	A14 - J51 EXIT	SB	30013417	227	240	13	0.9	✓	21	30	9	1.8	✓	35	34	-1	0.2	✓	283	304	21	1.2	✓
30013418	A14 - betw een J51 and J50	NB	30013418	1540	1501	-39	1.0	✓	130	151	21	1.8	✓	356	313	-43	2.4	✓	2026	1965	-61	1.4	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	3	95	84%
LGV	114	0	107	100%
HGV	114	0	111	99%
Total Vehs	114	5	93	86%

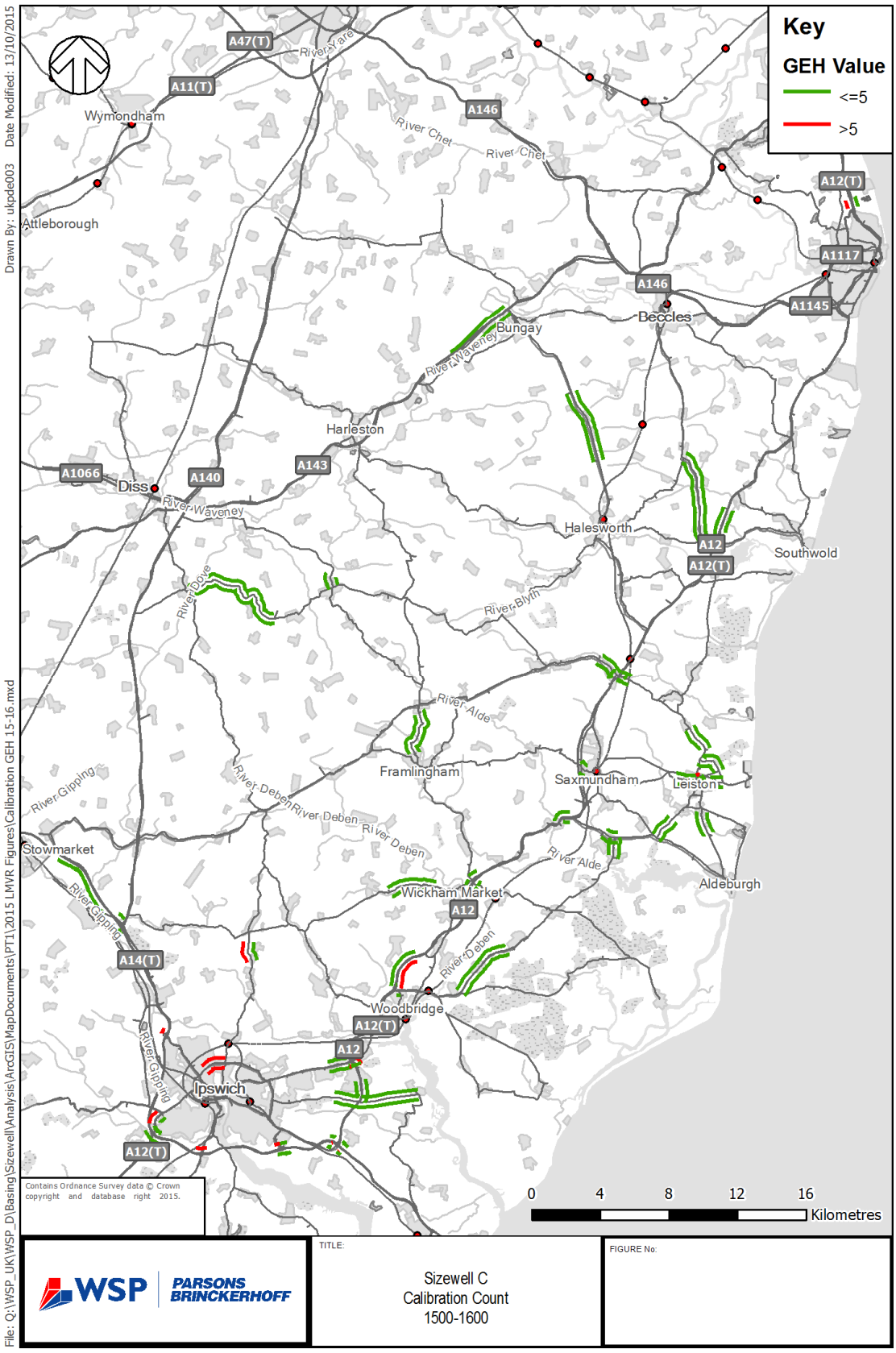


Figure F.0.7: Traffic Flow Calibration (15:00-16:00)

Table F.3: Traffic Flow Calibration – Screenlines (15:00-16:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	41	48	7	1.0	6	2	-4	2.0	3	0	-3	2.4	50	50	0	0.0
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	121	87	-34	3.3	18	5	-13	3.8	8	6	-2	0.8	147	98	-49	4.4
SCC_M017_NB	M017 (A144 Ilketshall)	NB	191	194	3	0.2	29	29	0	0.0	13	20	7	1.7	233	243	10	0.6
ATC_16_NB	A145 North of Blythburgh and B1123	NB	118	98	-20	1.9	24	12	-12	2.8	18	13	-5	1.3	160	123	-37	3.1
ATC_17_NB	A12 North of Blythburgh and A1095	NB	337	363	26	1.4	34	32	-2	0.3	17	17	0	0.0	388	412	24	1.2
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	50	61	11	1.5	7	1	-6	3.0	3	0	-3	2.4	60	62	2	0.3
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	124	89	-35	3.4	19	6	-13	3.7	9	6	-3	1.1	152	101	-51	4.5
SCC_M017_SB	M017 (A144 Ilketshall)	SB	176	181	5	0.4	26	18	-8	1.7	12	15	3	0.8	214	214	0	0.0
ATC_16_SB	A145 North of Blythburgh and B1123	SB	59	73	14	1.7	16	11	-5	1.4	6	13	7	2.3	81	97	16	1.7
ATC_17_SB	A12 North of Blythburgh and A1095	SB	228	240	12	0.8	41	44	3	0.5	16	21	5	1.2	285	305	20	1.2
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	591	574	-17	0.7	64	92	28	3.2	114	104	-10	1.0	769	770	1	0.0
SCC_M055_NB	M055 (B1077 Swilland)	NB	45	90	45	5.5	7	4	-3	1.3	3	1	-2	1.4	55	95	40	4.6
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	903	767	-136	4.7	68	96	28	3.1	44	38	-6	0.9	1015	901	-114	3.7
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	263	261	-2	0.1	15	16	1	0.3	13	8	-5	1.5	291	285	-6	0.4
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	71	82	11	1.3	11	8	-3	1.0	5	1	-4	2.3	87	91	4	0.4
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	760	673	-87	3.3	118	113	-5	0.5	45	42	-3	0.5	923	828	-95	3.2
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	181	189	8	0.6	28	19	-9	1.9	11	8	-3	1.0	220	216	-4	0.3
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	120	119	-1	0.1	19	20	1	0.2	12	4	-8	2.8	151	143	-8	0.7
ATC_14_EB	B1078 West of Wickham Market	EB	100	122	22	2.1	20	17	-3	0.7	5	4	-1	0.5	125	143	18	1.6
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	681	692	11	0.4	101	107	6	0.6	28	26	-2	0.4	810	825	15	0.5
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	367	417	50	2.5	51	20	-31	5.2	16	6	-10	3.0	434	443	9	0.4
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	927	786	-141	4.8	167	114	-53	4.5	99	97	-2	0.2	1193	997	-196	5.9
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	145	144	-1	0.1	21	14	-7	1.7	10	4	-6	2.3	176	162	-14	1.1
ATC_14_WB	B1078 West of Wickham Market	WB	86	104	18	1.8	20	21	1	0.2	5	6	1	0.4	111	131	20	1.8
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	805	917	112	3.8	88	113	25	2.5	29	34	5	0.9	922	1064	142	4.5
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	442	445	3	0.1	97	59	-38	4.3	22	15	-7	1.6	561	519	-42	1.8
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	829	765	-64	2.3	185	150	-35	2.7	100	100	0	0.0	1114	1015	-99	3.0

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	96	102	6	0.6	16	16	0	0.0	6	5	-1	0.4	118	123	5	0.5
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	172	170	-2	0.2	12	8	-4	1.3	6	3	-3	1.4	190	181	-9	0.7
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	641	674	33	1.3	41	66	25	3.4	33	46	13	2.1	715	786	71	2.6
ATC_103-1_EB	Road to Martlesham	EB	105	119	14	1.3	36	32	-4	0.7	6	0	-6	3.5	147	151	4	0.3
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	178	200	22	1.6	41	57	16	2.3	23	20	-3	0.6	242	277	35	2.2
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	391	491	100	4.8	39	77	38	5.0	21	24	3	0.6	451	592	141	6.2
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	130	128	-2	0.2	19	17	-2	0.5	10	5	-5	1.8	159	150	-9	0.7
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	120	125	5	0.5	47	17	-30	5.3	7	4	-3	1.3	174	146	-28	2.2
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	646	702	56	2.2	78	104	26	2.7	31	58	27	4.0	755	864	109	3.8
ATC_103-1_WB	Road to Martlesham	WB	154	211	57	4.2	62	31	-31	4.5	5	0	-5	3.2	221	242	21	1.4
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	190	216	26	1.8	49	55	6	0.8	23	25	2	0.4	262	296	34	2.0
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	439	516	77	3.5	66	86	20	2.3	28	28	0	0.0	533	630	97	4.0
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	46	47	1	0.1	7	1	-6	3.0	3	1	-2	1.4	56	49	-7	1.0
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	169	171	2	0.2	22	12	-10	2.4	6	5	-1	0.4	197	188	-9	0.6
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	161	174	13	1.0	28	23	-5	1.0	9	5	-4	1.5	198	202	4	0.3
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	122	111	-11	1.0	15	7	-8	2.4	6	1	-5	2.7	143	119	-24	2.1
Outbound																		
ATC_4_NB	Lovers Lane	NB	98	100	2	0.2	12	2	-10	3.8	3	2	-1	0.6	113	104	-9	0.9
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	127	141	14	1.2	13	11	-2	0.6	3	5	2	1.0	143	157	14	1.1
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	190	196	6	0.4	23	27	4	0.8	9	7	-2	0.7	222	230	8	0.5
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	117	100	-17	1.6	17	6	-11	3.2	5	1	-4	2.3	139	107	-32	2.9

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	808	790	-18	0.6	111	80	-31	3.2	59	56	-3	0.4	978	926	-52	1.7
	Southbound	637	644	7	0.3	109	80	-29	3.0	46	55	9	1.3	792	779	-13	0.5
Northern	Northbound	1802	1692	-110	2.6	154	208	54	4.0	174	151	-23	1.8	2130	2051	-79	1.7
	Southbound	1012	944	-68	2.2	157	140	-17	1.4	61	51	-10	1.3	1230	1135	-95	2.8
West of A12	Eastbound	2195	2136	-59	1.3	358	278	-80	4.5	160	137	-23	1.9	2713	2551	-162	3.2
	Westbound	2307	2375	68	1.4	411	357	-54	2.8	166	159	-7	0.5	2884	2891	7	0.1
East of A12	Eastbound	1583	1756	173	4.2	185	256	71	4.8	95	98	3	0.3	1863	2110	247	5.5
	Westbound	1679	1898	219	5.2	321	310	-11	0.6	104	120	16	1.5	2104	2328	224	4.8
Leiston	Inbound	498	503	5	0.2	72	43	-29	3.8	24	12	-12	2.8	594	558	-36	1.5
	Outbound	532	537	5	0.2	65	46	-19	2.6	20	15	-5	1.2	617	598	-19	0.8

Table F.4: Traffic Flow Calibration – All Counts (15:00-16:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	NB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	190	194	4	0.3	✓	32	20	-12	2.4	✓	17	5	-12	3.6	✓	239	219	-20	1.3	✓
		SB	ATC_2_SB	158	153	-5	0.4	✓	24	20	-4	0.9	✓	8	4	-4	1.6	✓	190	177	-13	1.0	✓
3	King Georges Avenue	EB	ATC_3_EB	107	79	-28	2.9	✓	19	1	-18	5.7	✓	5	0	-5	3.2	✓	131	80	-51	5.0	✓
		WB	ATC_3_WB	156	141	-15	1.2	✓	20	1	-19	5.9	✓	6	0	-6	3.5	✓	182	142	-40	3.1	✓
4	Lovers Lane	NB	ATC_4_NB	98	100	2	0.2	✓	12	2	-10	3.8	✓	3	2	-1	0.6	✓	113	104	-9	0.9	✓
		SB	ATC_4_SB	46	47	1	0.1	✓	7	1	-6	3.0	✓	3	1	-2	1.4	✓	56	49	-7	1.0	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	161	174	13	1.0	✓	28	23	-5	1.0	✓	9	5	-4	1.5	✓	198	202	4	0.3	✓
		SB	ATC_7_SB	190	196	6	0.4	✓	23	27	4	0.8	✓	9	7	-2	0.7	✓	222	230	8	0.5	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	122	111	-11	1.0	✓	15	7	-8	2.4	✓	6	1	-5	2.7	✓	143	119	-24	2.1	✓
		SB	ATC_8_SB	117	100	-17	1.6	✓	17	6	-11	3.2	✓	5	1	-4	2.3	✓	139	107	-32	2.9	✓
13	A12 East of Farnham	EB	ATC_13_EB	720	705	-15	0.6	✓	85	77	-8	0.9	✓	39	36	-3	0.5	✓	844	818	-26	0.9	✓
		WB	ATC_13_WB	612	605	-7	0.3	✓	72	86	14	1.6	✓	43	42	-1	0.2	✓	727	733	6	0.2	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	100	122	22	2.1	✓	20	17	-3	0.7	✓	5	4	-1	0.5	✓	125	143	18	1.6	✓
		WB	ATC_14_WB	86	104	18	1.8	✓	20	21	1	0.2	✓	5	6	1	0.4	✓	111	131	20	1.8	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	118	98	-20	1.9	✓	24	12	-12	2.8	✓	18	13	-5	1.3	✓	160	123	-37	3.1	✓
		SB	ATC_16_SB	59	73	14	1.7	✓	16	11	-5	1.4	✓	6	13	7	2.3	✓	81	97	16	1.7	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	337	363	26	1.4	✓	34	32	-2	0.3	✓	17	17	0	0.0	✓	388	412	24	1.2	✓
		SB	ATC_17_SB	228	240	12	0.8	✓	41	44	3	0.5	✓	16	21	5	1.2	✓	285	305	20	1.2	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	263	261	-2	0.1	✓	15	16	1	0.3	✓	13	8	-5	1.5	✓	291	285	-6	0.4	✓
		WB	ATC_81_WB	181	189	8	0.6	✓	28	19	-9	1.9	✓	11	8	-3	1.0	✓	220	216	-4	0.3	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	903	767	-136	4.7	✓	68	96	28	3.1	✓	44	38	-6	0.9	✓	1015	901	-114	3.7	✓
		SB	ATC_82-1_SB	760	673	-87	3.3	✓	118	113	-5	0.5	✓	45	42	-3	0.5	✓	923	828	-95	3.2	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	641	674	33	1.3	✓	41	66	25	3.4	✓	33	46	13	2.1	✓	715	786	71	2.6	✓
		WB	ATC_82-2_WB	646	702	56	2.2	✓	78	104	26	2.7	✓	31	58	27	4.0	✓	755	864	109	3.8	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	312	332	20	1.1	✓	36	34	-2	0.3	✓	29	23	-6	1.2	✓	377	389	12	0.6	✓
		WB	ATC_84_WB	251	268	17	1.1	✓	45	47	2	0.3	✓	37	39	2	0.3	✓	333	354	21	1.1	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	90	98	8	0.8	✓	9	14	5	1.5	✓	6	1	-5	2.7	✓	105	113	8	0.8	✓
		WB	ATC_87_WB	63	72	9	1.1	✓	6	19	13	3.7	✓	1	0	-1	1.4	✓	70	91	21	2.3	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	391	491	100	4.8	✓	39	77	38	5.0	✓	21	24	3	0.6	✓	451	592	141	6.2	✗
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	439	516	77	3.5	✓	66	86	20	2.3	✓	28	28	0	0.0	✓	533	630	97	4.0	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	434	377	-57	2.8	✓	25	4	-21	5.5	✓	23	13	-10	2.4	✓	482	394	-88	4.2	✓
		SB	ATC_101-4_SB	409	295	-114	6.1	✗	54	20	-34	5.6	✓	24	16	-8	1.8	✓	487	331	-156	7.7	✗
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	829	765	-64	2.3	✓	185	150	-35	2.7	✓	100	100	0	0.0	✓	1114	1015	-99	3.0	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	927	786	-141	4.8	✓	167	114	-53	4.5	✓	99	97	-2	0.2	✓	1193	997	-196	5.9	✗
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	367	417	50	2.5	✓	51	20	-31	5.2	✓	16	6	-10	3.0	✓	434	443	9	0.4	✓
		WB	ATC_102-1_WB	442	445	3	0.1	✓	97	59	-38	4.3	✓	22	15	-7	1.6	✓	561	519	-42	1.8	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1312	1300	-12	0.3	✓	262	241	-21	1.3	✓	103	106	3	0.3	✓	1677	1647	-30	0.7	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1481	1415	-66	1.7	✓	111	158	47	4.1	✓	102	100	-2	0.2	✓	1694	1673	-21	0.5	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	178	200	22	1.6	✓	41	57	16	2.3	✓	23	20	-3	0.6	✓	242	277	35	2.2	✓
		WB	ATC_102-4_WB	190	216	26	1.8	✓	49	55	6	0.8	✓	23	25	2	0.4	✓	262	296	34	2.0	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	105	119	14	1.3	✓	36	32	-4	0.7	✓	6	0	-6	3.5	✓	147	151	4	0.3	✓
		WB	ATC_103-1_WB	154	211	57	4.2	✓	62	31	-31	4.5	✓	5	0	-5	3.2	✓	221	242	21	1.4	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	681	692	11	0.4	✓	101	107	6	0.6	✓	28	26	-2	0.4	✓	810	825	15	0.5	✓
		WB	ATC_103-4_WB	805	917	112	3.8	✓	88	113	25	2.5	✓	29	34	5	0.9	✓	922	1064	142	4.5	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1371	1212	-159	4.4	✓	263	157	-106	7.3	✗	101	101	0	0.0	✓	1735	1470	-265	6.6	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1248	1046	-202	6.0	✗	253	228	-25	1.6	✓	118	110	-8	0.7	✓	1619	1384	-235	6.1	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	27	27	0	0.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	29	27	-2	0.4	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	9	9	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	9	9	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	EB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	96	102	6	0.6	✓	16	16	0	0.0	✓	6	5	-1	0.4	✓	118	123	5	0.5	✓
		WB	ATC_105-1_WB	130	128	-2	0.2	✓	19	17	-2	0.5	✓	10	5	-5	1.8	✓	159	150	-9	0.7	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	539	508	-31	1.4	✓	70	71	1	0.1	✓	39	35	-4	0.7	✓	648	614	-34	1.4	✓
		SB	ATC_105-2_SB	411	399	-12	0.6	✓	72	69	-3	0.4	✓	37	37	0	0.0	✓	520	505	-15	0.7	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	145	144	-1	0.1	✓	21	14	-7	1.7	✓	10	4	-6	2.3	✓	176	162	-14	1.1	✓
		SB	ATC_202-1_SB	120	119	-1	0.1	✓	19	20	1	0.2	✓	12	4	-8	2.8	✓	151	143	-8	0.7	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	554	515	-39	1.7	✓	87	69	-18	2.0	✓	31	30	-1	0.2	✓	672	614	-58	2.3	✓
		WB	ATC_202-2_WB	459	433	-26	1.2	✓	92	68	-24	2.7	✓	33	33	0	0.0	✓	584	534	-50	2.1	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	455	461	6	0.3	✓	57	54	-3	0.4	✓	31	26	-5	0.9	✓	543	541	-2	0.1	✓
		SB	ATC_202-3_SB	335	354	19	1.0	✓	60	59	-1	0.1	✓	35	30	-5	0.9	✓	430	443	13	0.6	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	172	170	-2	0.2	✓	12	8	-4	1.3	✓	6	3	-3	1.4	✓	190	181	-9	0.7	✓
		WB	ATC_204_WB	120	125	5	0.5	✓	47	17	-30	5.3	✓	7	4	-3	1.3	✓	174	146	-28	2.2	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	109	98	-11	1.1	✓	18	13	-5	1.3	✓	13	6	-7	2.3	✓	140	117	-23	2.0	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	168	179	11	0.8	✓	27	32	5	0.9	✓	7	4	-3	1.3	✓	202	215	13	0.9	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	160	170	10	0.8	✓	22	24	2	0.4	✓	12	4	-8	2.8	✓	194	198	4	0.3	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	114	112	-2	0.2	✓	18	10	-8	2.1	✓	7	3	-4	1.8	✓	139	125	-14	1.2	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	121	87	-34	3.3	✓	18	5	-13	3.8	✓	8	6	-2	0.8	✓	147	98	-49	4.4	✓
		SB	SCC_A3489_SB	124	89	-35	3.4	✓	19	6	-13	3.7	✓	9	6	-3	1.1	✓	152	101	-51	4.5	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	41	48	7	1.0	✓	6	2	-4	2.0	✓	3	0	-3	2.4	✓	50	50	0	0.0	✓
		SB	SCC_A3527_SB	50	61	11	1.5	✓	7	1	-6	3.0	✓	3	0	-3	2.4	✓	60	62	2	0.3	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	191	194	3	0.2	✓	29	29	0	0.0	✓	13	20	7	1.7	✓	233	243	10	0.6	✓
		SB	SCC_M017_SB	176	181	5	0.4	✓	26	18	-8	1.7	✓	12	15	3	0.8	✓	214	214	0	0.0	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	45	90	45	5.5	✓	7	4	-3	1.3	✓	3	1	-2	1.4	✓	55	95	40	4.6	✓
		SB	SCC_M055_SB	71	82	11	1.3	✓	11	8	-3	1.0	✓	5	1	-4	2.3	✓	87	91	4	0.4	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	576	751	175	6.8	✗	87	80	-7	0.8	✓	39	48	9	1.4	✓	702	879	177	6.3	✗
		SB	SCC_Y151_SB	642	525	-117	4.8	✓	97	127	30	2.8	✓	44	118	74	8.2	✓	783	770	-13	0.5	✓
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	654	438	-216	9.2	✗	99	67	-32	3.5	✓	45	39	-6	0.9	✓	798	544	-254	9.8	✗
		WB	SCC_Y189_WB	746	505	-241	9.6	✗	112	64	-48	5.1	✓	51	60	9	1.2	✓	909	629	-280	10.1	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	299	280	-19	1.1	✓	60	36	-24	3.5	✓	7	8	1	0.4	✓	366	324	-42	2.3	✓
		EB	MCC_302_B_EB	302	280	-22	1.3	✓	46	29	-17	2.8	✓	6	6	0	0.0	✓	354	315	-39	2.1	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	175	159	-16	1.2	✓	35	9	-26	5.5	✓	5	2	-3	1.6	✓	215	170	-45	3.2	✓
		SB	MCC_302_C_SB	176	163	-13	1.0	✓	29	10	-19	4.3	✓	3	2	-1	0.6	✓	208	175	-33	2.4	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	269	257	-12	0.7	✓	40	32	-8	1.3	✓	6	7	1	0.4	✓	315	296	-19	1.1	✓
		WB	MCC_302_D_WB	254	253	-1	0.1	✓	55	38	-17	2.5	✓	8	8	0	0.0	✓	317	299	-18	1.0	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	221	198	-23	1.6	✓	32	19	-13	2.6	✓	9	5	-4	1.5	✓	262	222	-40	2.6	✓
		SB	MCC_303_A_SB	217	199	-18	1.2	✓	35	20	-15	2.9	✓	18	7	-11	3.1	✓	270	226	-44	2.8	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	169	171	2	0.2	✓	22	12	-10	2.4	✓	6	5	-1	0.4	✓	197	188	-9	0.6	✓
		WB	MCC_303_B_WB	127	141	14	1.2	✓	13	11	-2	0.6	✓	3	5	2	1.0	✓	143	157	14	1.1	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	244	231	-13	0.8	✓	31	24	-7	1.3	✓	11	8	-3	1.0	✓	286	263	-23	1.4	✓
		NB	MCC_303_C_NB	211	211	0	0.0	✓	28	23	-5	1.0	✓	3	6	3	1.4	✓	242	240	-2	0.1	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	136	111	-25	2.2	✓	16	8	-8	2.3	✓	2	4	2	1.2	✓	154	123	-31	2.6	✓
		EB	MCC_303_D_EB	215	160	-55	4.0	✓	25	9	-16	3.9	✓	4	4	0	0.0	✓	244	173	-71	4.9	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	82	101	19	2.0	✓	15	6	-9	2.8	✓	4	4	0	0.0	✓	101	111	10	1.0	✓
		NB	MCC_304_A_NB	134	125	-9	0.8	✓	19	7	-12	3.3	✓	6	4	-2	0.9	✓	159	136	-23	1.9	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	224	254	30	1.9	✓	31	17	-14	2.9	✓	3	3	0	0.0	✓	258	274	16	1.0	✓
		EB	MCC_304_B_EB	172	202	30	2.2	✓	25	15	-10	2.2	✓	3	2	-1	0.6	✓	200	219	19	1.3	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	136	98	-38	3.5	✓	18	2	-16	5.1	✓	5	2	-3	1.6	✓	159	102	-57	5.0	✓
		SB	MCC_304_C_SB	91	71	-20	2.2	✓	16	2	-14	4.7	✓	2	1	-1	0.8	✓	109	74	-35	3.7	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	104	84	-20	2.1	✓	14	8	-6	1.8	✓	2	0	-2	2.0	✓	120	92	-28	2.7	✓
		WB	MCC_304_D_WB	149	140	-9	0.7	✓	18	10	-8	2.1	✓	3	0	-3	2.4	✓	170	150	-20	1.6	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	0	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - betw een A1117 and B1375	NB	30013376	716	568	-148	5.8	✗	39	27	-12	2.1	✓	41	42	1	0.2	✓	796	637	-159	5.9	✗
30013377		SB	30013377	724	631	-93	3.6	✓	39	31	-8	1.4	✓	39	43	4	0.6	✓	802	705	-97	3.5	✓
30013396	A14 - J56 Through	EB	30013396	1316	1167	-149	4.2	✓	126	121	-5	0.4	✓	545	463	-82	3.7	✓	1987	1751	-236	5.5	✓
30013397	A14 - J56 EXIT	EB	30013397	376	232	-144	8.3	✗	29	17	-12	2.5	✓	46	38	-8	1.2	✓	451	287	-164	8.5	✗
30013398	A14 - J57 Through	EB	30013398	1045	990	-55	1.7	✓	95	123	28	2.7	✓	480	412	-68	3.2	✓	1620	1525	-95	2.4	✓
30013399	A14 - J57 EXIT	EB	30013399	623	544	-79	3.3	✓	69	46	-23	3.0	✓	128	79	-49	4.8	✓	820	669	-151	5.5	✗
30013402	A14 - J57 Through	WB	30013402	1135	1216	81	2.4	✓	103	146	43	3.9	✓	315	314	-1	0.1	✓	1553	1676	123	3.1	✓
30013403	A14 - J57 EXIT	WB	30013403	240	249	9	0.6	✓	17	36	19	3.7	✓	43	22	-21	3.7	✓	300	307	7	0.4	✓
30013406	A14 - J55 Through	WB	30013406	800	714	-86	3.1	✓	82	65	-17	2.0	✓	282	242	-40	2.5	✓	1164	1021	-143	4.3	✓
30013407	A14 - J55 EXIT	WB	30013407	971	936	-35	1.1	✓	75	96	21	2.3	✓	157	139	-18	1.5	✓	1203	1171	-32	0.9	✓
30013408	A14 - J55 Through	EB	30013408	736	698	-38	1.4	✓	74	54	-20	2.5	✓	324	265	-59	3.4	✓	1134	1017	-117	3.6	✓
30013410	A14 - J53 Through	NB	30013410	1228	970	-258	7.8	✗	130	141	11	0.9	✓	447	296	-151	7.8	✗	1805	1407	-398	9.9	✗
30013411	A14 - J53 EXIT	NB	30013411	297	160	-137	9.1	✗	29	11	-18	4.0	✓	29	5	-24	5.8	✓	355	176	-179	11.0	✗
30013415	A14 - J51 EXIT	NB	30013415	591	574	-17	0.7	✓	64	92	28	3.2	✓	114	104	-10	1.0	✓	769	770	1	0.0	✓
30013417	A14 - J51 EXIT	SB	30013417	167	136	-31	2.5	✓	20	25	5	1.1	✓	31	18	-13	2.6	✓	218	179	-39	2.8	✓
30013418	A14 - betw een J51 and J50	NB	30013418	1082	999	-83	2.6	✓	107	115	8	0.8	✓	337	296	-41	2.3	✓	1526	1410	-116	3.0	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	0	104	92%
LGV	114	0	104	99%
HGV	114	0	111	99%
Total Vehs	114	2	100	89%

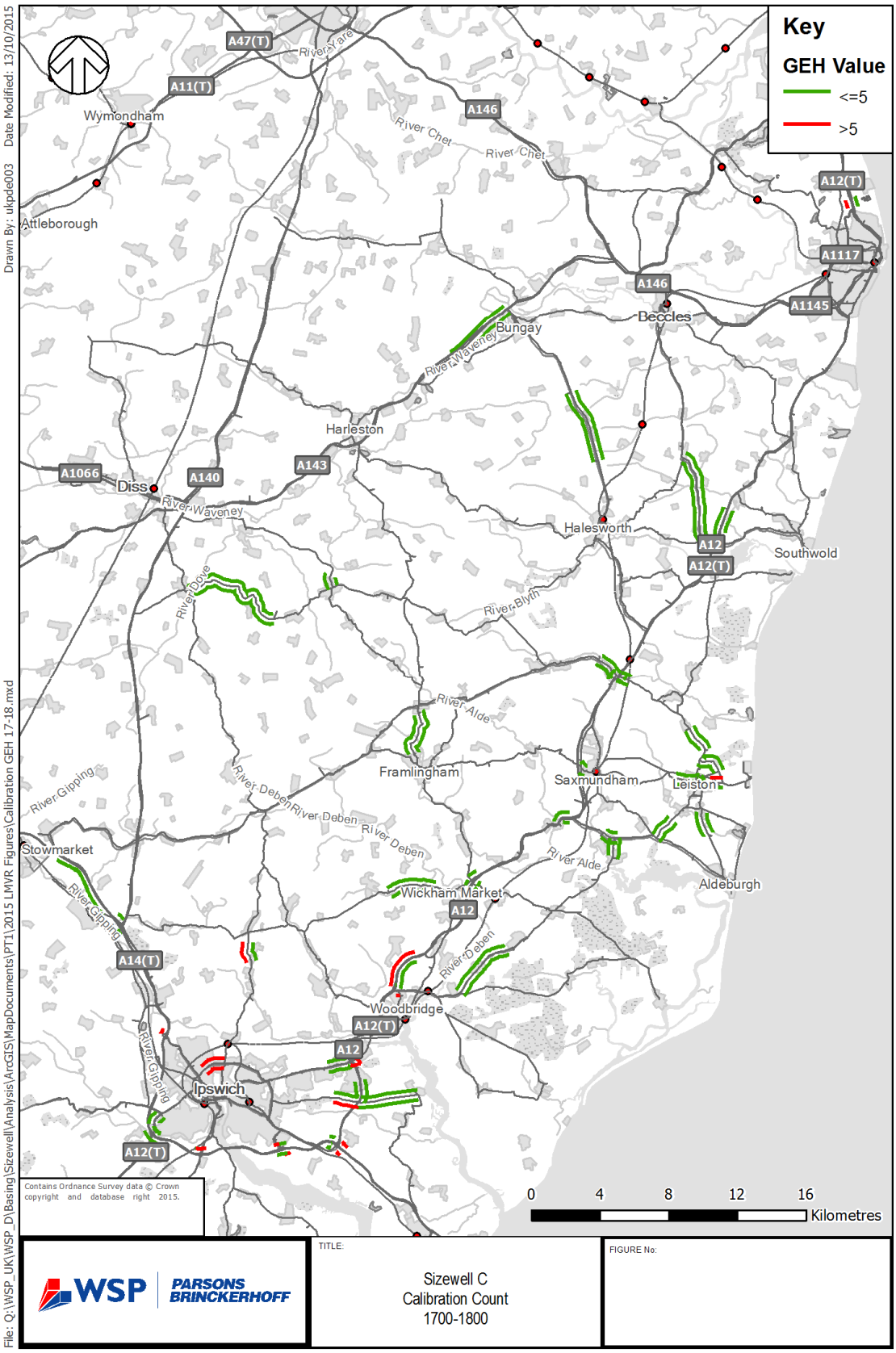


Figure F.0.8: Traffic Flow Calibration (17:00-18:00)

Table F.5: Traffic Flow Calibration – Screenlines (17:00-18:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	47	50	3	0.4	6	1	-5	2.7	2	0	-2	2.0	55	51	-4	0.5
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	116	102	-14	1.3	14	4	-10	3.3	4	3	-1	0.5	134	109	-25	2.3
SCC_M017_NB	M017 (A144 Ilketshall)	NB	229	222	-7	0.5	27	19	-8	1.7	8	9	1	0.3	264	250	-14	0.9
ATC_16_NB	A145 North of Blythburgh and B1123	NB	115	90	-25	2.5	19	6	-13	3.7	5	4	-1	0.5	139	100	-39	3.6
ATC_17_NB	A12 North of Blythburgh and A1095	NB	419	443	24	1.2	43	35	-8	1.3	14	11	-3	0.8	476	489	13	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	63	69	6	0.7	7	1	-6	3.0	2	0	-2	2.0	72	70	-2	0.2
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	123	110	-13	1.2	15	5	-10	3.2	4	4	0	0.0	142	119	-23	2.0
SCC_M017_SB	M017 (A144 Ilketshall)	SB	175	170	-5	0.4	21	10	-11	2.8	6	5	-1	0.4	202	185	-17	1.2
ATC_16_SB	A145 North of Blythburgh and B1123	SB	77	79	2	0.2	24	7	-17	4.3	4	8	4	1.6	105	94	-11	1.1
ATC_17_SB	A12 North of Blythburgh and A1095	SB	214	211	-3	0.2	29	33	4	0.7	10	11	1	0.3	253	255	2	0.1
Southern Screenline																		
Northbound																		
30013415	A14 - J51EXIT	NB	803	723	-80	2.9	44	57	13	1.8	82	72	-10	1.1	929	852	-77	2.6
SCC_M055_NB	M055 (B1077 Swilland)	NB	37	72	35	4.7	4	7	3	1.3	1	1	0	0.0	42	80	38	4.9
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	953	723	-230	7.9	52	82	30	3.7	38	22	-16	2.9	1043	827	-216	7.1
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	326	316	-10	0.6	17	10	-7	1.9	10	7	-3	1.0	353	333	-20	1.1
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	42	56	14	2.0	5	7	2	0.8	2	1	-1	0.8	49	64	15	2.0
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	737	667	-70	2.6	81	71	-10	1.1	34	29	-5	0.9	852	767	-85	3.0
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	198	201	3	0.2	19	14	-5	1.2	6	10	4	1.4	223	225	2	0.1
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	123	127	4	0.4	23	21	-2	0.4	4	3	-1	0.5	150	151	1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	131	128	-3	0.3	22	17	-5	1.1	6	3	-3	1.4	159	148	-11	0.9
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	694	780	86	3.2	67	79	12	1.4	16	20	4	0.9	777	879	102	3.5
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	400	379	-21	1.1	38	13	-25	5.0	6	4	-2	0.9	444	396	-48	2.3
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	1356	1254	-102	2.8	159	115	-44	3.8	57	51	-6	0.8	1572	1420	-152	3.9
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	133	140	7	0.6	19	17	-2	0.5	4	2	-2	1.2	156	159	3	0.2
ATC_14_WB	B1078 West of Wickham Market	WB	90	101	11	1.1	13	17	4	1.0	5	4	-1	0.5	108	122	14	1.3
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	1023	1188	165	5.0	82	102	20	2.1	22	20	-2	0.4	1127	1310	183	5.2
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	679	603	-76	3.0	144	88	-56	5.2	17	8	-9	2.5	840	699	-141	5.1
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	968	968	0	0.0	118	106	-12	1.1	59	65	6	0.8	1145	1139	-6	0.2

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	103	102	-1	0.1	13	7	-6	1.9	3	2	-1	0.6	119	111	-8	0.7
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	168	165	-3	0.2	14	9	-5	1.5	2	2	0	0.0	184	176	-8	0.6
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	662	741	79	3.0	35	54	19	2.8	12	36	24	4.9	709	831	122	4.4
ATC_103-1_EB	Road to Martlesham	EB	134	130	-4	0.3	37	25	-12	2.2	2	0	-2	2.0	173	155	-18	1.4
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	182	193	11	0.8	35	49	14	2.2	10	7	-3	1.0	227	249	22	1.4
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	520	576	56	2.4	31	65	34	4.9	15	18	3	0.7	566	659	93	3.8
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	110	113	3	0.3	11	11	0	0.0	3	1	-2	1.4	124	125	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	194	192	-2	0.1	18	7	-11	3.1	2	2	0	0.0	214	201	-13	0.9
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	623	930	307	11.0	40	89	49	6.1	16	51	35	6.0	679	1070	391	13.2
ATC_103-1_WB	Road to Martlesham	WB	170	89	-81	7.1	73	34	-39	5.3	6	0	-6	3.5	249	123	-126	9.2
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	206	224	18	1.2	36	64	28	4.0	9	12	3	0.9	251	300	49	3.0
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	539	640	101	4.2	51	81	30	3.7	15	12	-3	0.8	605	733	128	4.9
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	32	32	0	0.0	2	0	-2	2.0	2	0	-2	2.0	36	32	-4	0.7
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	155	158	3	0.2	19	12	-7	1.8	0	3	3	2.4	174	173	-1	0.1
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	202	206	4	0.3	18	17	-1	0.2	6	3	-3	1.4	226	226	0	0.0
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	118	116	-2	0.2	12	4	-8	2.8	3	0	-3	2.4	133	120	-13	1.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	59	66	7	0.9	4	1	-3	1.9	1	0	-1	1.4	64	67	3	0.4
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	146	154	8	0.7	25	11	-14	3.3	0	3	3	2.4	171	168	-3	0.2
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	166	172	6	0.5	14	14	0	0.0	3	3	0	0.0	183	189	6	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	118	110	-8	0.7	11	4	-7	2.6	2	0	-2	2.0	131	114	-17	1.5

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	926	907	-19	0.6	109	65	-44	4.7	33	27	-6	1.1	1068	999	-69	2.1
	Southbound	652	639	-13	0.5	96	56	-40	4.6	26	28	2	0.4	774	723	-51	1.9
Northern	Northbound	2119	1834	-285	6.4	117	156	39	3.3	131	102	-29	2.7	2367	2092	-275	5.8
	Southbound	977	924	-53	1.7	105	92	-13	1.3	42	40	-2	0.3	1124	1056	-68	2.1
West of A12	Eastbound	2704	2668	-36	0.7	309	245	-64	3.8	89	81	-8	0.9	3102	2994	-108	2.0
	Westbound	2893	3000	107	2.0	376	330	-46	2.4	107	99	-8	0.8	3376	3429	53	0.9
East of A12	Eastbound	1769	1907	138	3.2	165	209	44	3.2	44	65	21	2.8	1978	2181	203	4.5
	Westbound	1842	2188	346	7.7	229	286	57	3.6	51	78	27	3.4	2122	2552	430	8.9
Leiston	Inbound	507	512	5	0.2	51	33	-18	2.8	11	6	-5	1.7	569	551	-18	0.8
	Outbound	489	502	13	0.6	54	30	-24	3.7	6	6	0	0.0	549	538	-11	0.5

Table F.6: Traffic Flow Calibration – All Counts (17:00-18:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	154	162	8	0.6	✓	27	11	-16	3.7	✓	3	1	-2	1.4	✓	184	174	-10	0.7	✓
		SB	ATC_2_SB	126	128	2	0.2	✓	20	8	-12	3.2	✓	5	1	-4	2.3	✓	151	137	-14	1.2	✓
3	King Georges Avenue	EB	ATC_3_EB	86	66	-20	2.3	✓	6	1	-5	2.7	✓	1	0	-1	1.4	✓	93	67	-26	2.9	✓
		WB	ATC_3_WB	145	123	-22	1.9	✓	15	0	-15	5.5	✓	1	0	-1	1.4	✓	161	123	-38	3.2	✓
4	Lovers Lane	NB	ATC_4_NB	59	66	7	0.9	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	64	67	3	0.4	✓
		SB	ATC_4_SB	32	32	0	0.0	✓	2	0	-2	2.0	✓	2	0	-2	2.0	✓	36	32	-4	0.7	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	202	206	4	0.3	✓	18	17	-1	0.2	✓	6	3	-3	1.4	✓	226	226	0	0.0	✓
		SB	ATC_7_SB	166	172	6	0.5	✓	14	14	0	0.0	✓	3	3	0	0.0	✓	183	189	6	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	118	116	-2	0.2	✓	12	4	-8	2.8	✓	3	0	-3	2.4	✓	133	120	-13	1.2	✓
		SB	ATC_8_SB	118	110	-8	0.7	✓	11	4	-7	2.6	✓	2	0	-2	2.0	✓	131	114	-17	1.5	✓
13	A12 East of Farnham	EB	ATC_13_EB	763	743	-20	0.7	✓	74	70	-4	0.5	✓	22	22	0	0.0	✓	859	835	-24	0.8	✓
		WB	ATC_13_WB	569	575	6	0.3	✓	40	54	14	2.0	✓	18	25	7	1.5	✓	627	654	27	1.1	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	131	128	-3	0.3	✓	22	17	-5	1.1	✓	6	3	-3	1.4	✓	159	148	-11	0.9	✓
		WB	ATC_14_WB	90	101	11	1.1	✓	13	17	4	1.0	✓	5	4	-1	0.5	✓	108	122	14	1.3	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	115	90	-25	2.5	✓	19	6	-13	3.7	✓	5	4	-1	0.5	✓	139	100	-39	3.6	✓
		SB	ATC_16_SB	77	79	2	0.2	✓	24	7	-17	4.3	✓	4	8	4	1.6	✓	105	94	-11	1.1	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	419	443	24	1.2	✓	43	35	-8	1.3	✓	14	11	-3	0.8	✓	476	489	13	0.6	✓
		SB	ATC_17_SB	214	211	-3	0.2	✓	29	33	4	0.7	✓	10	11	1	0.3	✓	253	255	2	0.1	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	326	316	-10	0.6	✓	17	10	-7	1.9	✓	10	7	-3	1.0	✓	353	333	-20	1.1	✓
		WB	ATC_81_WB	198	201	3	0.2	✓	19	14	-5	1.2	✓	6	10	4	1.4	✓	223	225	2	0.1	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	953	723	-230	7.9	✗	52	82	30	3.7	✓	38	22	-16	2.9	✓	1043	827	-216	7.1	✗
		SB	ATC_82-1_SB	737	667	-70	2.6	✓	81	71	-10	1.1	✓	34	29	-5	0.9	✓	852	767	-85	3.0	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	662	741	79	3.0	✓	35	54	19	2.8	✓	12	36	24	4.9	✓	709	831	122	4.4	✓
		WB	ATC_82-2_WB	623	930	307	11.0	✗	40	89	49	6.1	✓	16	51	35	6.0	✓	679	1070	391	13.2	✗
84	A143 North of Beccles to Diss	EB	ATC_84_EB	476	470	-6	0.3	✓	39	38	-1	0.2	✓	11	5	-6	2.1	✓	526	513	-13	0.6	✓
		WB	ATC_84_WB	281	303	22	1.3	✓	44	47	3	0.4	✓	23	24	1	0.2	✓	348	374	26	1.4	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	138	141	3	0.3	✓	11	8	-3	1.0	✓	7	0	-7	3.7	✓	156	149	-7	0.6	✓
		WB	ATC_87_WB	71	78	7	0.8	✓	5	8	3	1.2	✓	2	0	-2	2.0	✓	78	86	8	0.9	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	520	576	56	2.4	✓	31	65	34	4.9	✓	15	18	3	0.7	✓	566	659	93	3.8	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	539	640	101	4.2	✓	51	81	30	3.7	✓	15	12	-3	0.8	✓	605	733	128	4.9	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	494	484	-10	0.5	✓	30	7	-23	5.3	✓	13	10	-3	0.9	✓	537	501	-36	1.6	✓
		SB	ATC_101-4_SB	572	571	-1	0.0	✓	57	18	-39	6.4	✓	13	8	-5	1.5	✓	642	597	-45	1.8	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	968	968	0	0.0	✓	118	106	-12	1.1	✓	59	65	6	0.8	✓	1145	1139	-6	0.2	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	1356	1254	-102	2.8	✓	159	115	-44	3.8	✓	57	51	-6	0.8	✓	1572	1420	-152	3.9	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	400	379	-21	1.1	✓	38	13	-25	5.0	✓	6	4	-2	0.9	✓	444	396	-48	2.3	✓
		WB	ATC_102-1_WB	679	603	-76	3.0	✓	144	88	-56	5.2	✓	17	8	-9	2.5	✓	840	699	-141	5.1	✗
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1484	1509	25	0.6	✓	213	184	-29	2.1	✓	71	70	-1	0.1	✓	1768	1763	-5	0.1	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1640	1579	-61	1.5	✓	91	140	49	4.6	✓	57	52	-5	0.7	✓	1788	1771	-17	0.4	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	182	193	11	0.8	✓	35	49	14	2.2	✓	10	7	-3	1.0	✓	227	249	22	1.4	✓
		WB	ATC_102-4_WB	206	224	18	1.2	✓	36	64	28	4.0	✓	9	12	3	0.9	✓	251	300	49	3.0	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	134	130	-4	0.3	✓	37	25	-12	2.2	✓	2	0	-2	2.0	✓	173	155	-18	1.4	✓
		WB	ATC_103-1_WB	170	89	-81	7.1	✓	73	34	-39	5.3	✓	6	0	-6	3.5	✓	249	123	-126	9.2	✗
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	694	780	86	3.2	✓	67	79	12	1.4	✓	16	20	4	0.9	✓	777	879	102	3.5	✓
		WB	ATC_103-4_WB	1023	1188	165	5.0	✓	82	102	20	2.1	✓	22	20	-2	0.4	✓	1127	1310	183	5.2	✗
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1467	1480	13	0.3	✓	248	140	-108	7.8	✗	53	54	1	0.1	✓	1768	1674	-94	2.3	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1273	1153	-120	3.4	✓	193	173	-20	1.5	✓	71	70	-1	0.1	✓	1537	1396	-141	3.7	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	41	41	0	0.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	43	41	-2	0.3	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	103	102	-1	0.1	✓	13	7	-6	1.9	✓	3	2	-1	0.6	✓	119	111	-8	0.7	✓
		WB	ATC_105-1_WB	110	113	3	0.3	✓	11	11	0	0.0	✓	3	1	-2	1.4	✓	124	125	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	573	568	-5	0.2	✓	66	61	-5	0.6	✓	18	16	-2	0.5	✓	657	645	-12	0.5	✓
		SB	ATC_105-2_SB	411	404	-7	0.3	✓	61	51	-10	1.3	✓	20	19	-1	0.2	✓	492	474	-18	0.8	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	133	140	7	0.6	✓	19	17	-2	0.5	✓	4	2	-2	1.2	✓	156	159	3	0.2	✓
		SB	ATC_202-1_SB	123	127	4	0.4	✓	23	21	-2	0.4	✓	4	3	-1	0.5	✓	150	151	1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	596	582	-14	0.6	✓	80	60	-20	2.4	✓	16	16	0	0.0	✓	692	658	-34	1.3	✓
		WB	ATC_202-2_WB	443	429	-14	0.7	✓	73	53	-20	2.5	✓	18	17	-1	0.2	✓	534	499	-35	1.5	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	499	508	9	0.4	✓	47	42	-5	0.7	✓	14	13	-1	0.3	✓	560	563	3	0.1	✓
		SB	ATC_202-3_SB	336	342	6	0.3	✓	44	39	-5	0.8	✓	16	15	-1	0.3	✓	396	396	0	0.0	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	168	165	-3	0.2	✓	14	9	-5	1.5	✓	2	2	0	0.0	✓	184	176	-8	0.6	✓
		WB	ATC_204_WB	194	192	-2	0.1	✓	18	7	-11	3.1	✓	2	2	0	0.0	✓	214	201	-13	0.9	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	96	96	0	0.0	✓	13	10	-3	0.9	✓	4	3	-1	0.5	✓	113	109	-4	0.4	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	179	193	14	1.0	✓	18	19	1	0.2	✓	10	5	-5	1.8	✓	207	217	10	0.7	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	189	191	2	0.1	✓	20	15	-5	1.2	✓	6	2	-4	2.0	✓	215	208	-7	0.5	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	115	112	-3	0.3	✓	15	10	-5	1.4	✓	4	3	-1	0.5	✓	134	125	-9	0.8	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	116	102	-14	1.3	✓	14	4	-10	3.3	✓	4	3	-1	0.5	✓	134	109	-25	2.3	✓
		SB	SCC_A3489_SB	123	110	-13	1.2	✓	15	5	-10	3.2	✓	4	4	0	0.0	✓	142	119	-23	2.0	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	47	50	3	0.4	✓	6	1	-5	2.7	✓	2	0	-2	2.0	✓	55	51	-4	0.5	✓
		SB	SCC_A3527_SB	63	69	6	0.7	✓	7	1	-6	3.0	✓	2	0	-2	2.0	✓	72	70	-2	0.2	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	229	222	-7	0.5	✓	27	19	-8	1.7	✓	8	9	1	0.3	✓	264	250	-14	0.9	✓
		SB	SCC_M017_SB	175	170	-5	0.4	✓	21	10	-11	2.8	✓	6	5	-1	0.4	✓	202	185	-17	1.2	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	37	72	35	4.7	✓	4	7	3	1.3	✓	1	1	0	0.0	✓	42	80	38	4.9	✓
		SB	SCC_M055_SB	42	56	14	2.0	✓	5	7	2	0.8	✓	2	1	-1	0.8	✓	49	64	15	2.0	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	596	720	124	4.8	✓	71	69	-2	0.2	✓	21	28	7	1.4	✓	688	817	129	4.7	✓
		SB	SCC_Y151_SB	656	732	76	2.9	✓	78	125	47	4.7	✓	24	51	27	4.4	✓	758	908	150	5.2	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	742	432	-310	12.8	✗	88	46	-42	5.1	✓	27	14	-13	2.9	✓	857	492	-365	14.1	✗
		WB	SCC_Y189_WB	783	586	-197	7.5	✗	93	69	-24	2.7	✓	28	20	-8	1.6	✓	904	675	-229	8.2	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	298	289	-9	0.5	✓	32	18	-14	2.8	✓	3	4	1	0.5	✓	333	311	-22	1.2	✓
		EB	MCC_302_B_EB	317	306	-11	0.6	✓	29	22	-7	1.4	✓	3	4	1	0.5	✓	349	332	-17	0.9	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	180	176	-4	0.3	✓	30	9	-21	4.8	✓	4	1	-3	1.9	✓	214	186	-28	2.0	✓
		SB	MCC_302_C_SB	178	175	-3	0.2	✓	19	6	-13	3.7	✓	4	1	-3	1.9	✓	201	182	-19	1.4	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	276	270	-6	0.4	✓	19	24	5	1.1	✓	1	5	4	2.3	✓	296	299	3	0.2	✓
		WB	MCC_302_D_WB	251	254	3	0.2	✓	27	22	-5	1.0	✓	1	5	4	2.3	✓	279	281	2	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	204	236	32	2.2	✓	30	17	-13	2.7	✓	1	1	0	0.0	✓	235	254	19	1.2	✓
		SB	MCC_303_A_SB	177	169	-8	0.6	✓	23	10	-13	3.2	✓	0	1	1	1.4	✓	200	180	-20	1.5	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	155	158	3	0.2	✓	19	12	-7	1.8	✓	0	3	3	2.4	✓	174	173	-1	0.1	✓
		WB	MCC_303_B_WB	146	154	8	0.7	✓	25	11	-14	3.3	✓	0	3	3	2.4	✓	171	168	-3	0.2	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	208	205	-3	0.2	✓	21	13	-8	1.9	✓	0	3	3	2.4	✓	229	221	-8	0.5	✓
		NB	MCC_303_C_NB	227	222	-5	0.3	✓	22	17	-5	1.1	✓	1	2	1	0.8	✓	250	241	-9	0.6	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	168	107	-61	5.2	✓	19	2	-17	5.2	✓	0	2	2	2.0	✓	187	111	-76	6.2	✓
		EB	MCC_303_D_EB	185	162	-23	1.7	✓	19	6	-13	3.7	✓	0	2	2	2.0	✓	204	170	-34	2.5	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	87	91	4	0.4	✓	17	4	-13	4.0	✓	0	2	2	2.0	✓	104	97	-7	0.7	✓
		NB	MCC_304_A_NB	101	73	-28	3.0	✓	21	0	-21	6.5	✓	2	2	0	0.0	✓	124	75	-49	4.9	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	202	221	19	1.3	✓	27	11	-16	3.7	✓	0	1	1	1.4	✓	229	233	4	0.3	✓
		EB	MCC_304_B_EB	169	180	11	0.8	✓	18	10	-8	2.1	✓	1	1	0	0.0	✓	188	191	3	0.2	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	100	83	-17	1.8	✓	21	2	-19	5.6	✓	2	1	-1	0.8	✓	123	86	-37	3.6	✓
		SB	MCC_304_C_SB	98	84	-14	1.5	✓	23	2	-21	5.9	✓	0	1	1	1.4	✓	121	87	-34	3.3	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	107	99	-8	0.8	✓	12	6	-6	2.0	✓	1	0	-1	1.4	✓	120	105	-15	1.4	✓
		WB	MCC_304_D_WB	128	158	30	2.5	✓	15	10	-5	1.4	✓	0	0	0	0.0	✓	143	168	25	2.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - betw een A1117 and B1375	NB	30013376	696	585	-111	4.4	✓	22	12	-10	2.4	✓	18	14	-4	1.0	✓	736	611	-125	4.8	✓
30013377		SB	30013377	843	830	-13	0.4	✓	33	26	-7	1.3	✓	21	24	3	0.6	✓	897	880	-17	0.6	✓
30013396	A14 - J56 Through	EB	30013396	1833	1677	-156	3.7	✓	108	102	-6	0.6	✓	307	292	-15	0.9	✓	2248	2071	-177	3.8	✓
30013397	A14 - J56 EXIT	EB	30013397	456	395	-61	3.0	✓	23	19	-4	0.9	✓	13	21	8	1.9	✓	492	435	-57	2.6	✓
30013398	A14 - J57 Through	EB	30013398	1743	1643	-100	2.4	✓	89	115	26	2.6	✓	262	243	-19	1.2	✓	2094	2001	-93	2.1	✓
30013399	A14 - J57 EXIT	EB	30013399	406	380	-26	1.3	✓	47	19	-28	4.9	✓	133	73	-60	5.9	✓	586	472	-114	5.0	✓
30013402	A14 - J57 Through	WB	30013402	1502	1569	67	1.7	✓	76	110	34	3.5	✓	224	240	16	1.1	✓	1802	1919	117	2.7	✓
30013403	A14 - J57 EXIT	WB	30013403	172	190	18	1.3	✓	11	24	13	3.1	✓	47	20	-27	4.7	✓	230	234	4	0.3	✓
30013406	A14 - J55 Through	WB	30013406	1263	1193	-70	2.0	✓	51	29	-22	3.5	✓	185	165	-20	1.5	✓	1499	1387	-112	2.9	✓
30013407	A14 - J55 EXIT	WB	30013407	1058	1079	21	0.6	✓	47	72	25	3.2	✓	116	99	-17	1.6	✓	1221	1250	29	0.8	✓
30013408	A14 - J55 Through	EB	30013408	1163	1075	-88	2.6	✓	60	39	-21	3.0	✓	180	158	-22	1.7	✓	1403	1272	-131	3.6	✓
30013410	A14 - J53 Through	NB	30013410	1843	1414	-429	10.6	×	90	71	-19	2.1	✓	279	241	-38	2.4	✓	2212	1726	-486	11.0	×
30013411	A14 - J53 EXIT	NB	30013411	399	406	7	0.3	✓	20	7	-13	3.5	✓	15	2	-13	4.5	✓	434	415	-19	0.9	✓
30013415	A14 - J51 EXIT	NB	30013415	803	723	-80	2.9	✓	44	57	13	1.8	✓	82	72	-10	1.1	✓	929	852	-77	2.6	✓
30013417	A14 - J51 EXIT	SB	30013417	248	229	-19	1.2	✓	18	39	21	3.9	✓	18	21	3	0.7	✓	284	289	5	0.3	✓
30013418	A14 - betw een J51 and J50	NB	30013418	1683	1545	-138	3.4	✓	79	88	9	1.0	✓	239	220	-19	1.3	✓	2001	1853	-148	3.4	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	6	96	89%
LGV	114	0	102	99%
HGV	114	0	112	100%
Total Vehs	114	6	95	88%

Appendix G
2015 Model Link Flow Validation Results

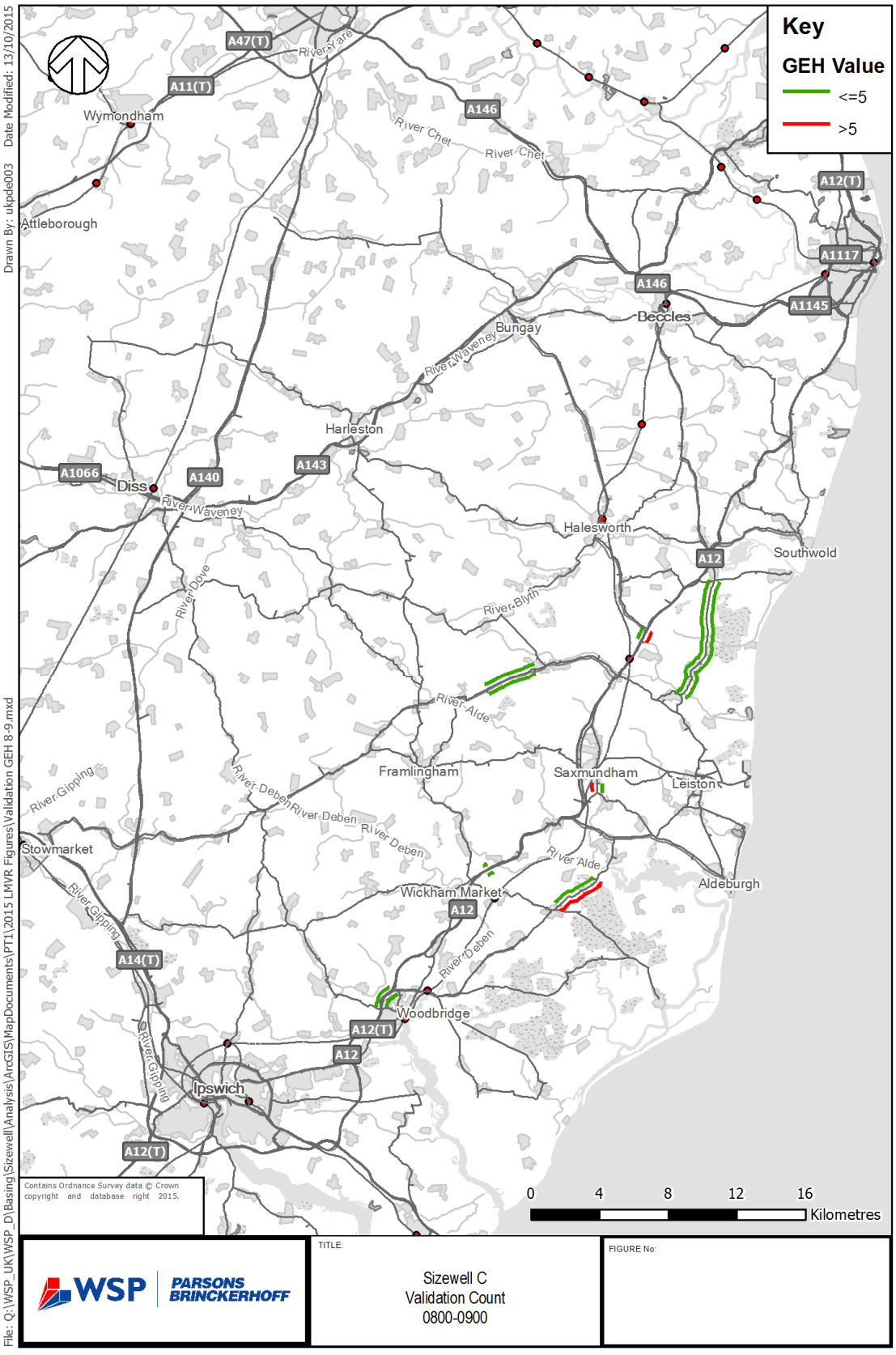


Figure G.0.9: Traffic Flow Validation (08:00-09:00)

Table G.1: Traffic Flow Validation – Screenlines (08:00-09:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	80	100	20	2.1	14	10	-4	1.2	4	0	-4	2.8	98	110	12	1.2
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	320	423	103	5.3	70	84	14	1.6	43	48	5	0.7	433	555	122	5.5
ATC_10_EB	A1120 West of Peasenhall	EB	95	80	-15	1.6	21	11	-10	2.5	12	9	-3	0.9	128	100	-28	2.6
ATC_12_EB	A12 West of Marlesford	EB	480	489	9	0.4	91	107	16	1.6	45	49	4	0.6	616	645	29	1.2
ATC_85_EB	B1069 between Tunstall and Snape	EB	85	114	29	2.9	9	24	15	3.7	5	3	-2	1.0	99	141	42	3.8
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	59	86	27	3.2	12	5	-7	2.4	4	1	-3	1.9	75	92	17	1.9
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	402	313	-89	4.7	72	75	3	0.3	44	47	3	0.4	518	435	-83	3.8
ATC_10_WB	A1120 West of Peasenhall	WB	87	106	19	1.9	24	18	-6	1.3	10	8	-2	0.7	121	132	11	1.0
ATC_12_WB	A12 West of Marlesford	WB	680	699	19	0.7	71	70	-1	0.1	40	42	2	0.3	791	811	20	0.7
ATC_85_WB	B1069 between Tunstall and Snape	WB	64	154	90	8.6	16	30	14	2.9	5	4	-1	0.5	85	188	103	8.8

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1060	1206	146	**4.3**	205	236	31	**2.1**	109	109	0	**0.0**	1374	1551	177	**4.6**
	Outbound	1292	1358	66	**1.8**	195	198	3	**0.2**	103	102	-1	**0.1**	1590	1658	68	**1.7**

Table G.2: Traffic Flow Validation – All Counts (08:00-09:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	402	313	-89	4.7	✓	72	75	3	0.3	✓	44	47	3	0.4	✓	518	435	-83	3.8	✓
		SB	ATC_1_SB	320	423	103	5.3	×	70	84	14	1.6	✓	43	48	5	0.7	✓	433	555	122	5.5	×
9	B1125 South of Westleton	NB	ATC_9_NB	59	86	27	3.2	✓	12	5	-7	2.4	✓	4	1	-3	1.9	✓	75	92	17	1.9	✓
		SB	ATC_9_SB	80	100	20	2.1	✓	14	10	-4	1.2	✓	4	0	-4	2.8	✓	98	110	12	1.2	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	95	80	-15	1.6	✓	21	11	-10	2.5	✓	12	9	-3	0.9	✓	128	100	-28	2.6	✓
		WB	ATC_10_WB	87	106	19	1.9	✓	24	18	-6	1.3	✓	10	8	-2	0.7	✓	121	132	11	1.0	✓
12	A12 West of Marlesford	EB	ATC_12_EB	480	489	9	0.4	✓	91	107	16	1.6	✓	45	49	4	0.6	✓	616	645	29	1.2	✓
		WB	ATC_12_WB	680	699	19	0.7	✓	71	70	-1	0.1	✓	40	42	2	0.3	✓	791	811	20	0.7	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1426	1460	34	0.9	✓	147	194	47	3.6	✓	96	92	-4	0.4	✓	1669	1746	77	1.9	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	843	957	114	3.8	✓	255	203	-52	3.4	✓	127	115	-12	1.1	✓	1225	1275	50	1.4	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	85	114	29	2.9	✓	9	24	15	3.7	✓	5	3	-2	1.0	✓	99	141	42	3.8	✓
		WB	ATC_85_WB	64	154	90	8.6	✓	16	30	14	2.9	✓	5	4	-1	0.5	✓	85	188	103	8.8	×
90	B1121 South West of Saxmundham	NB	ATC_90_NB	176	116	-60	5.0	✓	26	9	-17	4.1	✓	10	7	-3	1.0	✓	212	132	-80	6.1	✓
		SB	ATC_90_SB	155	126	-29	2.4	✓	14	5	-9	2.9	✓	8	6	-2	0.8	✓	177	137	-40	3.2	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	45	54	9	1.3	✓	9	3	-6	2.4	✓	2	0	-2	2.0	✓	56	57	1	0.1	✓
		SB	ATC_91_SB	66	93	27	3.0	✓	17	9	-8	2.2	✓	4	0	-4	2.8	✓	87	102	15	1.5	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	3	75%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	3	75%

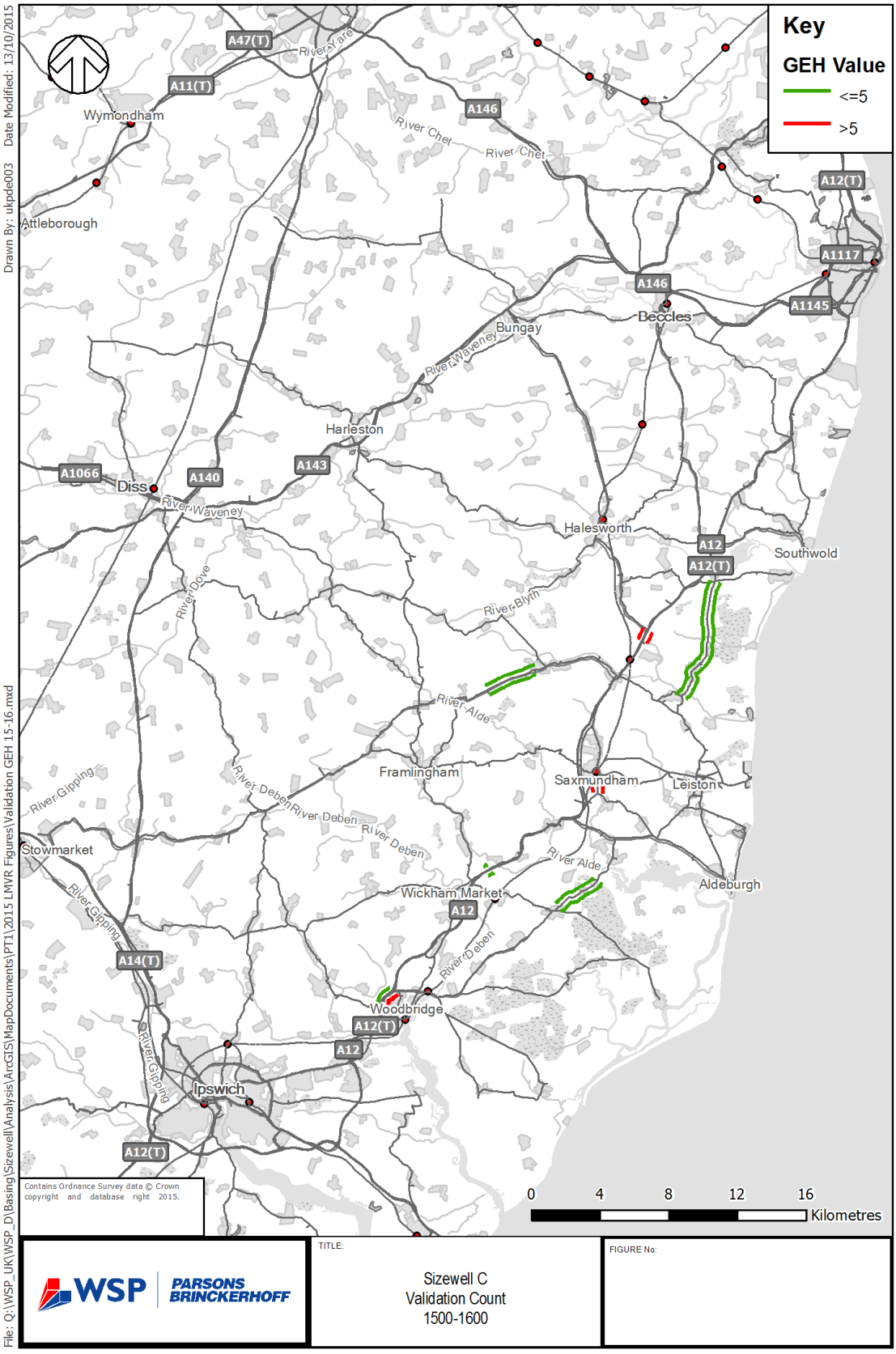


Figure G.0.10: Traffic Flow Validation (15:00-16:00)

Table G.3: Traffic Flow Validation – Screenlines (15:00-16:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	86	90	4	0.4	13	6	-7	2.3	6	1	-5	2.7	105	97	-8	0.8
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	497	367	-130	6.3	72	69	-3	0.4	42	37	-5	0.8	611	473	-138	5.9
ATC_10_EB	A1120 West of Peasenhall	EB	103	105	2	0.2	17	5	-12	3.6	9	5	-4	1.5	129	115	-14	1.3
ATC_12_EB	A12 West of Marlesford	EB	751	730	-21	0.8	78	79	1	0.1	35	37	2	0.3	864	846	-18	0.6
ATC_85_EB	B1069 between Tunstall and Snape	EB	108	164	56	4.8	9	7	-2	0.7	4	2	-2	1.2	121	173	52	4.3
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	100	94	-6	0.6	15	5	-10	3.2	5	0	-5	3.2	120	99	-21	2.0
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	379	491	112	5.4	60	71	11	1.4	28	35	7	1.2	467	597	130	5.6
ATC_10_WB	A1120 West of Peasenhall	WB	103	87	-16	1.6	22	12	-10	2.4	11	4	-7	2.6	136	103	-33	3.0
ATC_12_WB	A12 West of Marlesford	WB	584	619	35	1.4	66	88	22	2.5	41	43	2	0.3	691	750	59	2.2
ATC_85_WB	B1069 between Tunstall and Snape	WB	101	146	45	4.0	15	9	-6	1.7	6	2	-4	2.0	122	157	35	3.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1545	1456	-89	**2.3**	189	166	-23	**1.7**	96	82	-14	**1.5**	1830	1704	-126	**3.0**
	Outbound	1267	1437	170	**4.6**	178	185	7	**0.5**	91	84	-7	**0.7**	1536	1706	170	**4.2**

Table G.4: Traffic Flow Validation – All Counts (15:00-16:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	NB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	379	491	112	5.4	✗	60	71	11	1.4	✓	28	35	7	1.2	✓	467	597	130	5.6	✗
		SB	ATC_1_SB	497	367	-130	6.3	✗	72	69	-3	0.4	✓	42	37	-5	0.8	✓	611	473	-138	5.9	✗
9	B1125 South of Westleton	NB	ATC_9_NB	100	94	-6	0.6	✓	15	5	-10	3.2	✓	5	0	-5	3.2	✓	120	99	-21	2.0	✓
		SB	ATC_9_SB	86	90	4	0.4	✓	13	6	-7	2.3	✓	6	1	-5	2.7	✓	105	97	-8	0.8	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	103	105	2	0.2	✓	17	5	-12	3.6	✓	9	5	-4	1.5	✓	129	115	-14	1.3	✓
		WB	ATC_10_WB	103	87	-16	1.6	✓	22	12	-10	2.4	✓	11	4	-7	2.6	✓	136	103	-33	3.0	✓
12	A12 West of Marlesford	EB	ATC_12_EB	751	730	-21	0.8	✓	78	79	1	0.1	✓	35	37	2	0.3	✓	864	846	-18	0.6	✓
		WB	ATC_12_WB	584	619	35	1.4	✓	66	88	22	2.5	✓	41	43	2	0.3	✓	691	750	59	2.2	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1174	1273	99	2.8	✓	275	214	-61	3.9	✓	95	98	3	0.3	✓	1544	1585	41	1.0	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1312	1340	28	0.8	✓	188	158	-30	2.3	✓	96	82	-14	1.5	✓	1596	1580	-16	0.4	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	108	164	56	4.8	✓	9	7	-2	0.7	✓	4	2	-2	1.2	✓	121	173	52	4.3	✓
		WB	ATC_85_WB	101	146	45	4.0	✓	15	9	-6	1.7	✓	6	2	-4	2.0	✓	122	157	35	3.0	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	226	122	-104	7.9	✗	17	10	-7	1.9	✓	7	5	-2	0.8	✓	250	137	-113	8.1	✗
		SB	ATC_90_SB	216	122	-94	7.2	✓	28	7	-21	5.0	✓	10	6	-4	1.4	✓	254	135	-119	8.5	✗
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	90	82	-8	0.9	✓	9	4	-5	2.0	✓	3	0	-3	2.4	✓	102	86	-16	1.7	✓
		SB	ATC_91_SB	40	59	19	2.7	✓	6	5	-1	0.4	✓	4	0	-4	2.8	✓	50	64	14	1.9	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

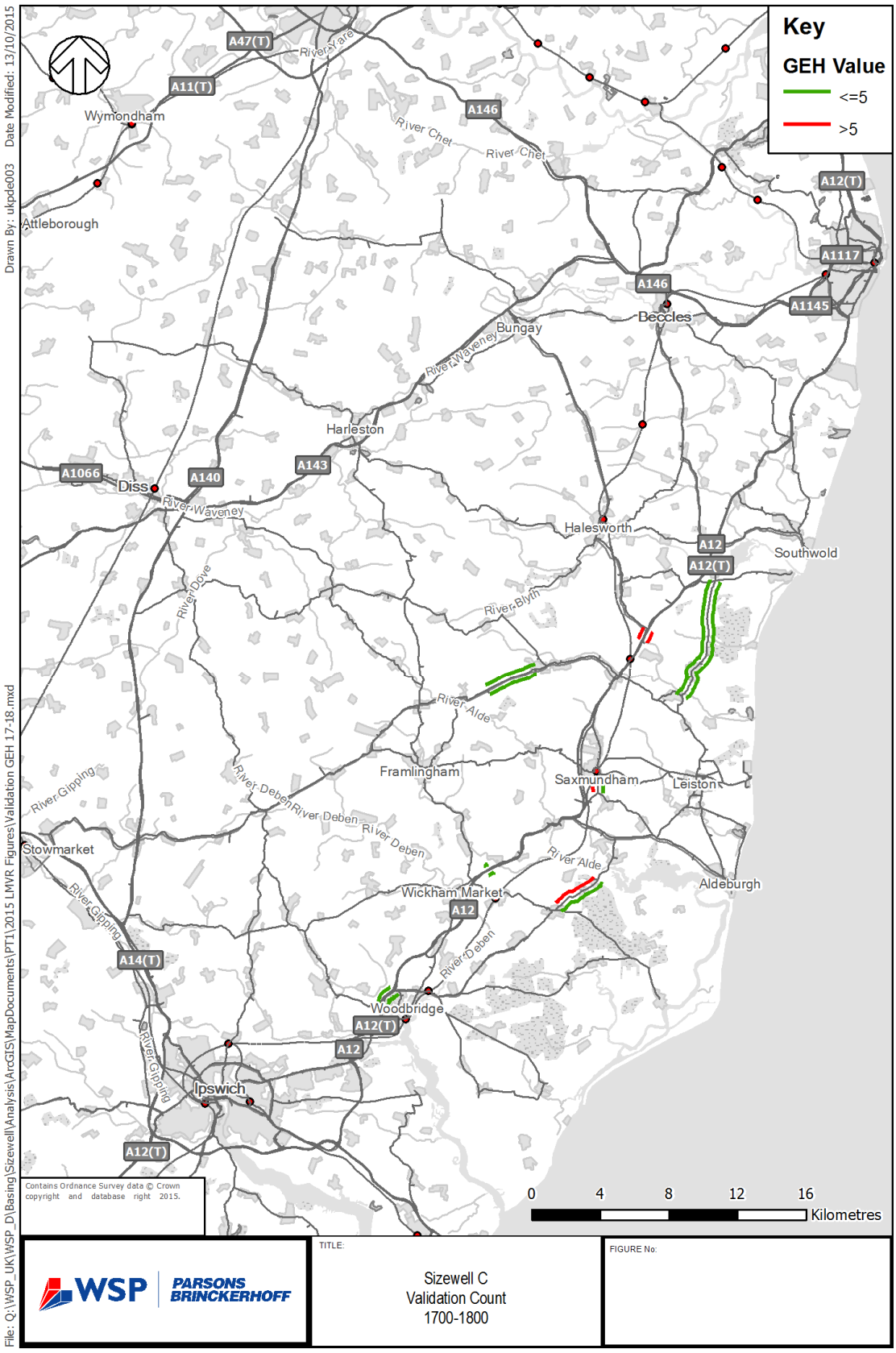


Figure G.0.11: Traffic Flow Validation (17:00-18:00)

Table G.5: Traffic Flow Validation – Screenlines (17:00-18:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	60	80	20	2.4	7	2	-5	2.4	3	0	-3	2.4	70	82	12	14
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	548	360	-188	8.8	71	50	-21	2.7	20	19	-1	0.2	639	429	-210	9.1
ATC_10_EB	A1120 West of Peasenhall	EB	115	131	16	1.4	19	17	-2	0.5	6	3	-3	1.4	140	151	11	0.9
ATC_12_EB	A12 West of Marlesford	EB	784	762	-22	0.8	60	73	13	1.6	25	22	-3	0.6	869	857	-12	0.4
ATC_85_EB	B1069 between Tunstall and Snape	EB	124	188	64	5.1	12	9	-3	0.9	5	1	-4	2.3	141	198	57	4.4
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	85	84	-1	0.1	14	2	-12	4.2	1	0	-1	1.4	100	86	-14	1.5
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	392	556	164	7.5	50	61	11	1.5	18	16	-2	0.5	460	633	173	7.4
ATC_10_WB	A1120 West of Peasenhall	WB	97	93	-4	0.4	18	13	-5	1.3	5	2	-3	1.6	120	108	-12	1.1
ATC_12_WB	A12 West of Marlesford	WB	553	592	39	1.6	49	57	8	1.1	19	26	7	1.5	621	675	54	2.1
ATC_85_WB	B1069 between Tunstall and Snape	WB	123	161	38	3.2	16	7	-9	2.7	7	1	-6	3.0	146	169	23	1.8

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1631	1521	-110	**2.8**	169	151	-18	**1.4**	59	45	-14	**1.9**	1859	1717	-142	**3.4**
	Outbound	1250	1486	236	**6.4**	147	140	-7	**0.6**	50	45	-5	**0.7**	1447	1671	224	**5.7**

Table G.6: Traffic Flow Validation – All Counts (17:00-18:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	392	556	164	7.5	×	50	61	11	1.5	✓	18	16	-2	0.5	✓	460	633	173	7.4	×
		SB	ATC_1_SB	548	360	-188	8.8	×	71	50	-21	2.7	✓	20	19	-1	0.2	✓	639	429	-210	9.1	×
9	B1125 South of Westleton	NB	ATC_9_NB	85	84	-1	0.1	✓	14	2	-12	4.2	✓	1	0	-1	1.4	✓	100	86	-14	1.5	✓
		SB	ATC_9_SB	60	80	20	2.4	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	70	82	12	1.4	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	115	131	16	1.4	✓	19	17	-2	0.5	✓	6	3	-3	1.4	✓	140	151	11	0.9	✓
		WB	ATC_10_WB	97	93	-4	0.4	✓	18	13	-5	1.3	✓	5	2	-3	1.6	✓	120	108	-12	1.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	784	762	-22	0.8	✓	60	73	13	1.6	✓	25	22	-3	0.6	✓	869	857	-12	0.4	✓
		WB	ATC_12_WB	553	592	39	1.6	✓	49	57	8	1.1	✓	19	26	7	1.5	✓	621	675	54	2.1	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1158	1462	304	8.4	×	257	158	-99	6.9	✓	63	78	15	1.8	✓	1478	1698	220	5.5	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1413	1329	-84	2.3	✓	223	134	-89	6.7	✓	63	56	-7	0.9	✓	1699	1519	-180	4.5	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	124	188	64	5.1	✓	12	9	-3	0.9	✓	5	1	-4	2.3	✓	141	198	57	4.4	✓
		WB	ATC_85_WB	123	161	38	3.2	✓	16	7	-9	2.7	✓	7	1	-6	3.0	✓	146	169	23	1.8	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	208	137	-71	5.4	✓	20	12	-8	2.0	✓	3	4	1	0.5	✓	231	153	-78	5.6	✓
		SB	ATC_90_SB	213	148	-65	4.8	✓	18	6	-12	3.5	✓	3	4	1	0.5	✓	234	158	-76	5.4	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	69	80	11	1.3	✓	8	1	-7	3.3	✓	0	0	0	0.0	✓	77	81	4	0.5	✓
		SB	ATC_91_SB	40	52	12	1.8	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	47	54	7	1.0	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Appendix H
2015 Model Journey Time Validation Results

Journey time validation graphs (08:00–09:00)

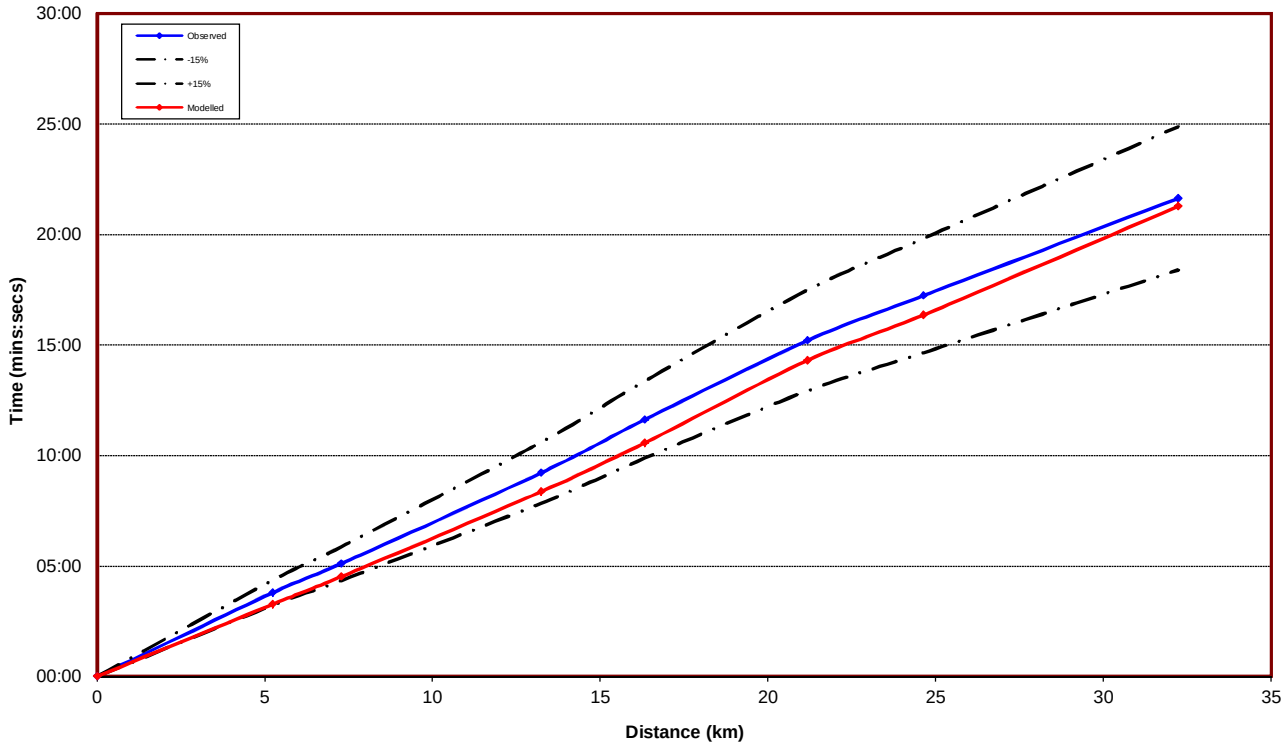


Figure H.0.12: Journey time – Route 1 Eastbound (08:00-09:00)

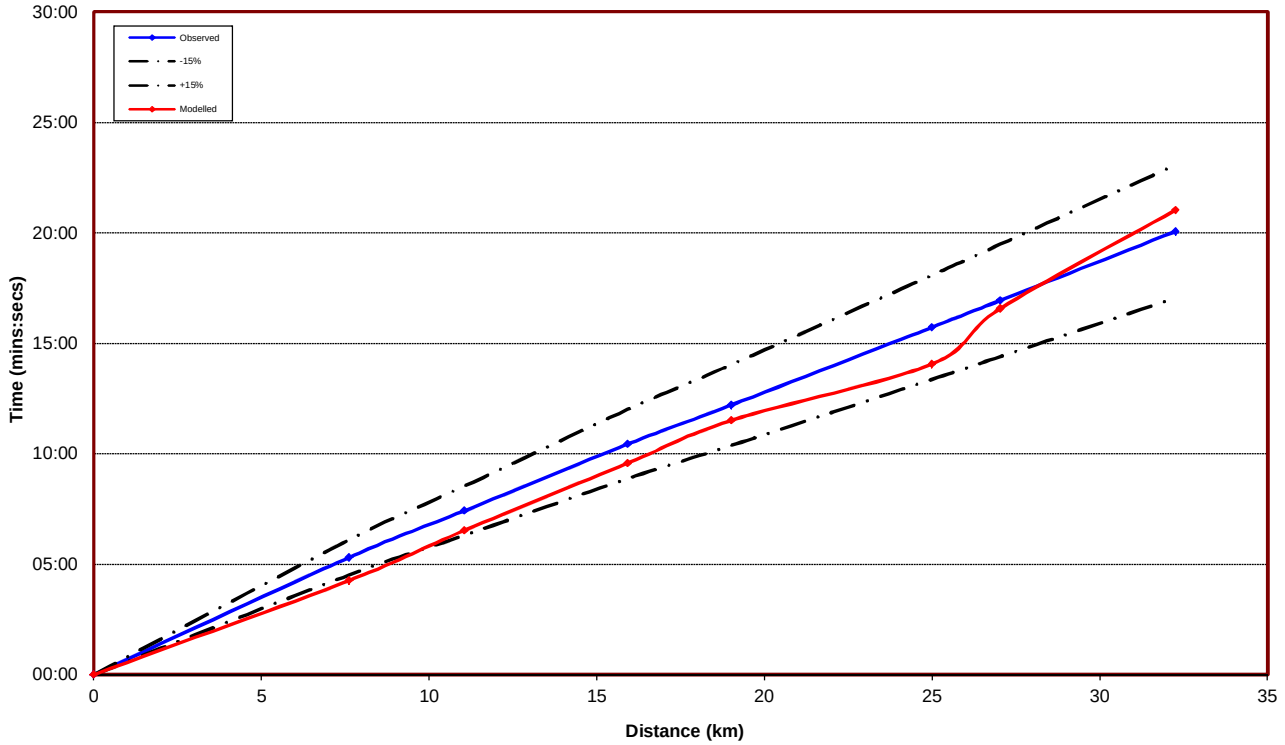


Figure H.0.13: Journey time – Route 1 Westbound (08:00-09:00)

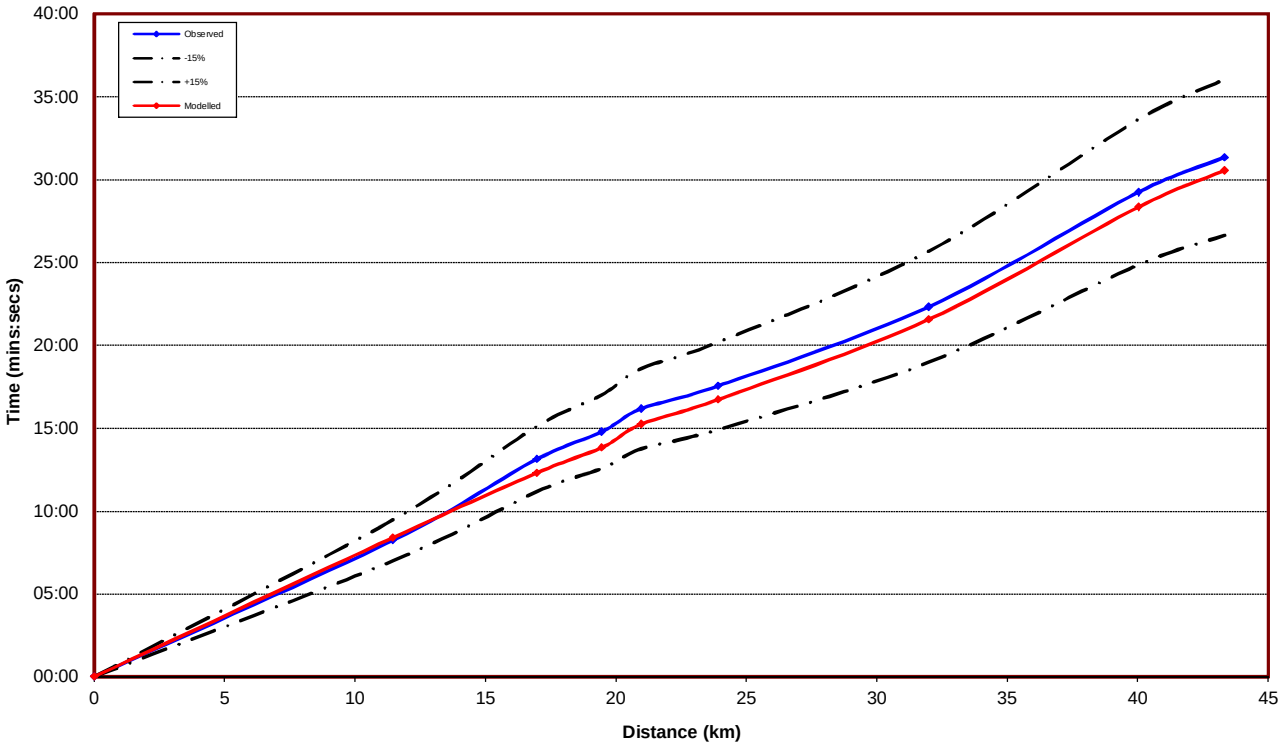


Figure H.0.14: Journey time – Route 2 Northbound (08:00-09:00)

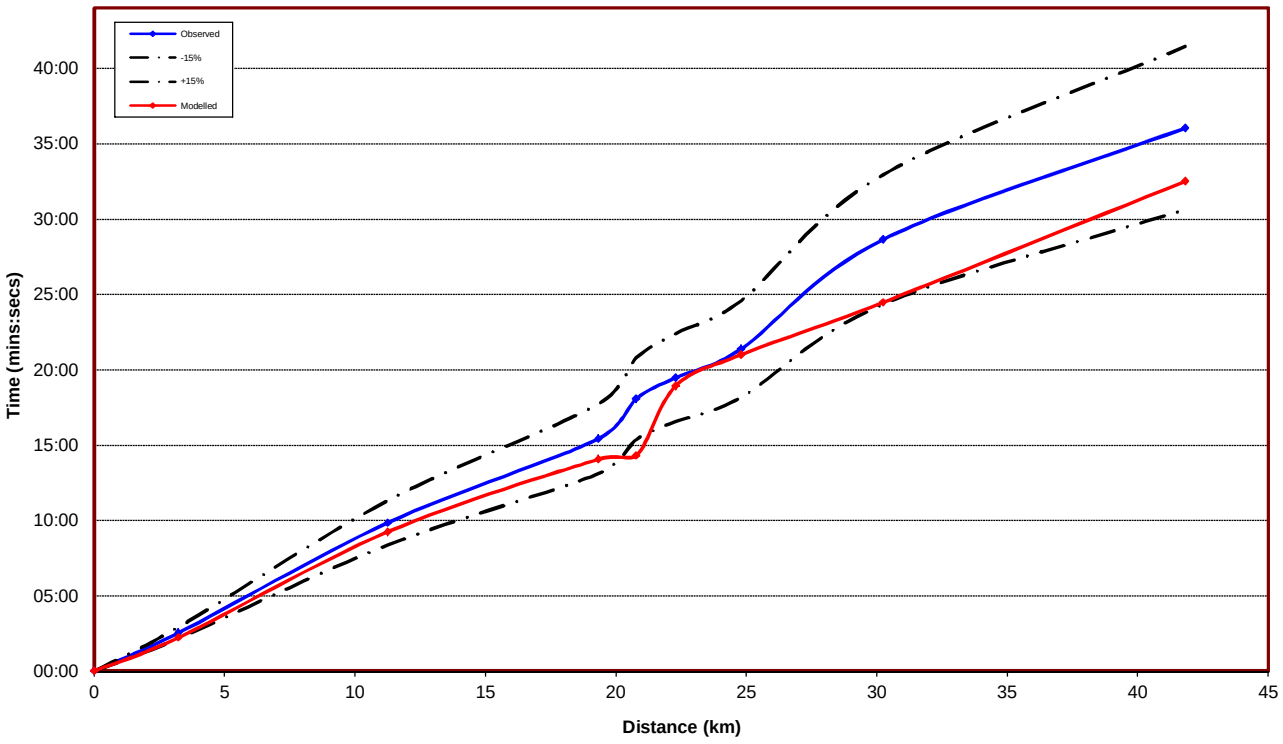


Figure H.0.15: Journey time – Route 2 Southbound (08:00-09:00)

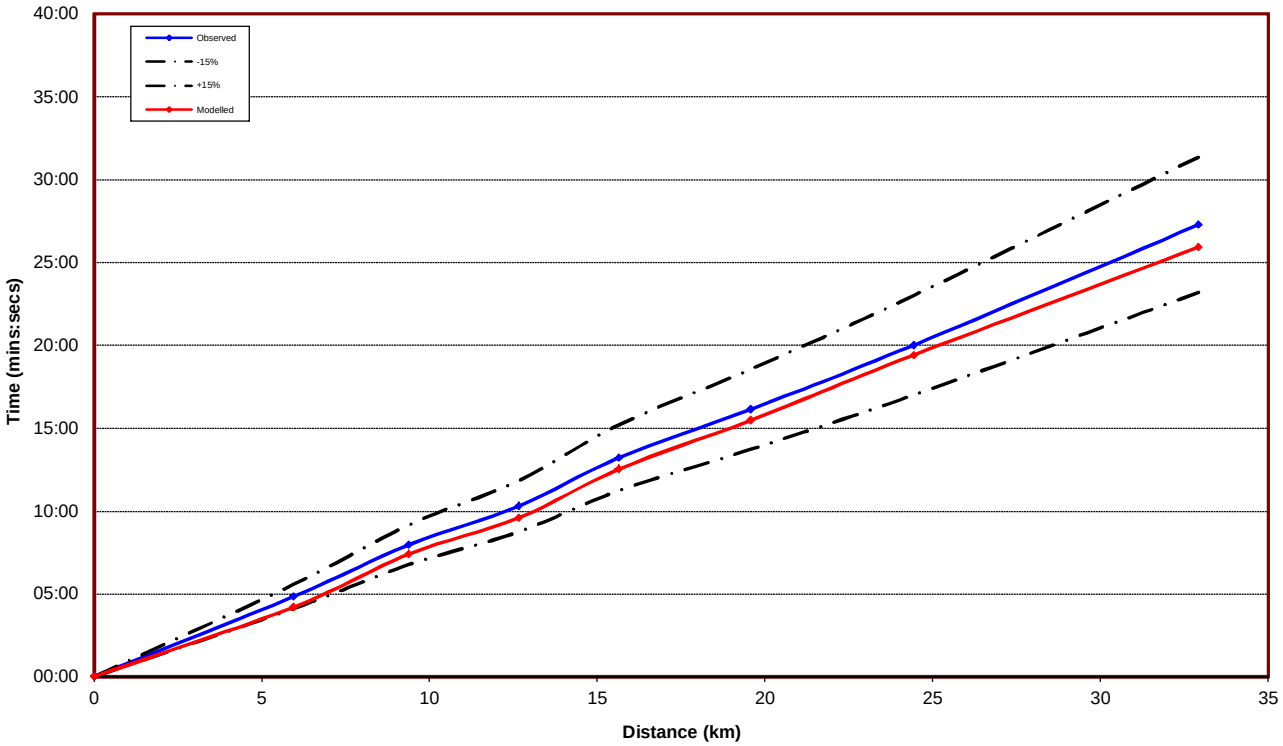


Figure H.0.16: Journey time – Route 3 Northbound (08:00-09:00)

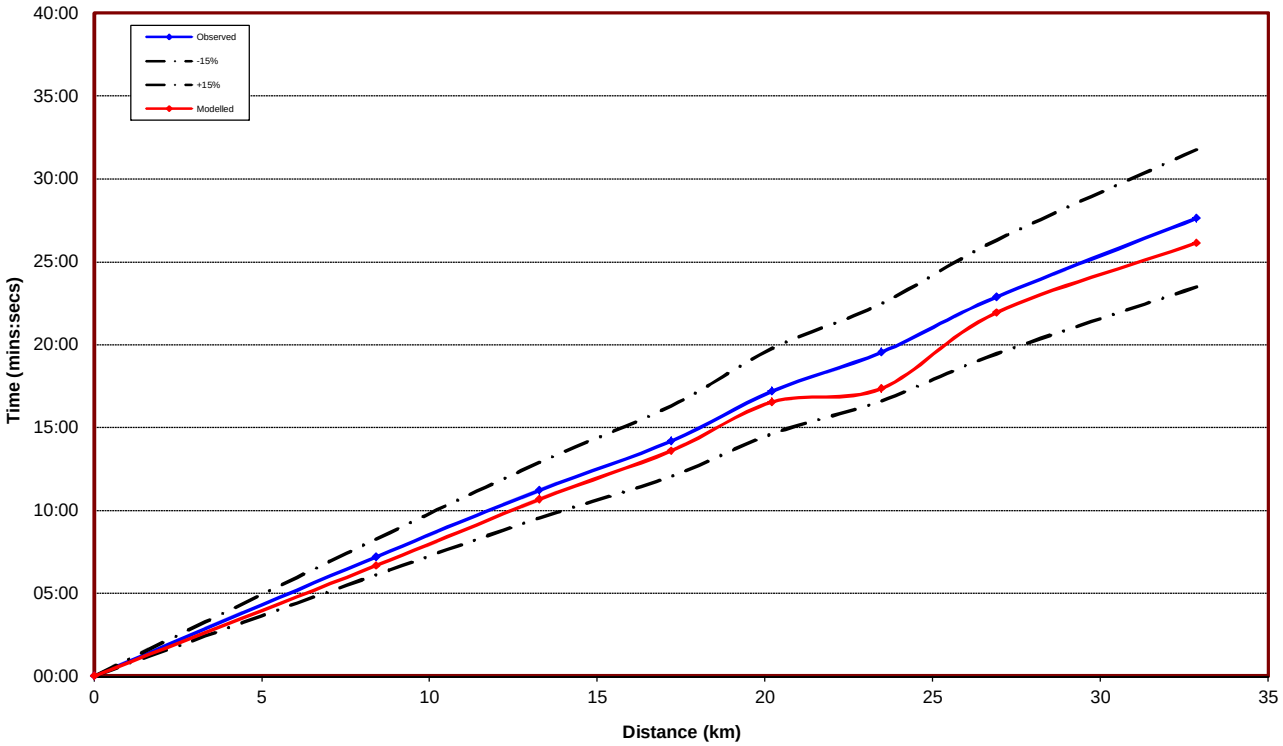


Figure H.0.17: Journey time – Route 3 Southbound (08:00-09:00)

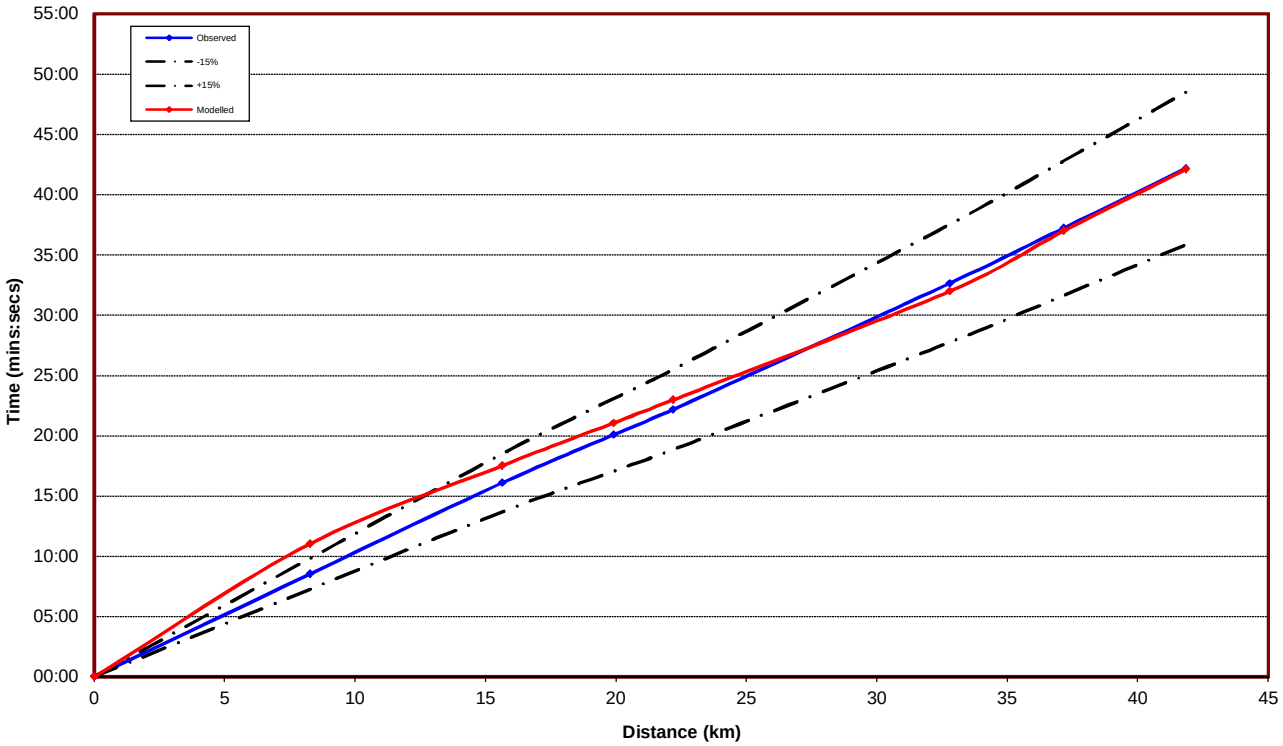


Figure H.0.18: Journey time – Route 4 Eastbound (08:00-09:00)

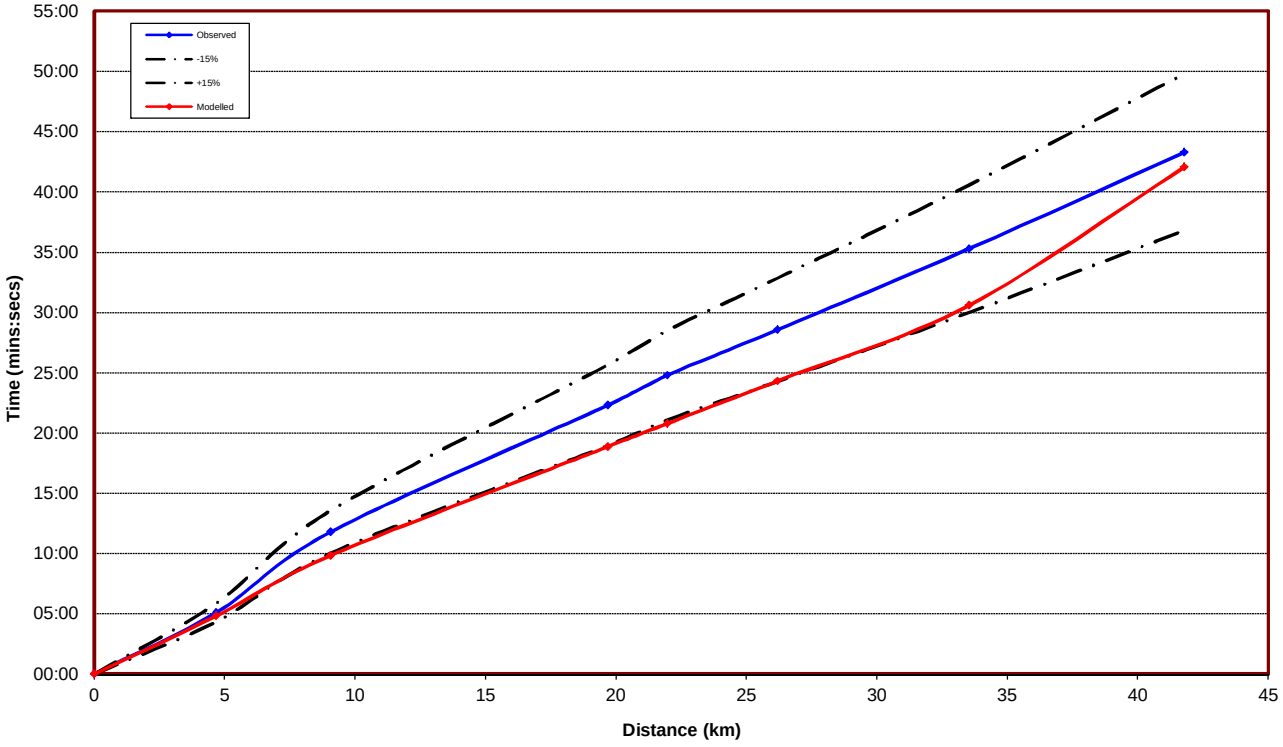


Figure H.0.19: Journey time – Route 4 Westbound (08:00-09:00)

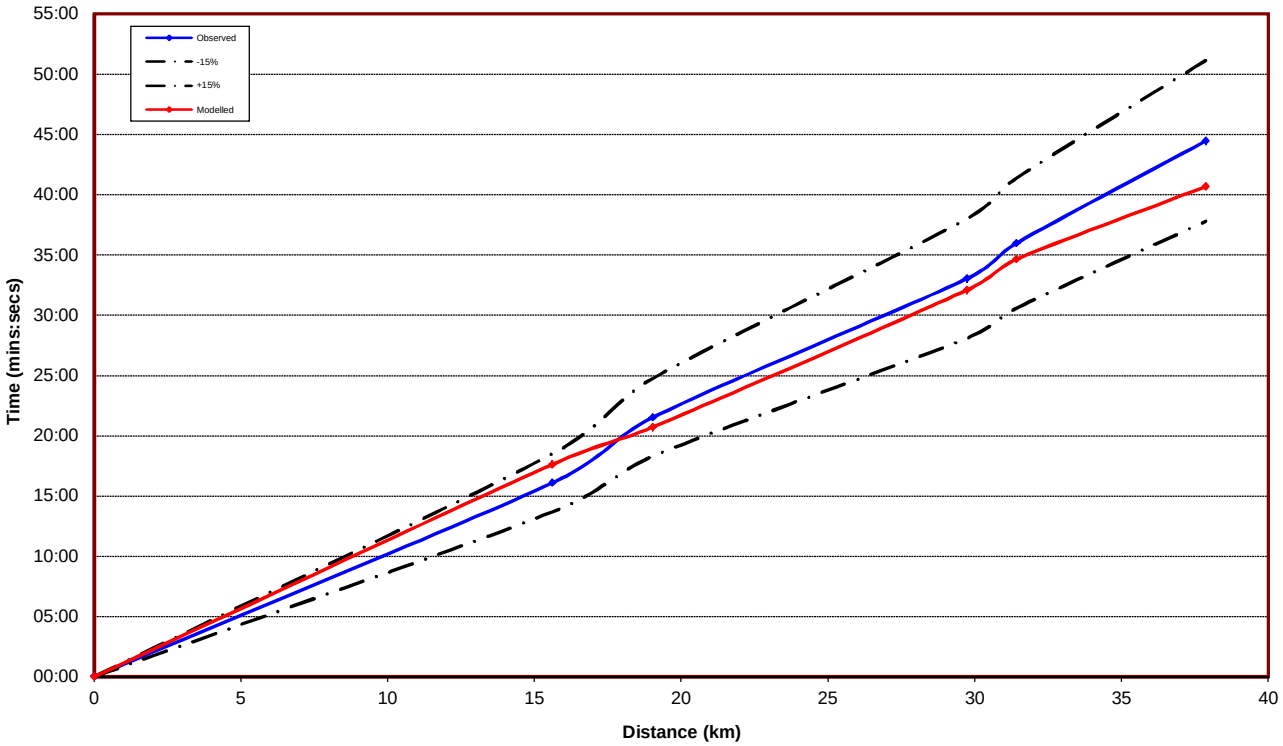


Figure H.0.20: Journey time – Route 5 Eastbound (08:00-09:00)

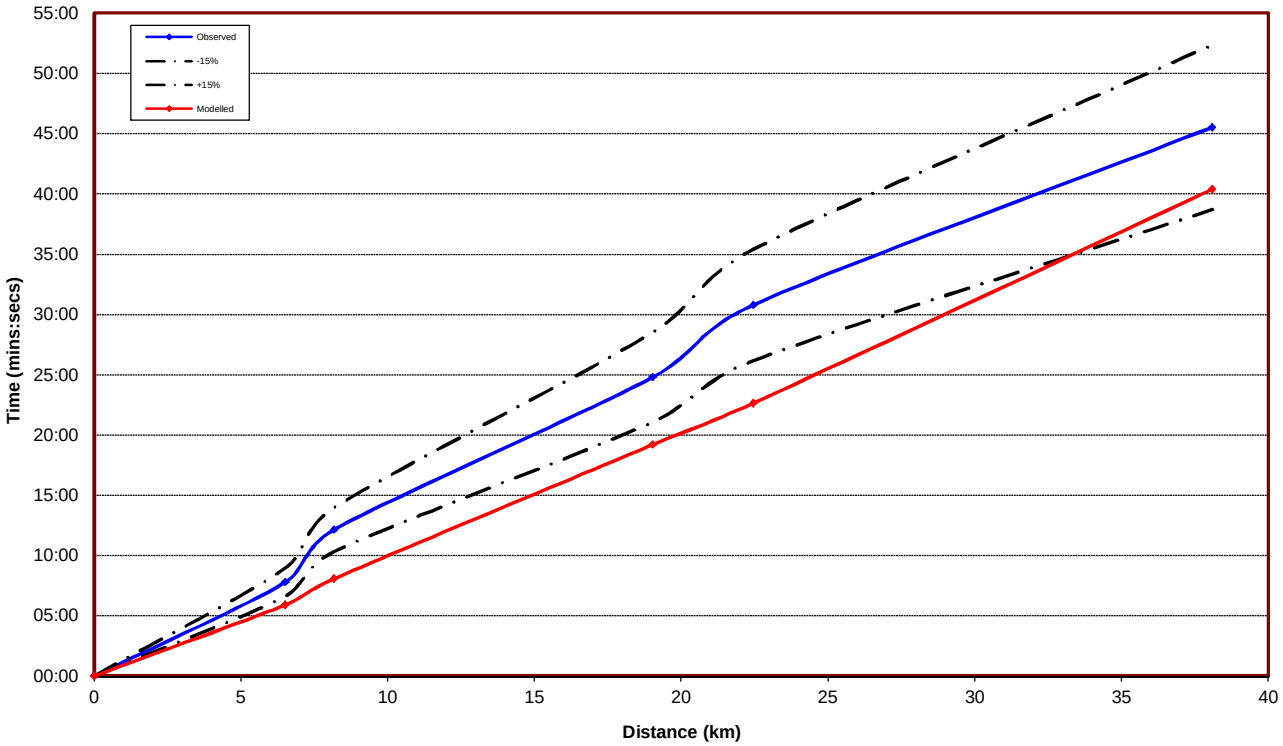


Figure H.0.21: Journey time – Route 5 Westbound (08:00-09:00)

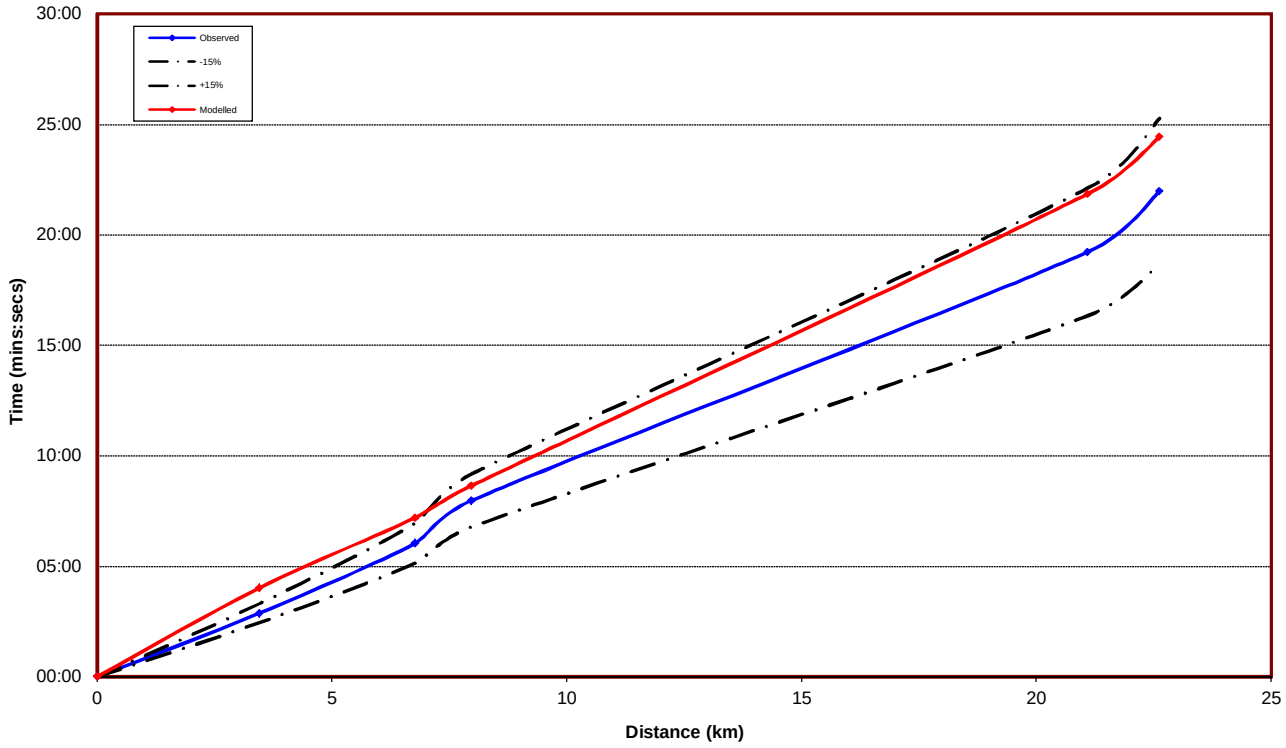


Figure H.0.22: Journey time – Route 6 Northbound (08:00-09:00)

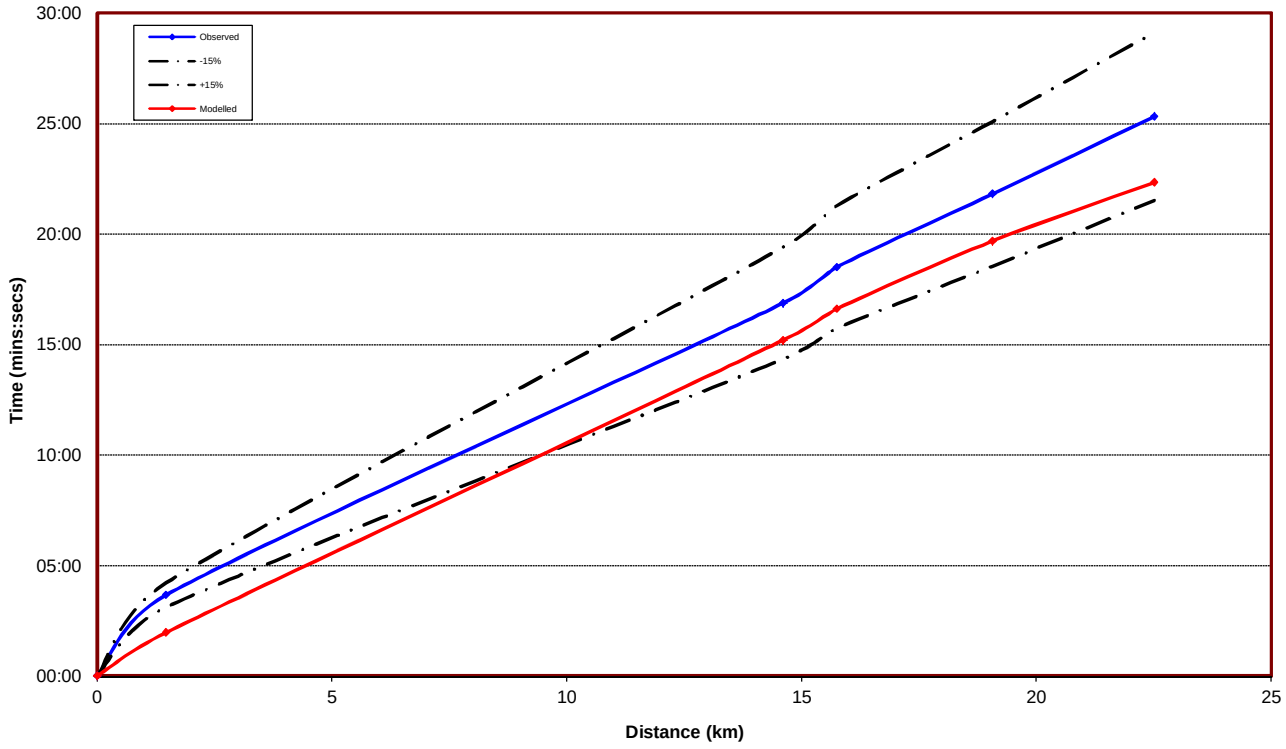


Figure H.0.23: Journey time – Route 6 Southbound (08:00-09:00)

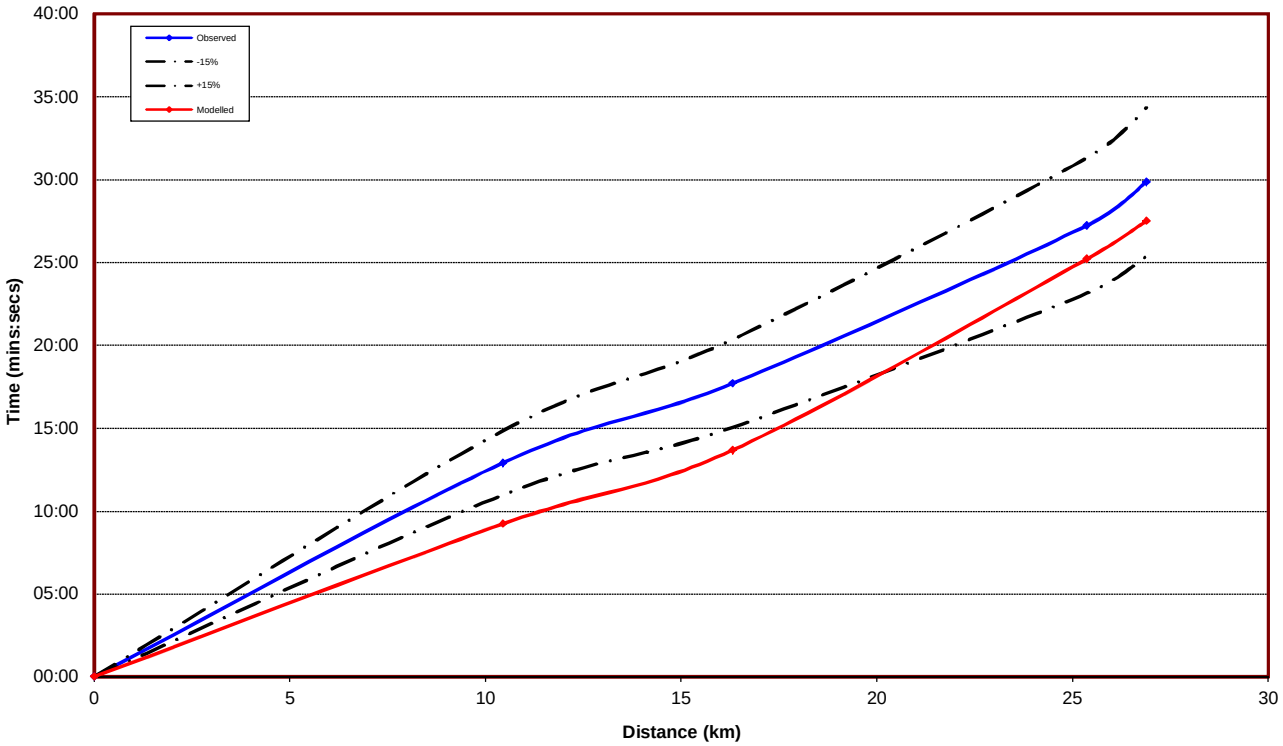


Figure H.0.24: Journey time - Route 7 Northbound (08:00-09:00)

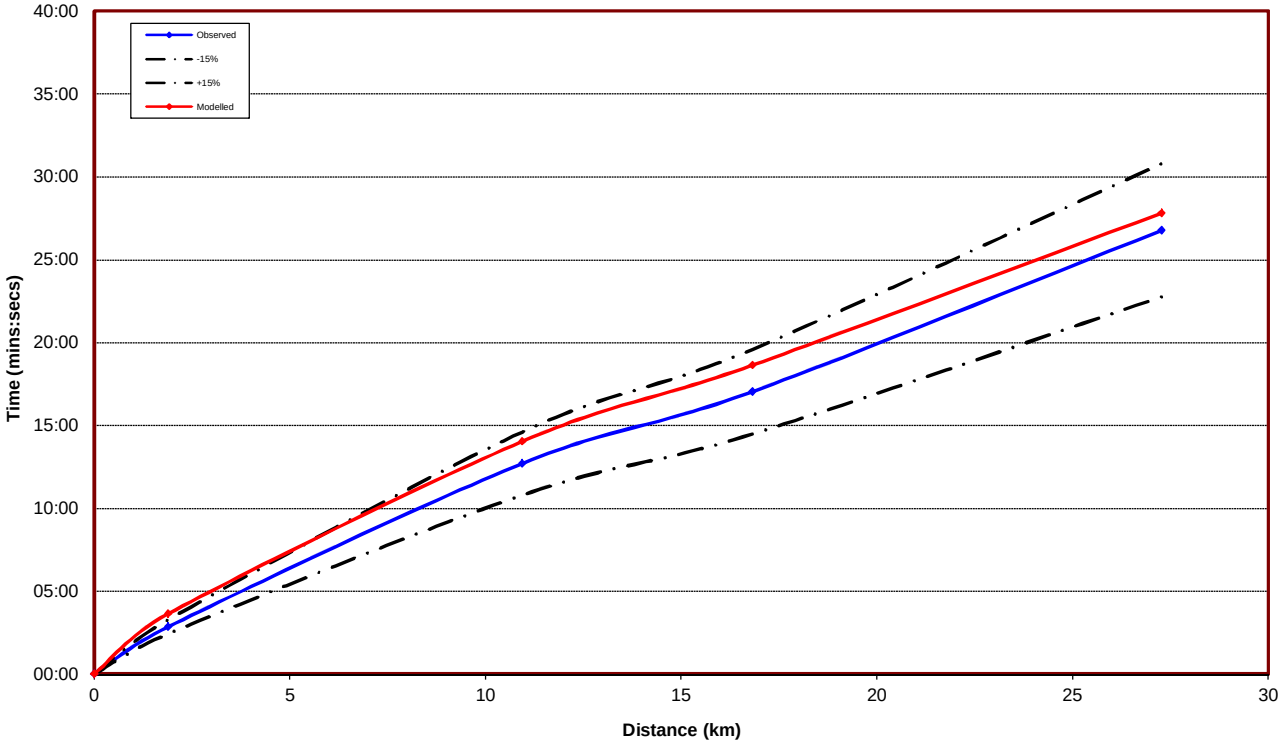


Figure H.0.25: Journey time - Route 7 Southbound (08:00-09:00)

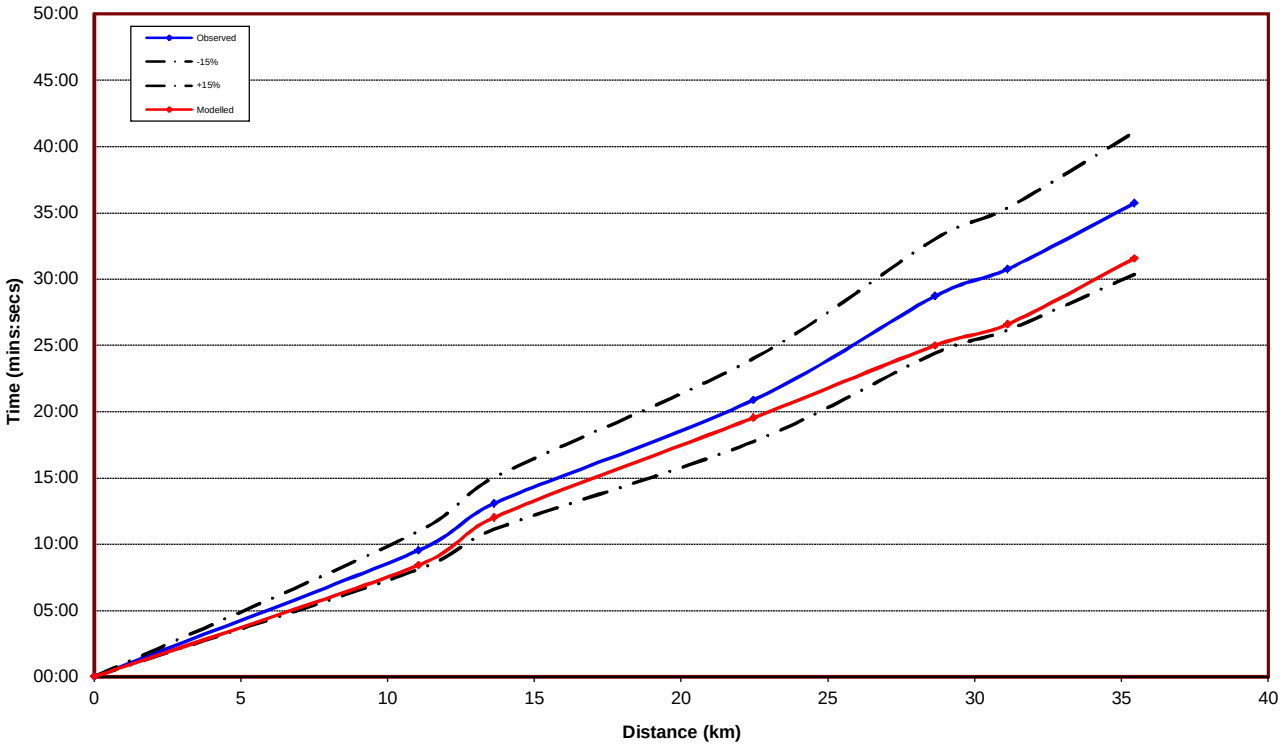


Figure H.0.26: Journey time - Route 8 Northbound (08:00-09:00)

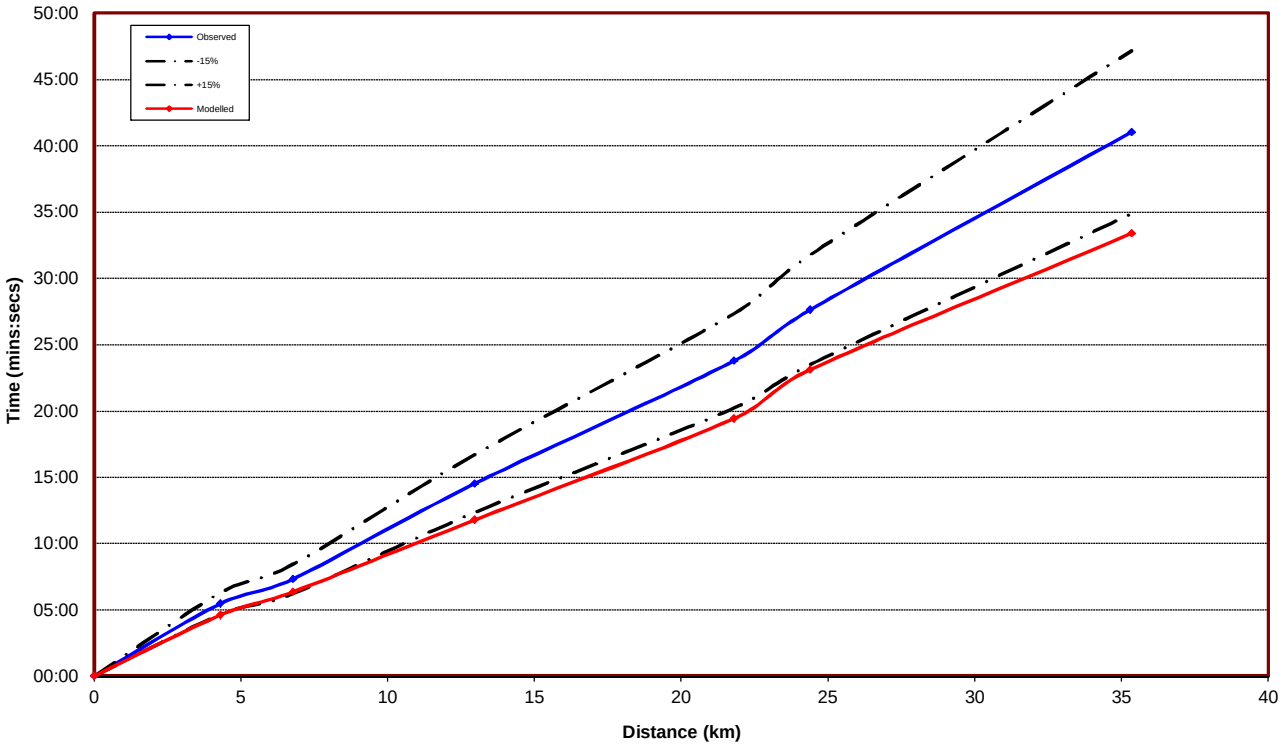


Figure H.0.27: Journey time – Route 8 Southbound (08:00-09:00)

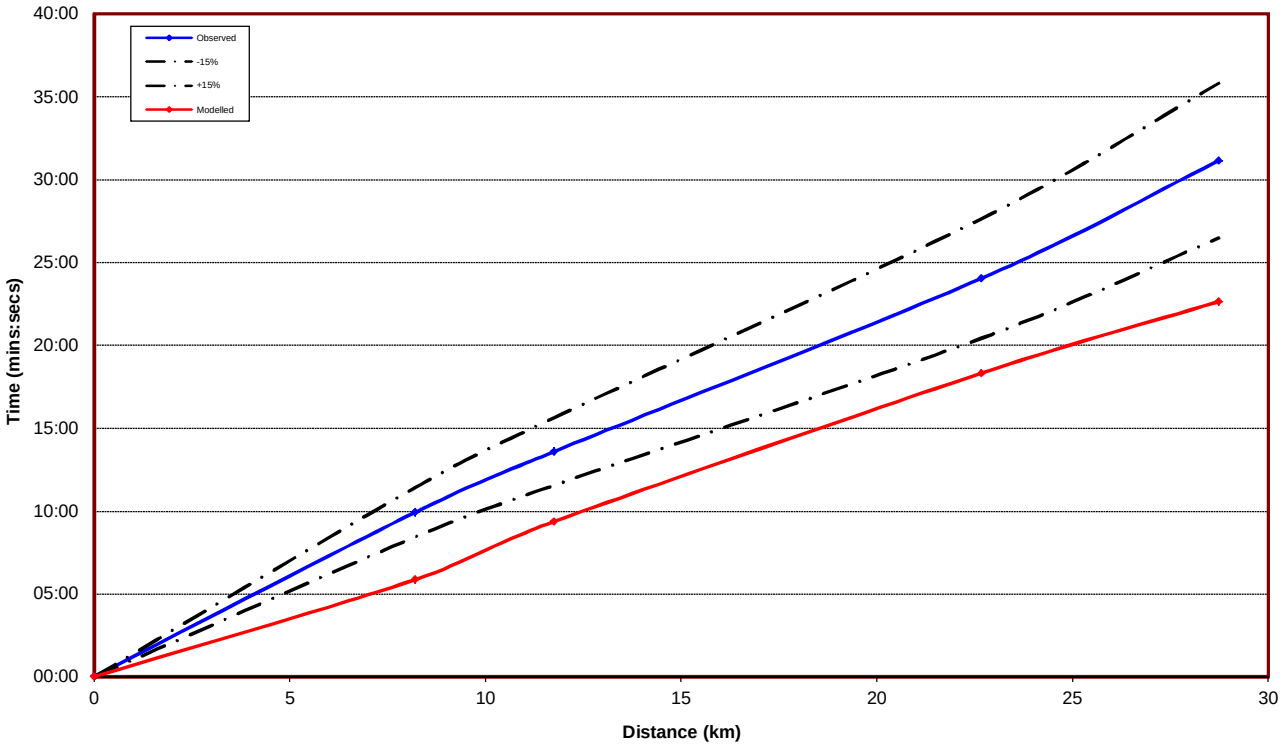


Figure H.0.28: Journey time – Route 9 Eastbound (08:00-09:00)

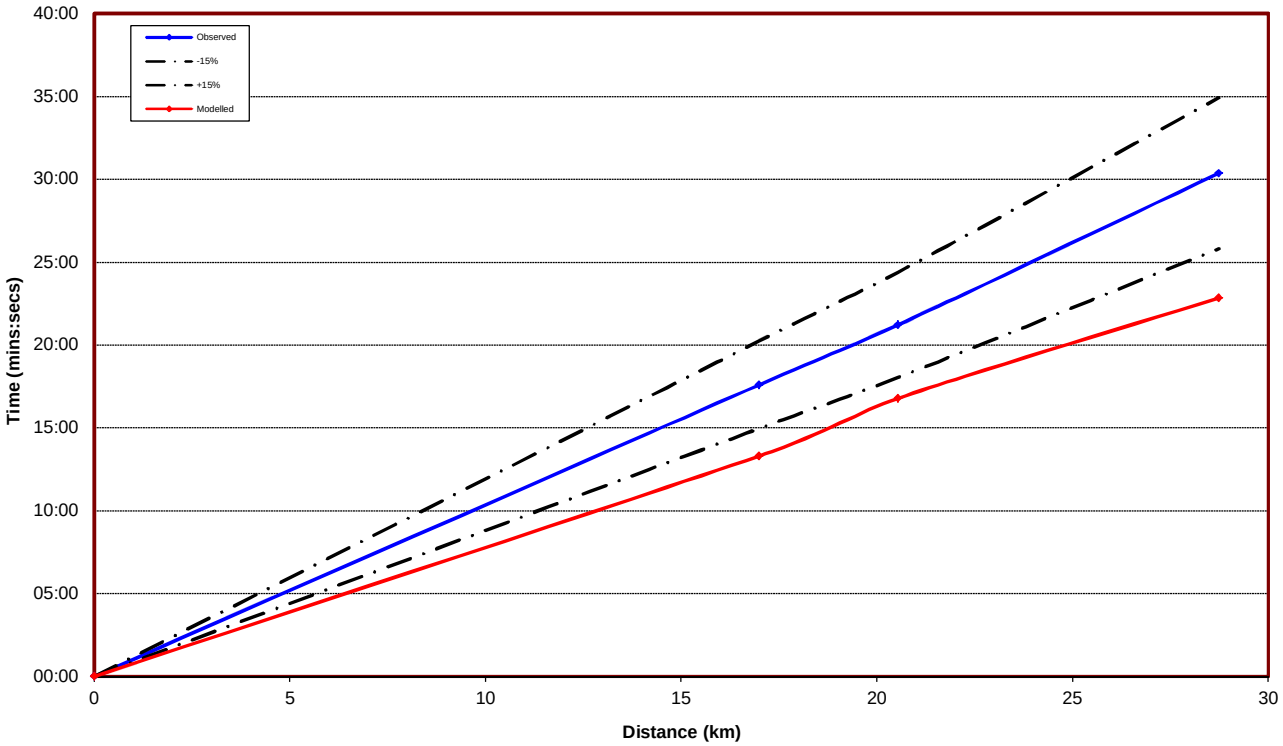


Figure H.0.29: Journey time – Route 9 Westbound (08:00-09:00)

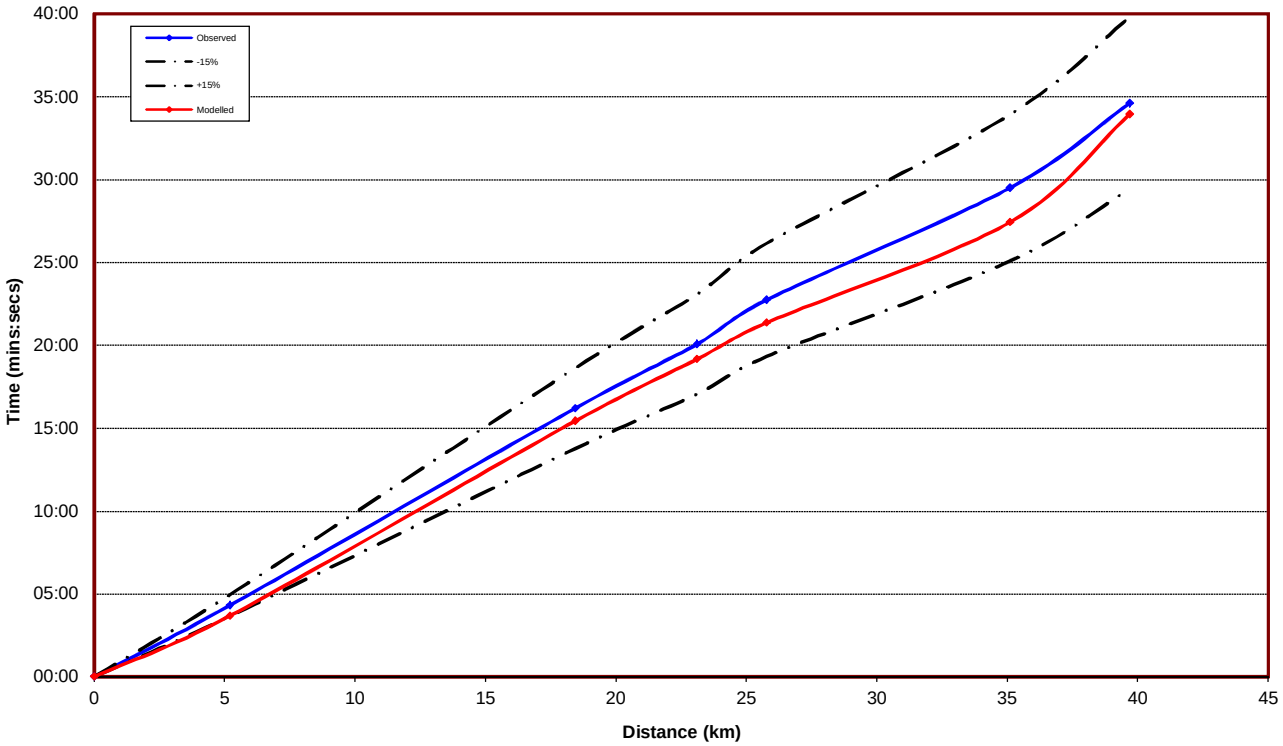


Figure H.0.30: Journey time – Route 10 Northbound (08:00-09:00)

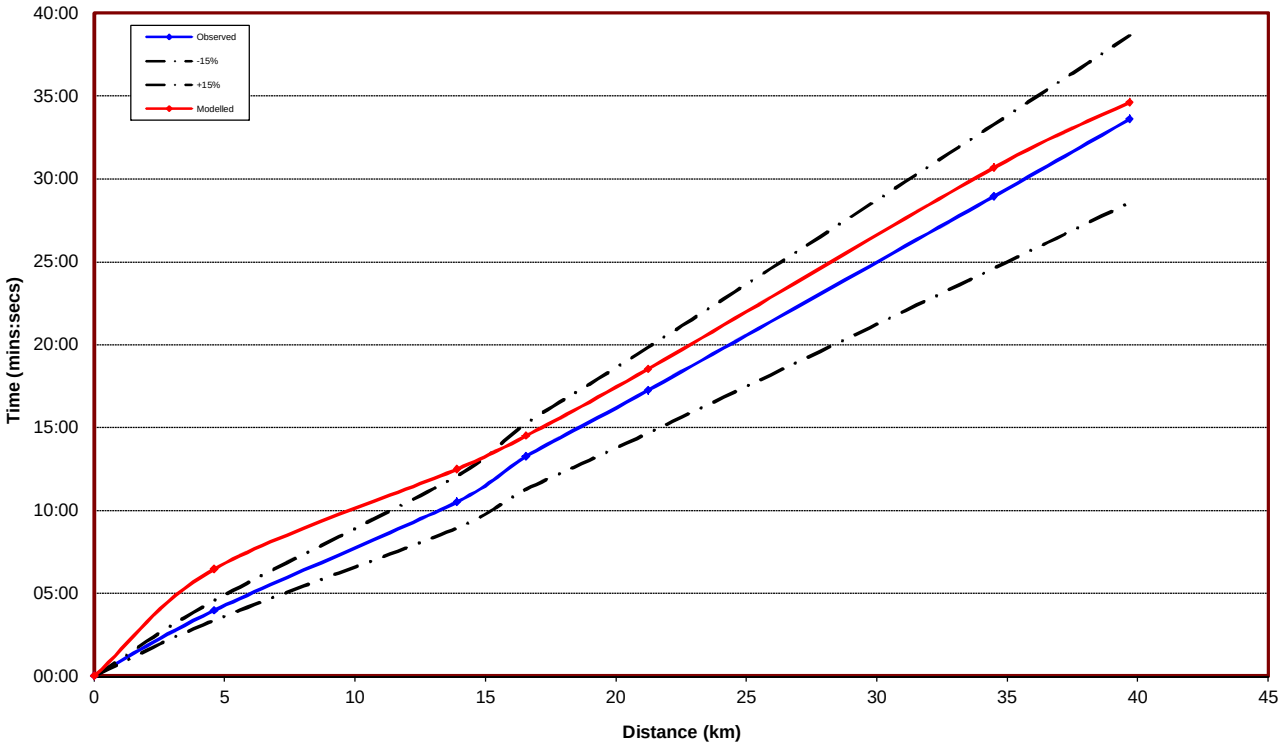


Figure H.0.31: Journey time – Route 10 Southbound (08:00-09:00)

Journey time validation graphs (15:00-16:00)

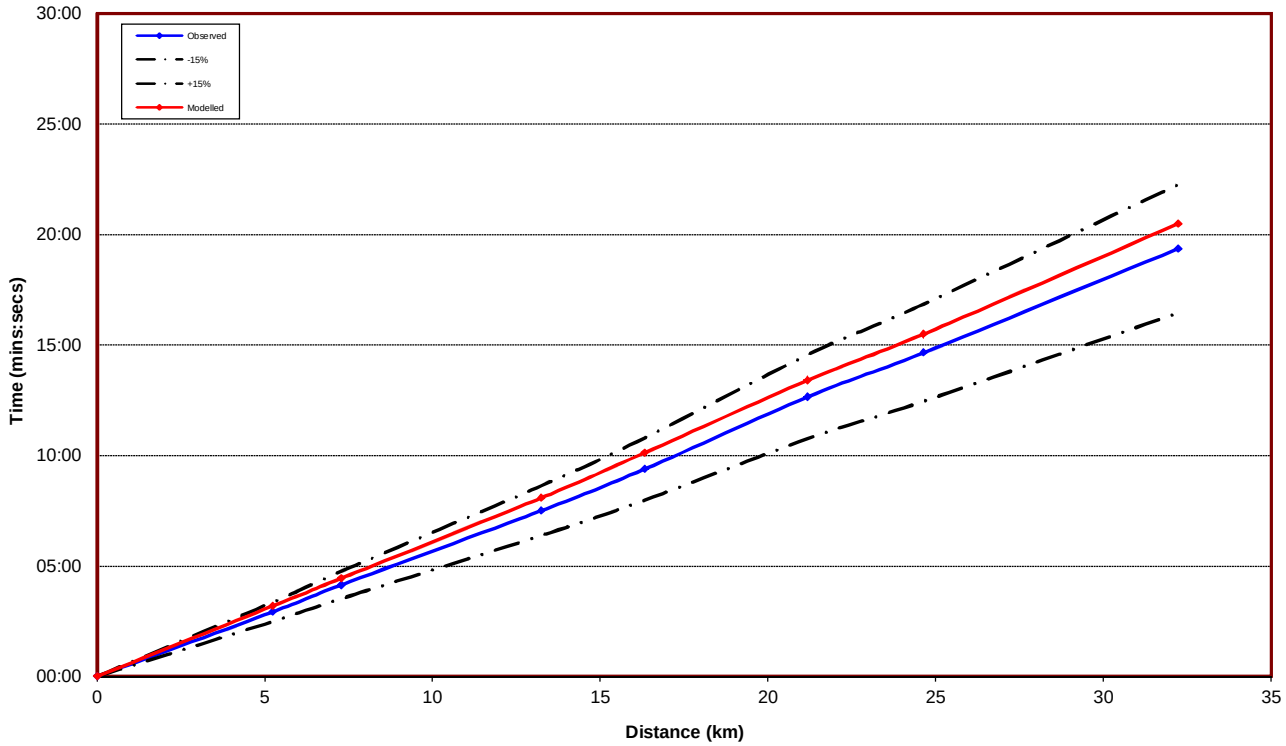


Figure H.0.32: Journey time – Route 1 Eastbound (15:00-16:00)

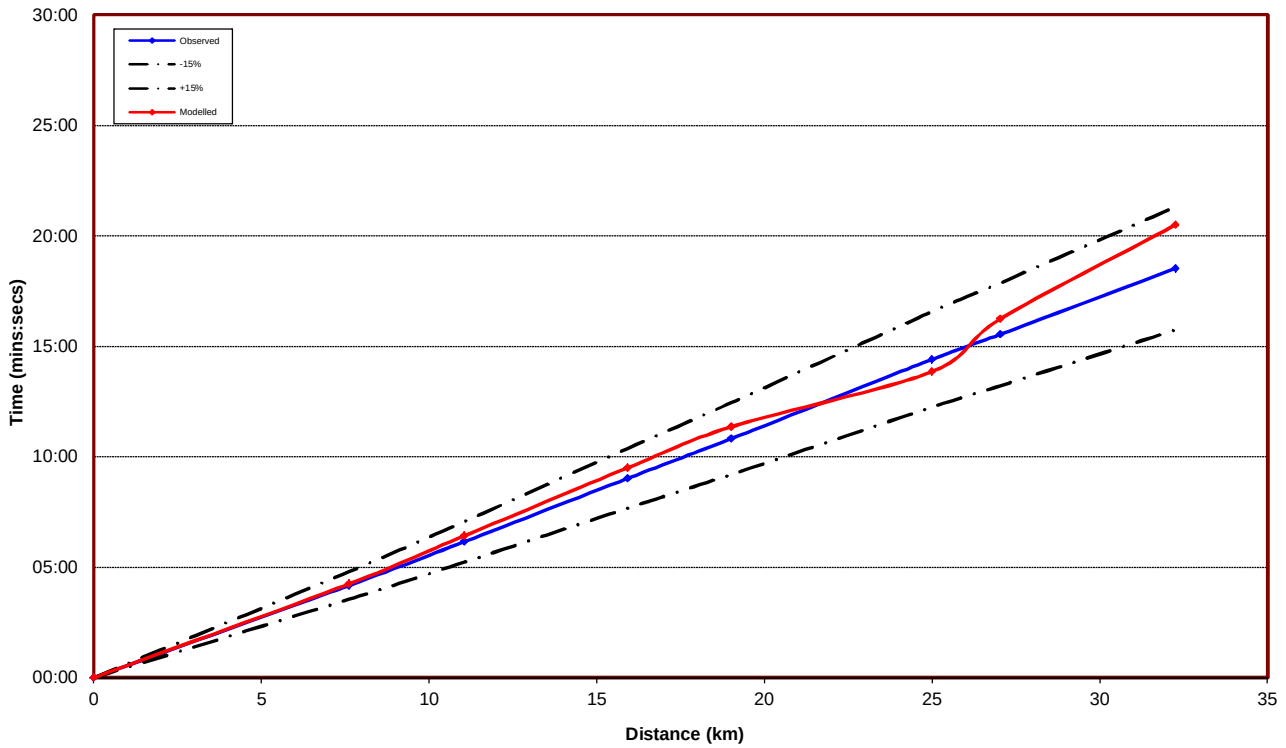


Figure H.0.33: Journey time – Route 1 Westbound (15:00-16:00)

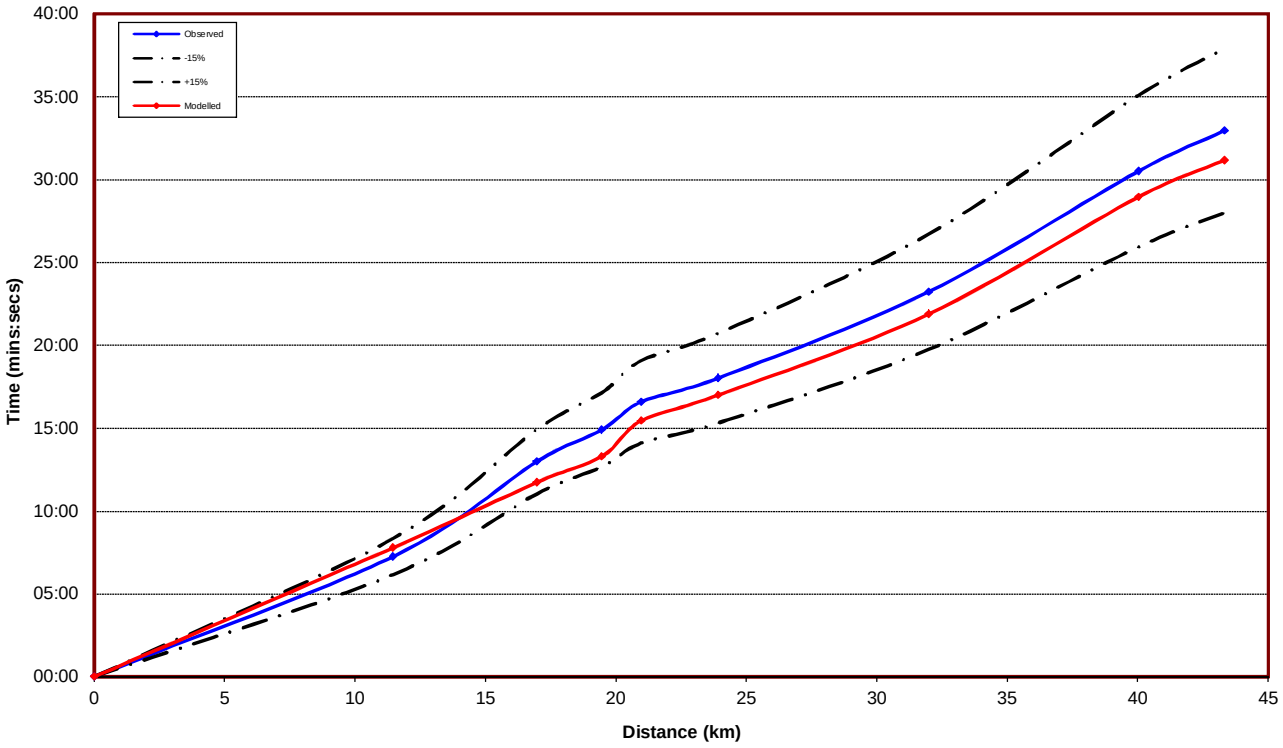


Figure H.0.34: Journey time – Route 2 Northbound (15:00-16:00)

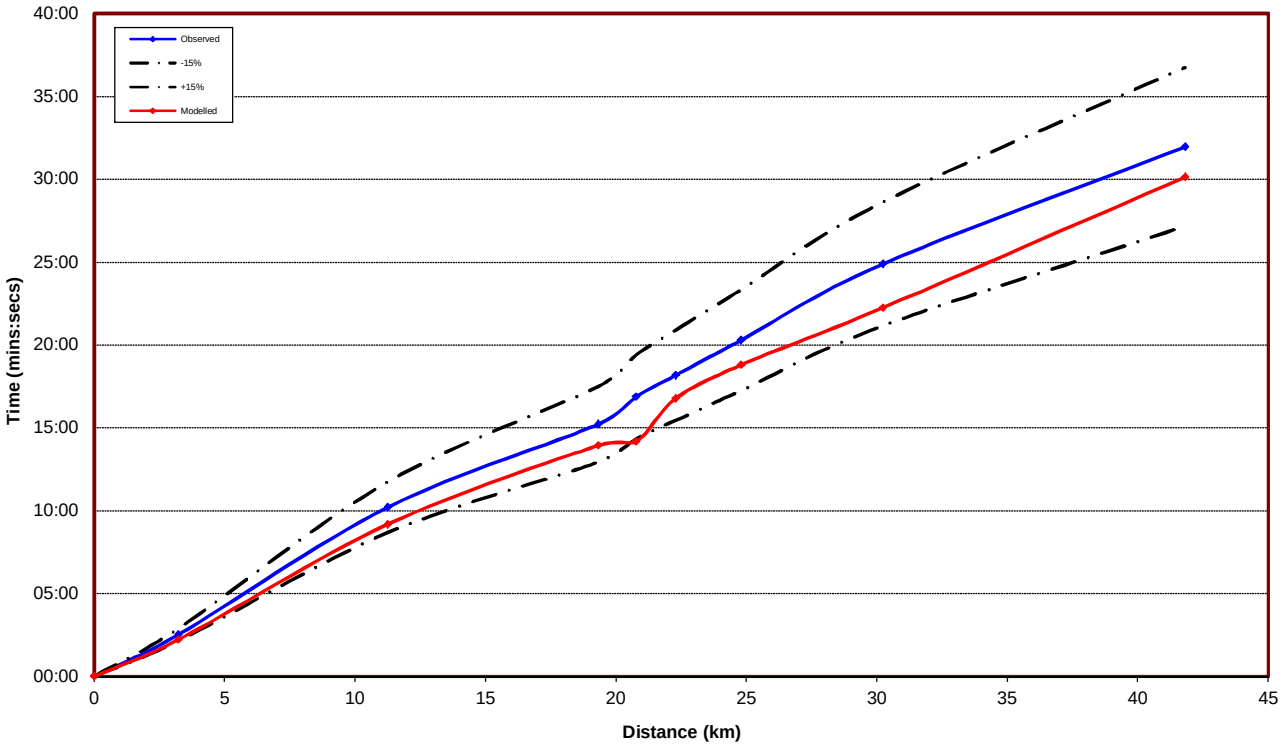


Figure H.0.35: Journey time – Route 2 Southbound (15:00-16:00)

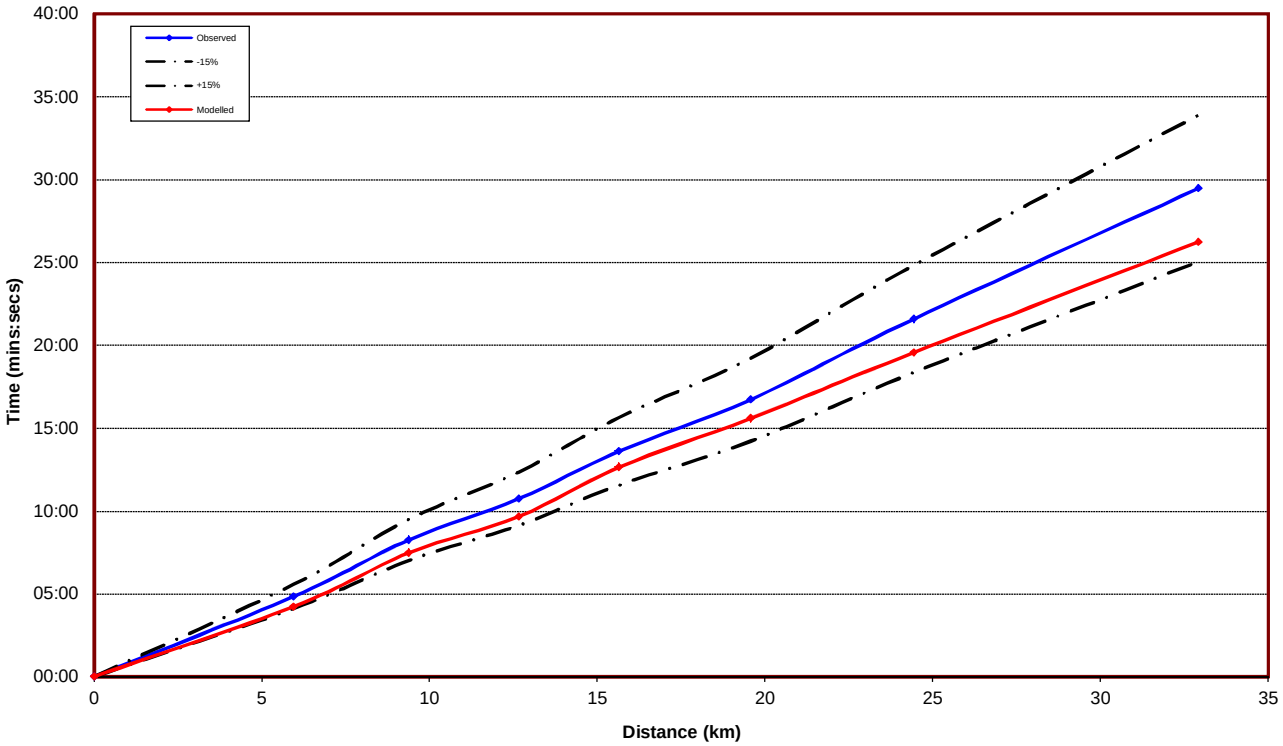


Figure H.0.36: Journey time – Route 3 Northbound (15:00-16:00)

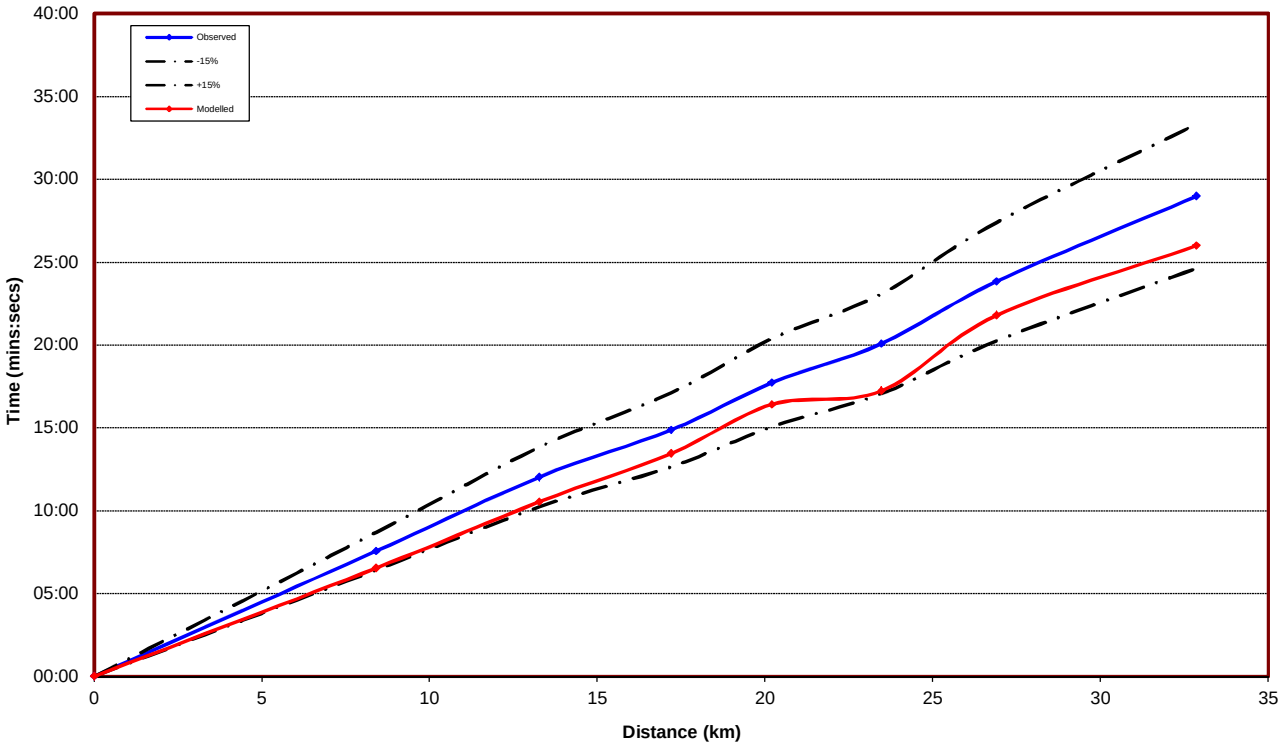


Figure H.0.37: Journey time – Route 3 Southbound (15:00-16:00)

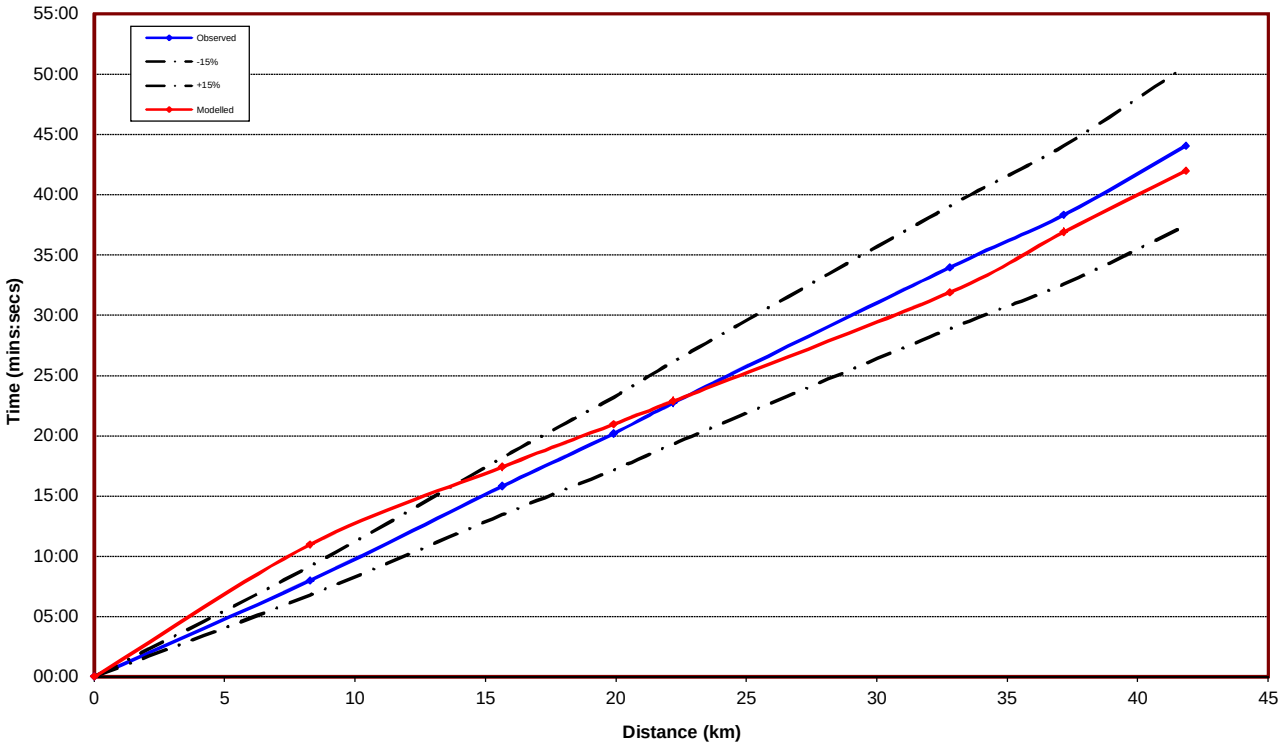


Figure H.0.38: Journey time – Route 4 Eastbound (15:00-16:00)

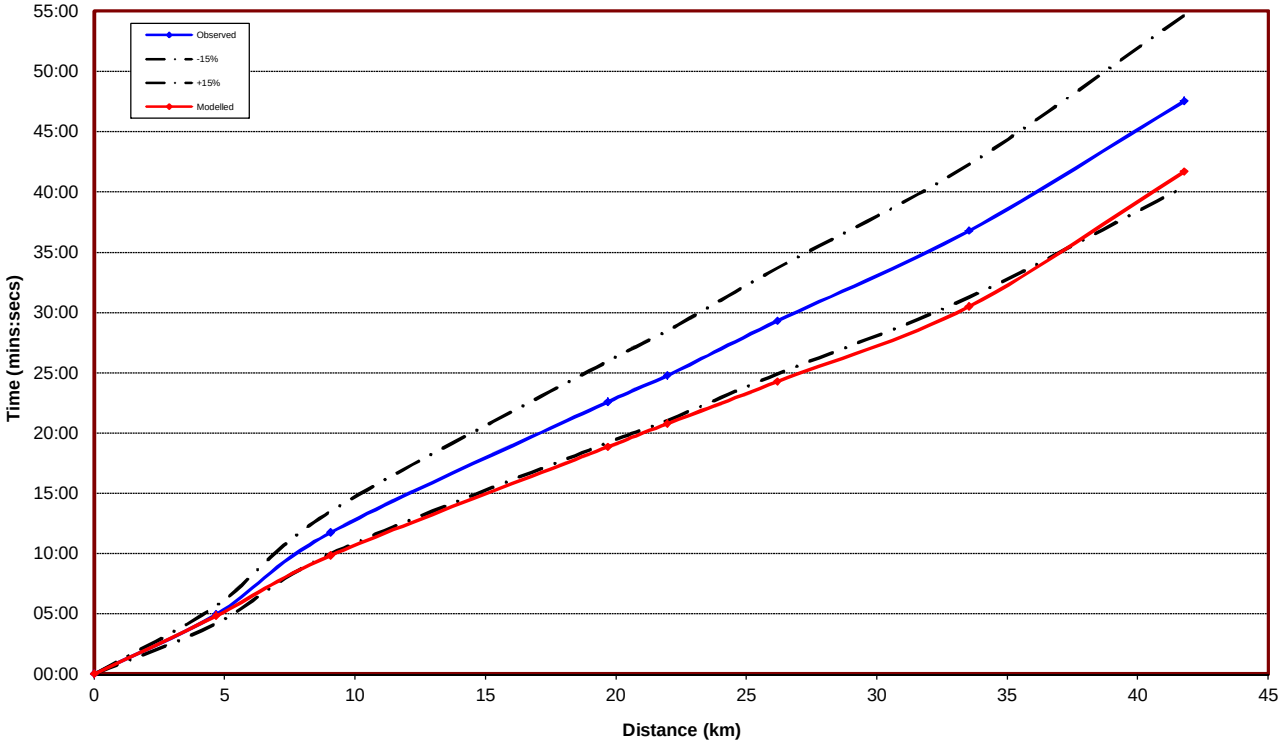


Figure H.0.39: Journey time – Route 4 Westbound (15:00-16:00)

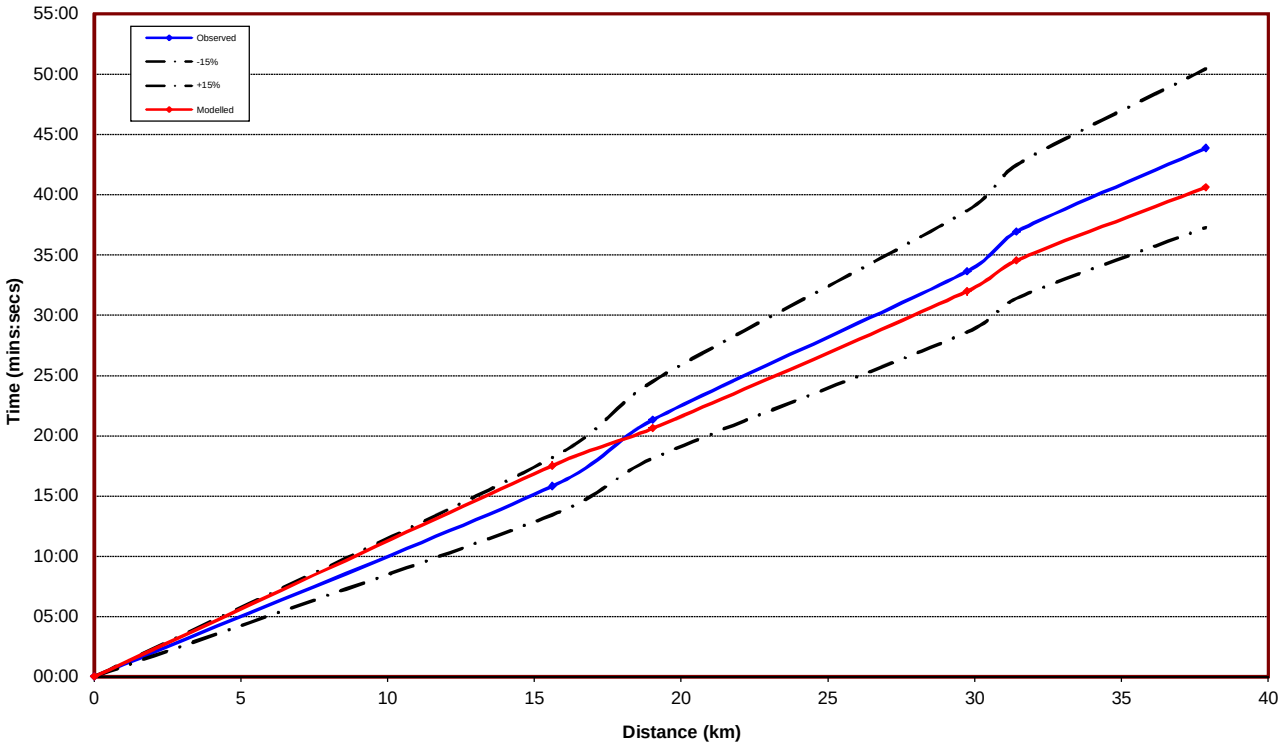


Figure H.0.40: Journey time – Route 5 Eastbound (15:00-16:00)

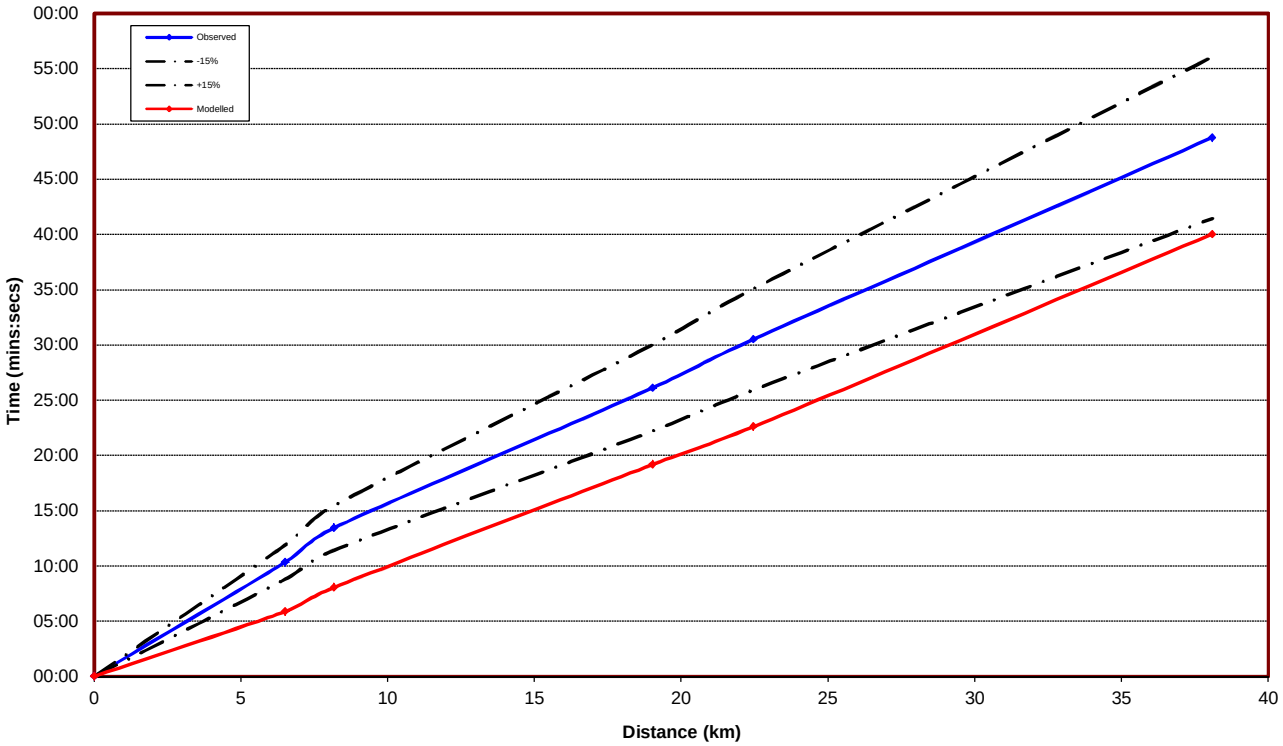


Figure H.0.41: Journey time – Route 5 Westbound (15:00-16:00)

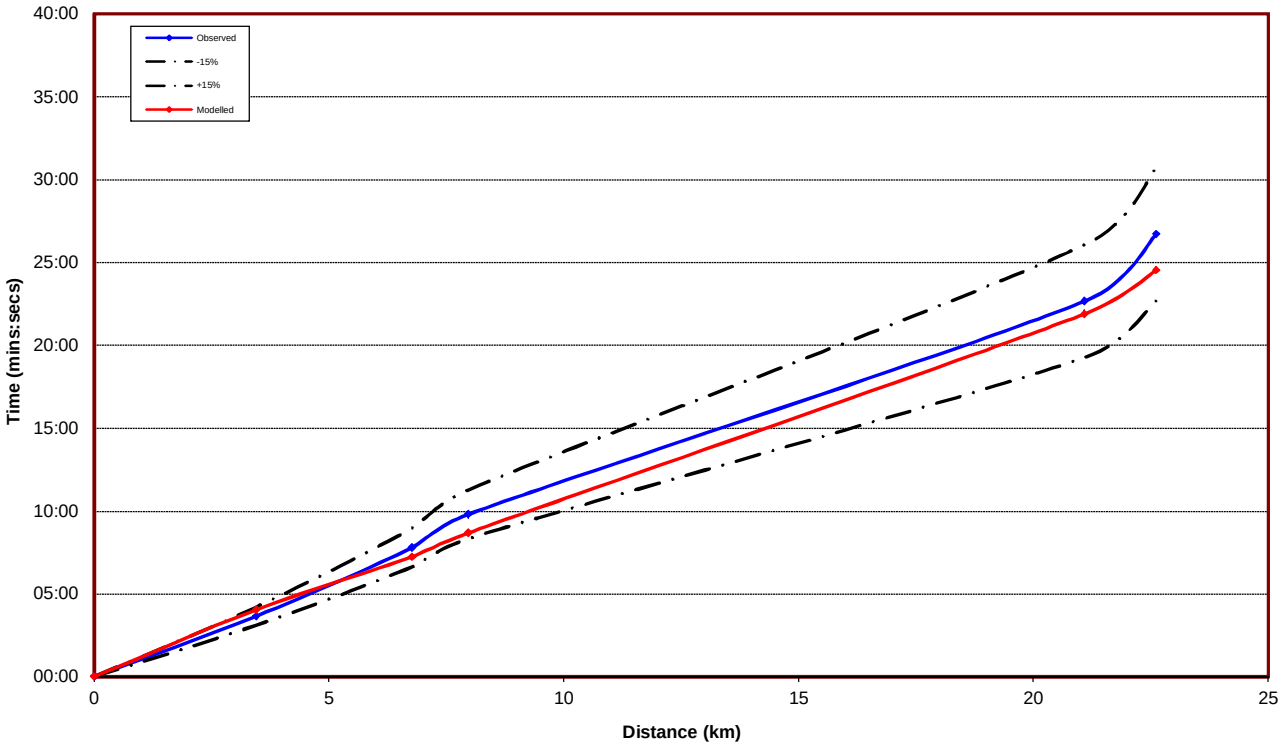


Figure H.0.42: Journey time – Route 6 Northbound (15:00-16:00)

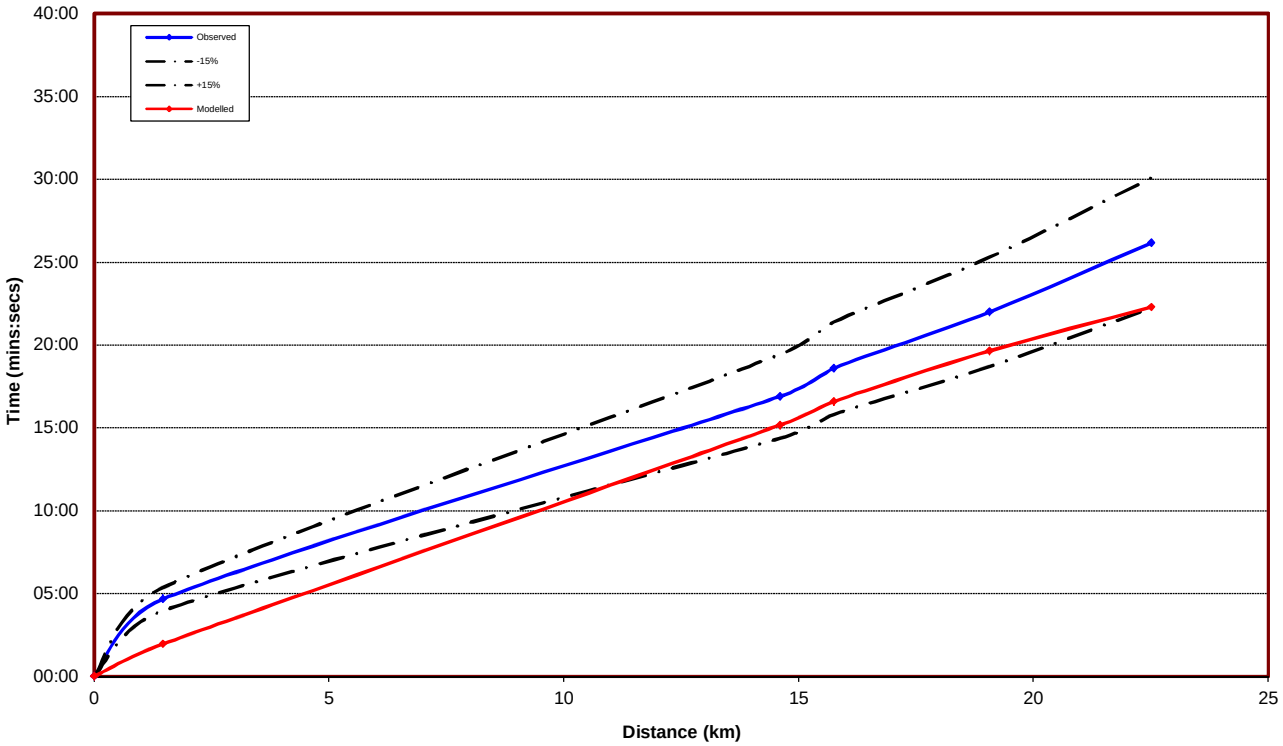


Figure H.0.43: Journey time – Route 6 Southbound (15:00-16:00)

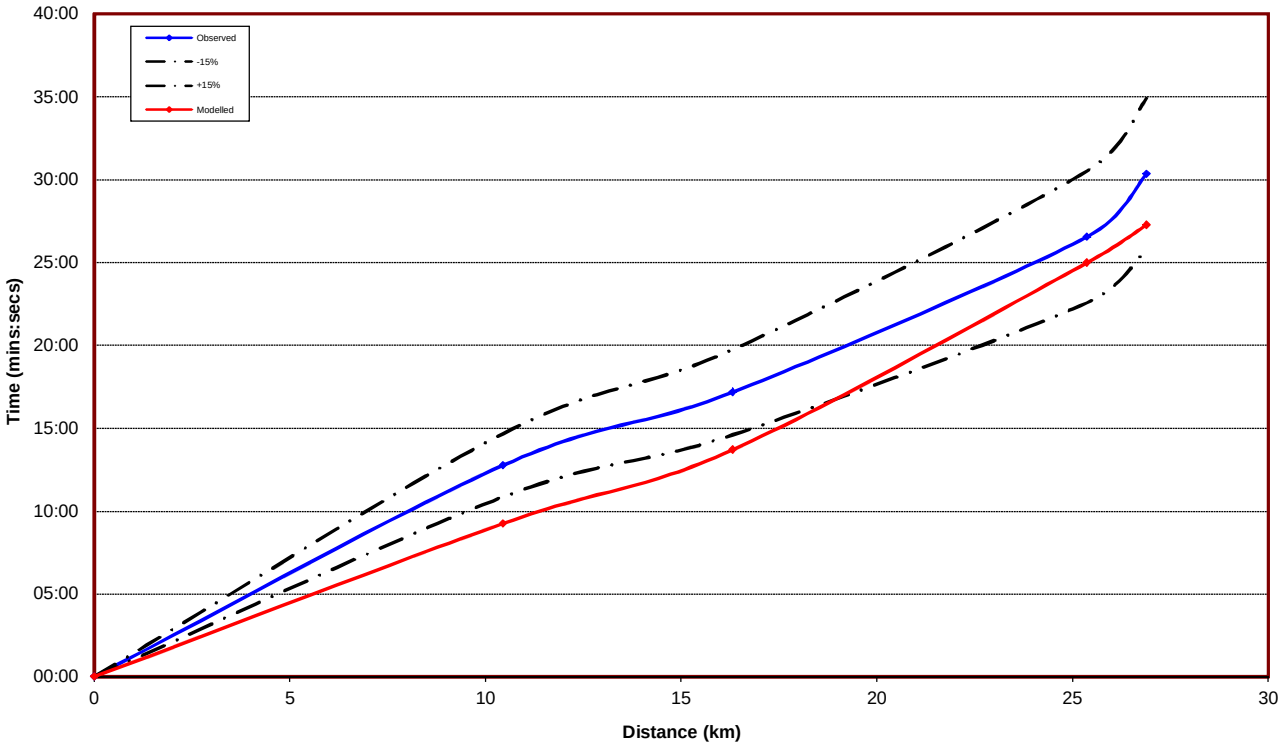


Figure H.0.44: Journey time – Route 7 Northbound (15:00-16:00)

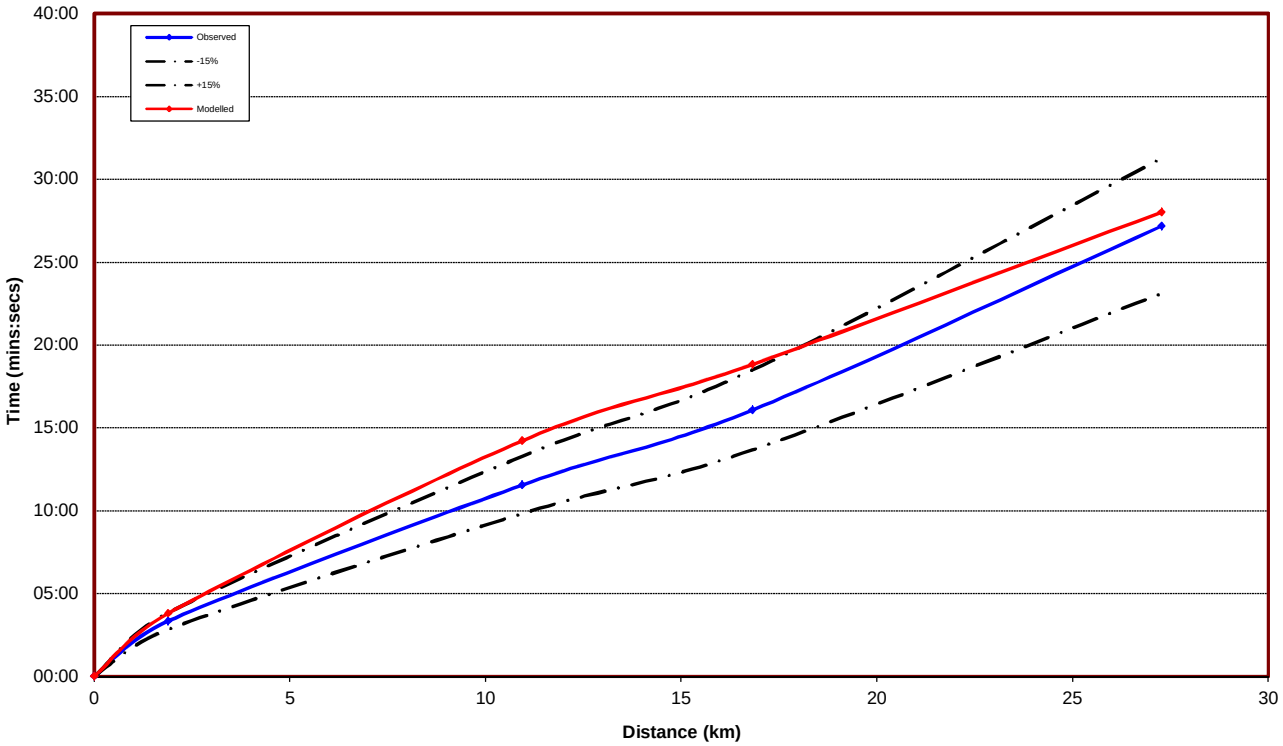


Figure H.0.45: Journey time – Route 7 Southbound (15:00-16:00)

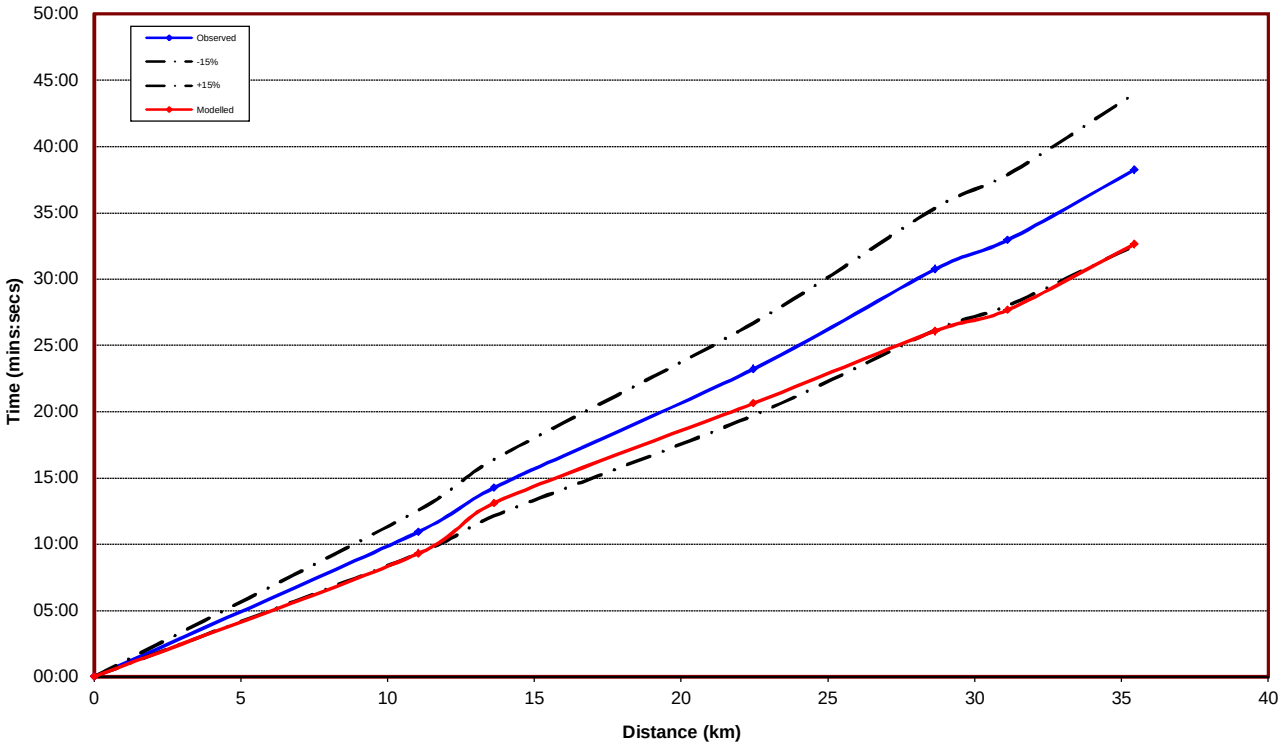


Figure H.0.46: Journey time – Route 8 Northbound (15:00-16:00)

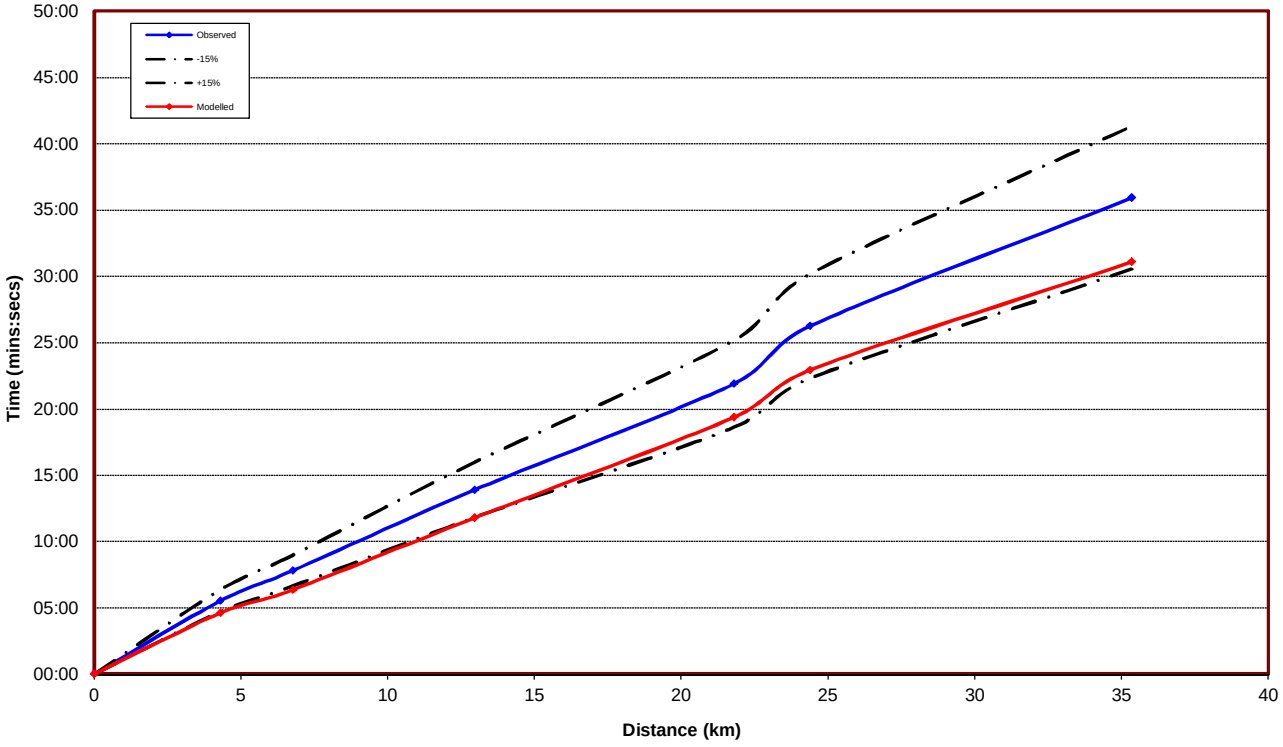


Figure H.0.47: Journey time – Route 8 Southbound (15:00-16:00)

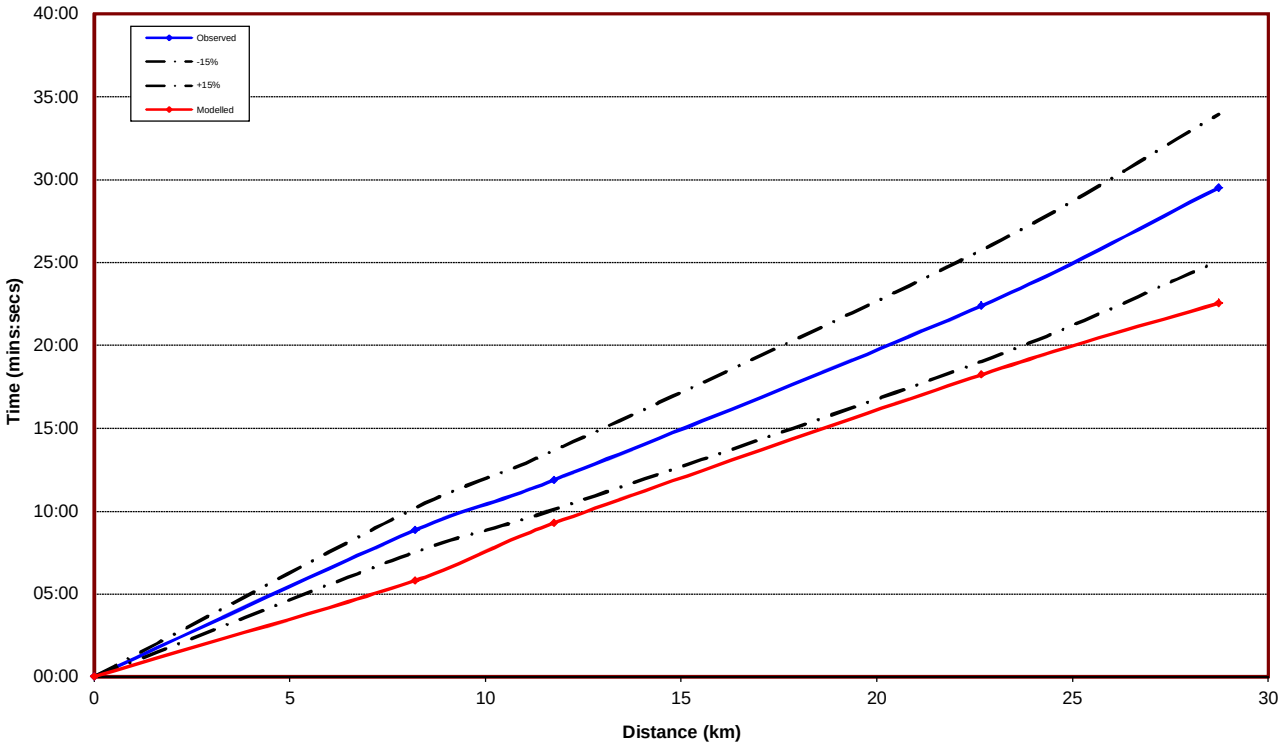


Figure H.0.48: Journey time – Route 9 Eastbound (15:00-16:00)

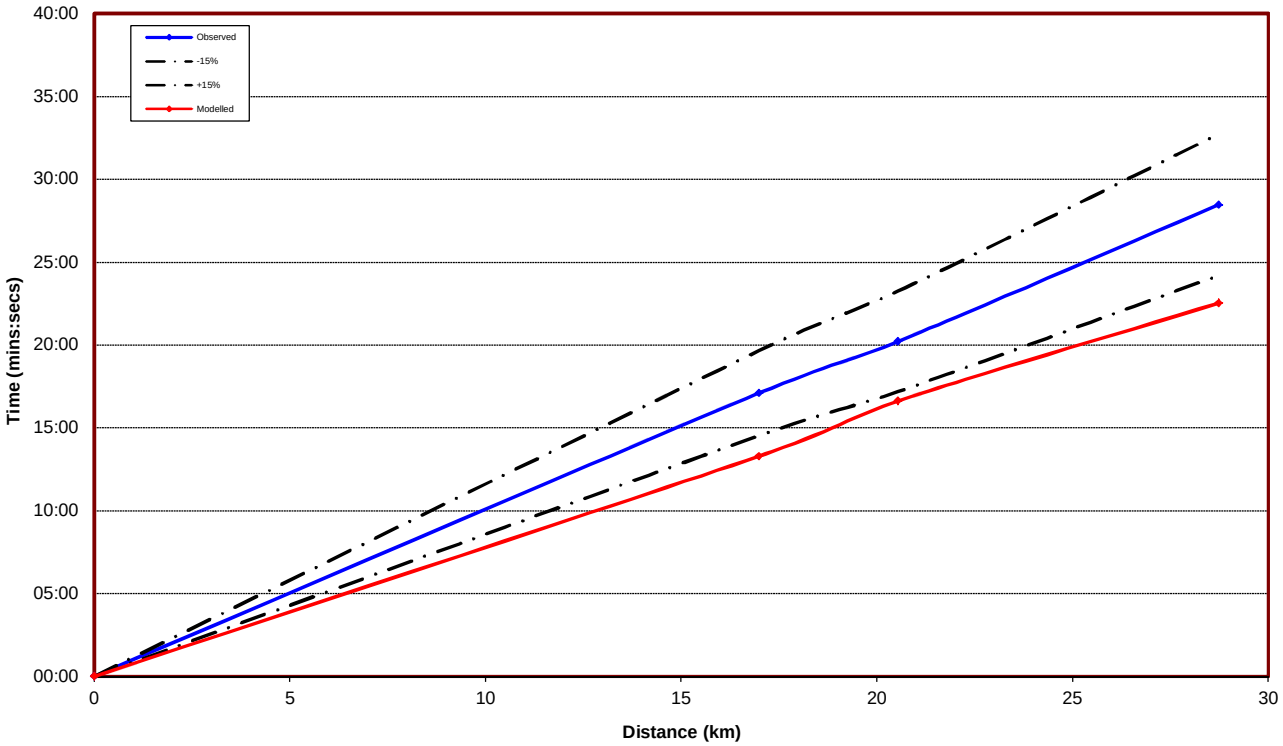


Figure H.0.49: Journey time – Route 9 Westbound (15:00-16:00)

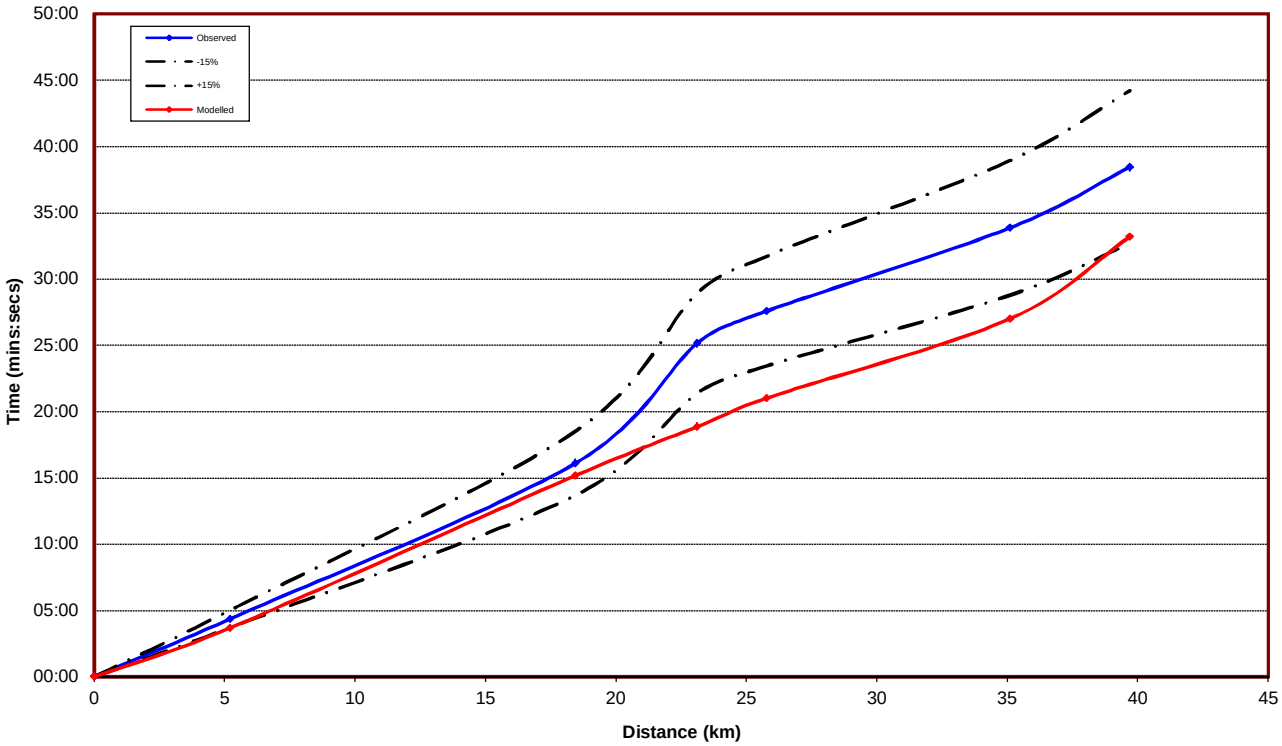


Figure H.0.50: Journey time – Route 10 Northbound (15:00-16:00)

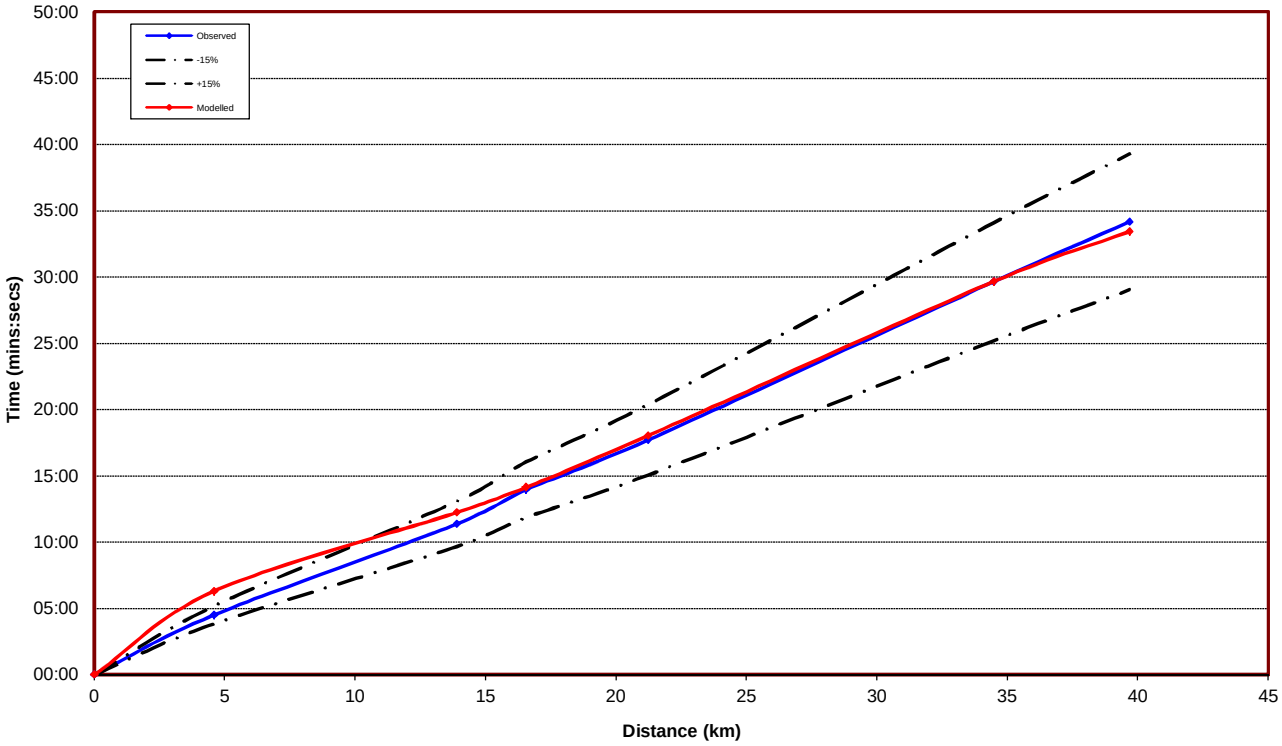


Figure H.0.51: Journey time – Route 10 Southbound (15:00-16:00)

Journey time validation graphs (17:00-18:00)

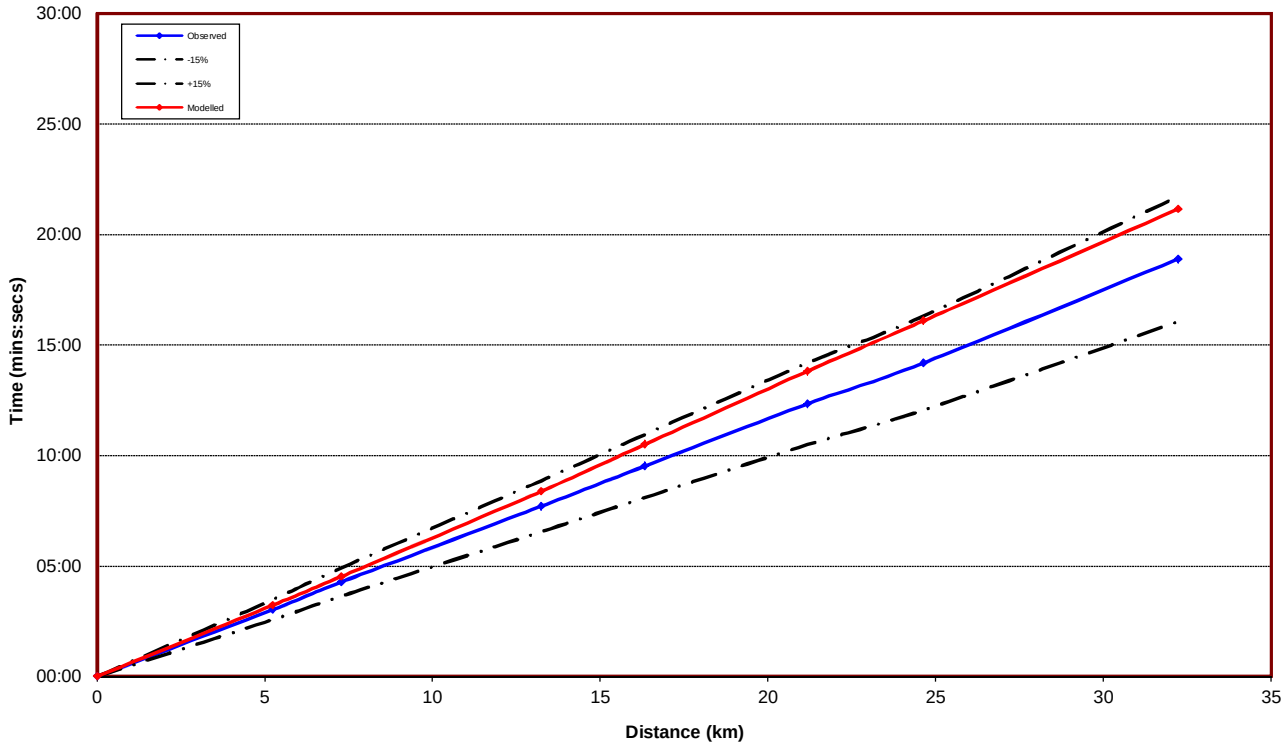


Figure H.0.52: Journey time – Route 1 Eastbound (17:00-18:00)

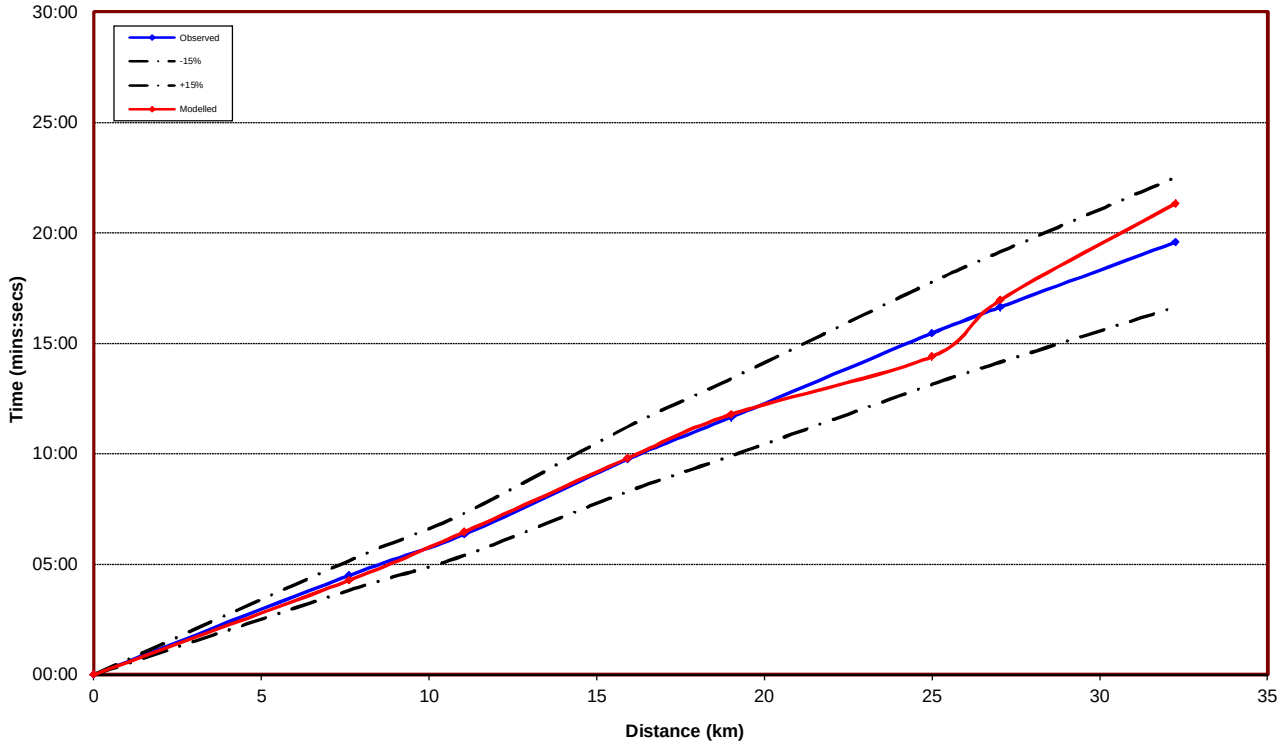


Figure H.0.53: Journey time – Route 1 Westbound (17:00-18:00)

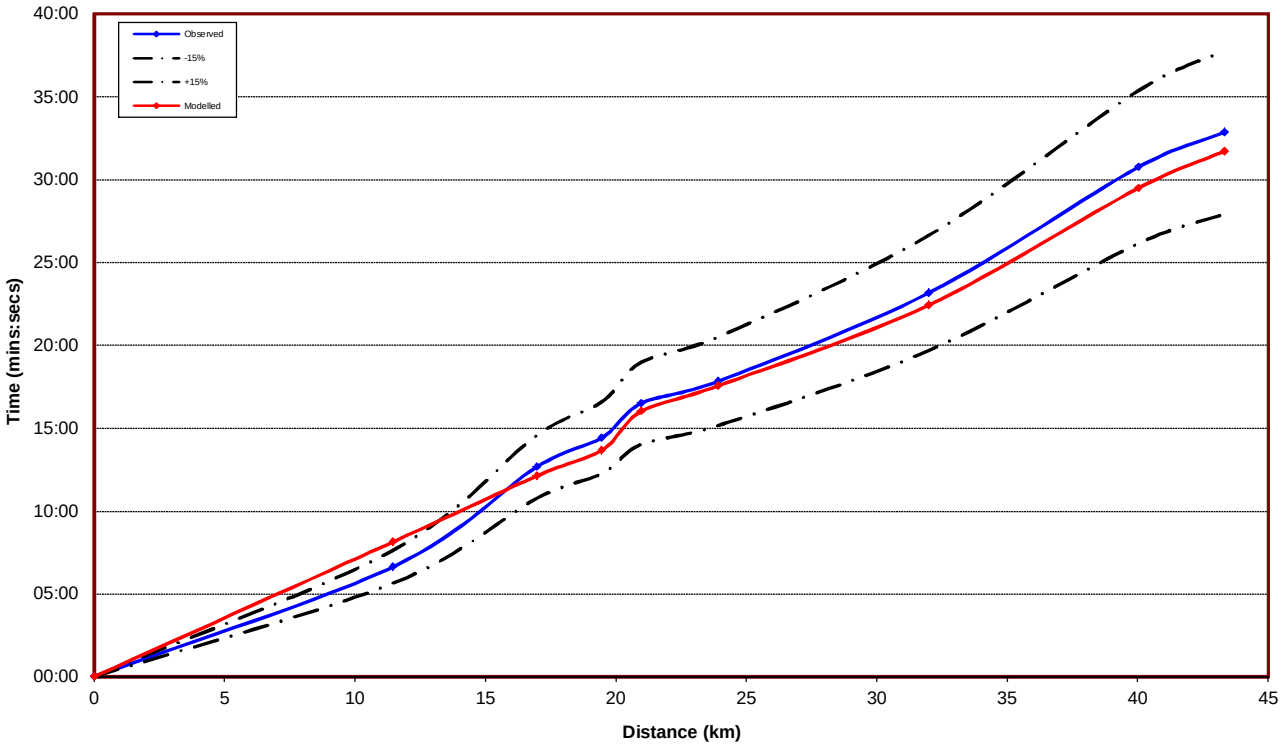


Figure H.0.54: Journey time – Route 2 Northbound (17:00-18:00)

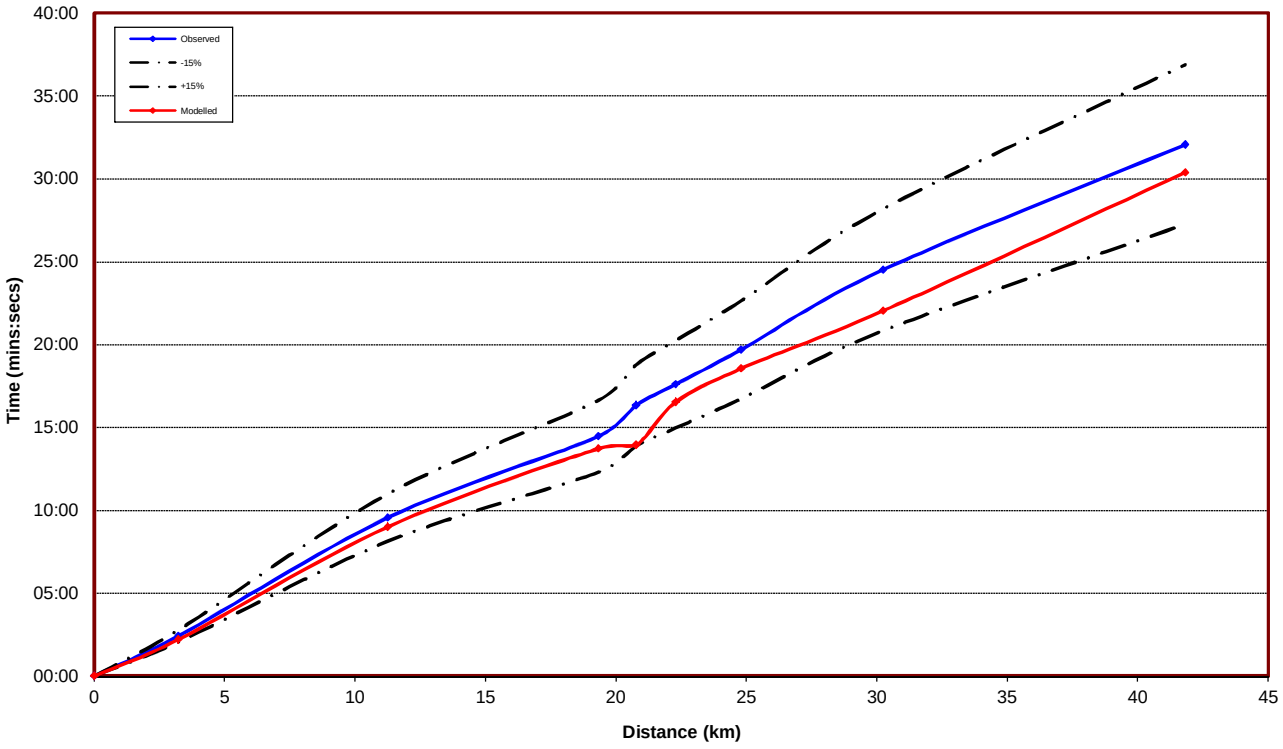


Figure H.0.55: Journey time – Route 2 Southbound (17:00-18:00)

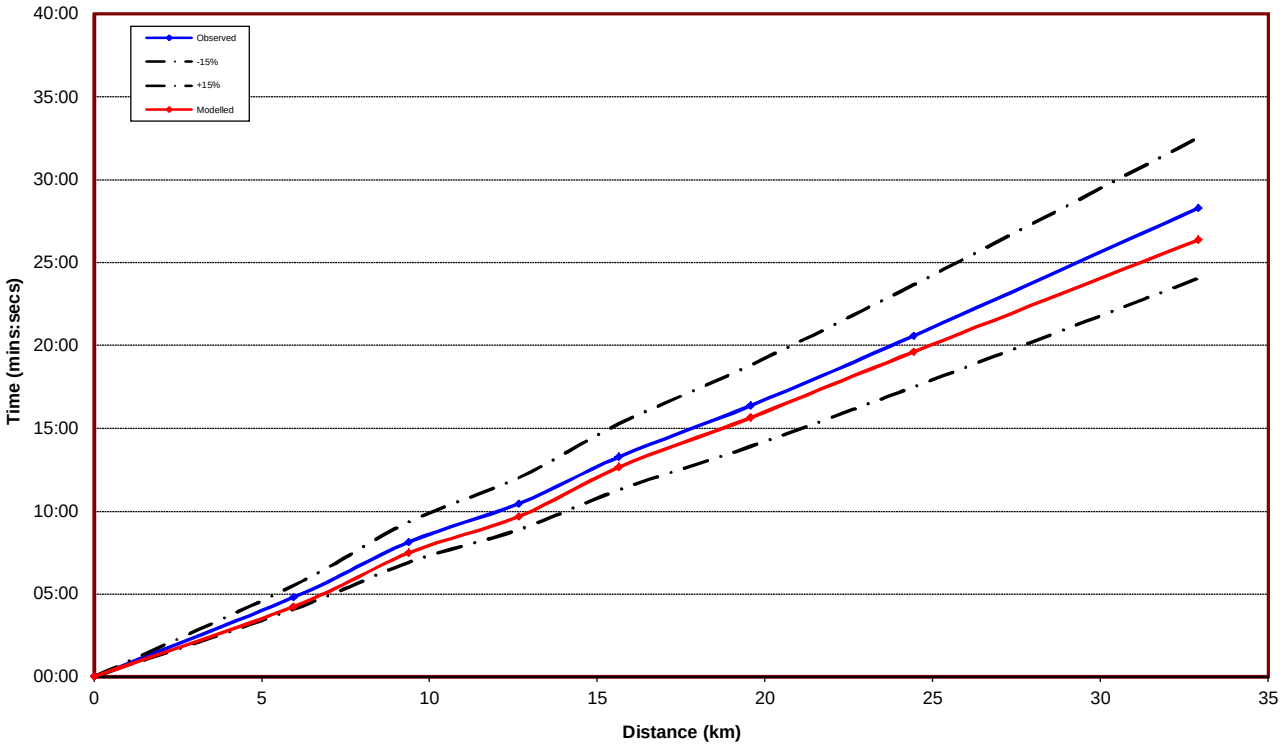


Figure H.0.56: Journey time – Route 3 Northbound (17:00-18:00)

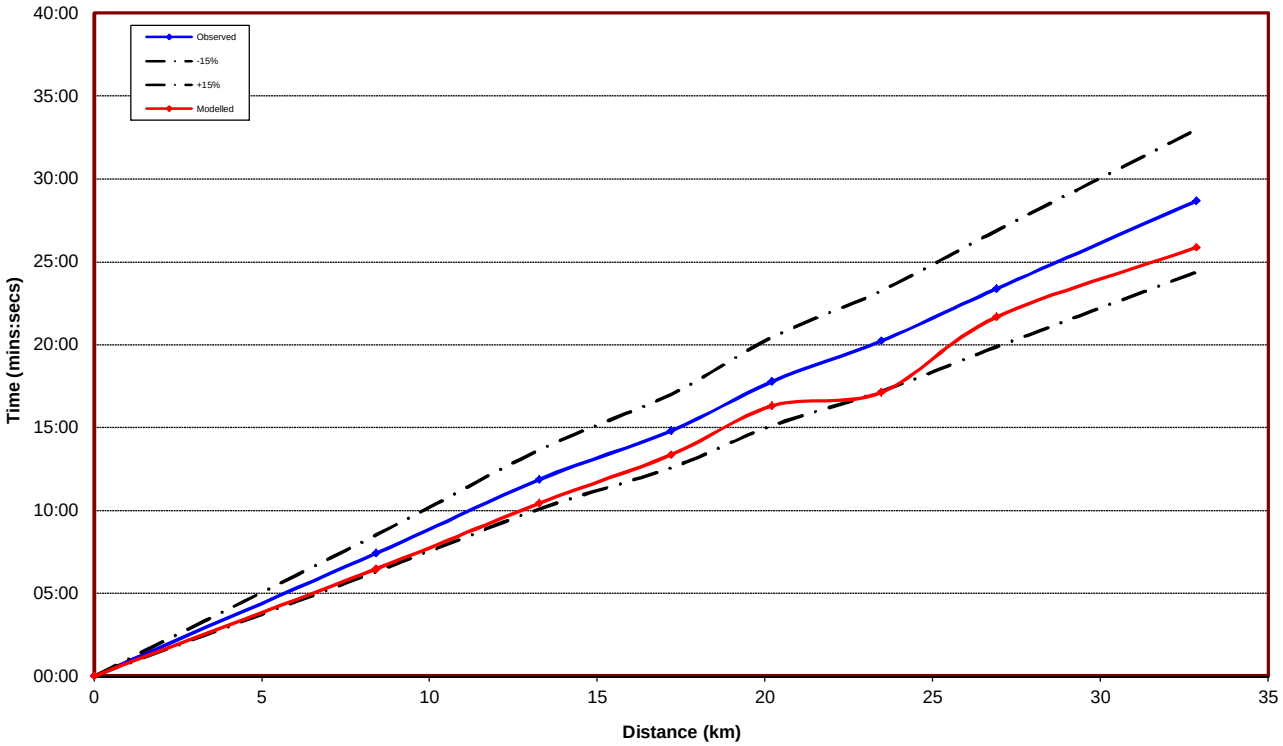


Figure H.0.57: Journey time – Route 3 Southbound (17:00-18:00)

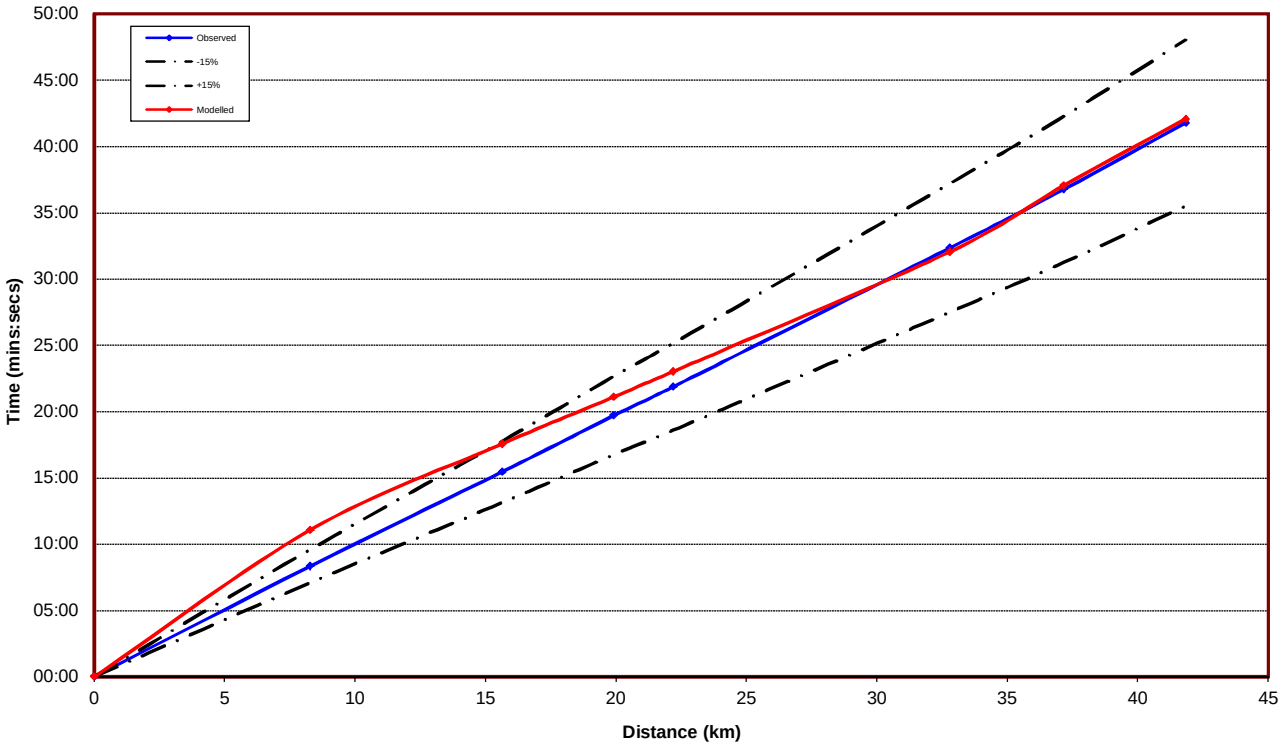


Figure H.0.58: Journey time – Route 4 Eastbound (17:00-18:00)

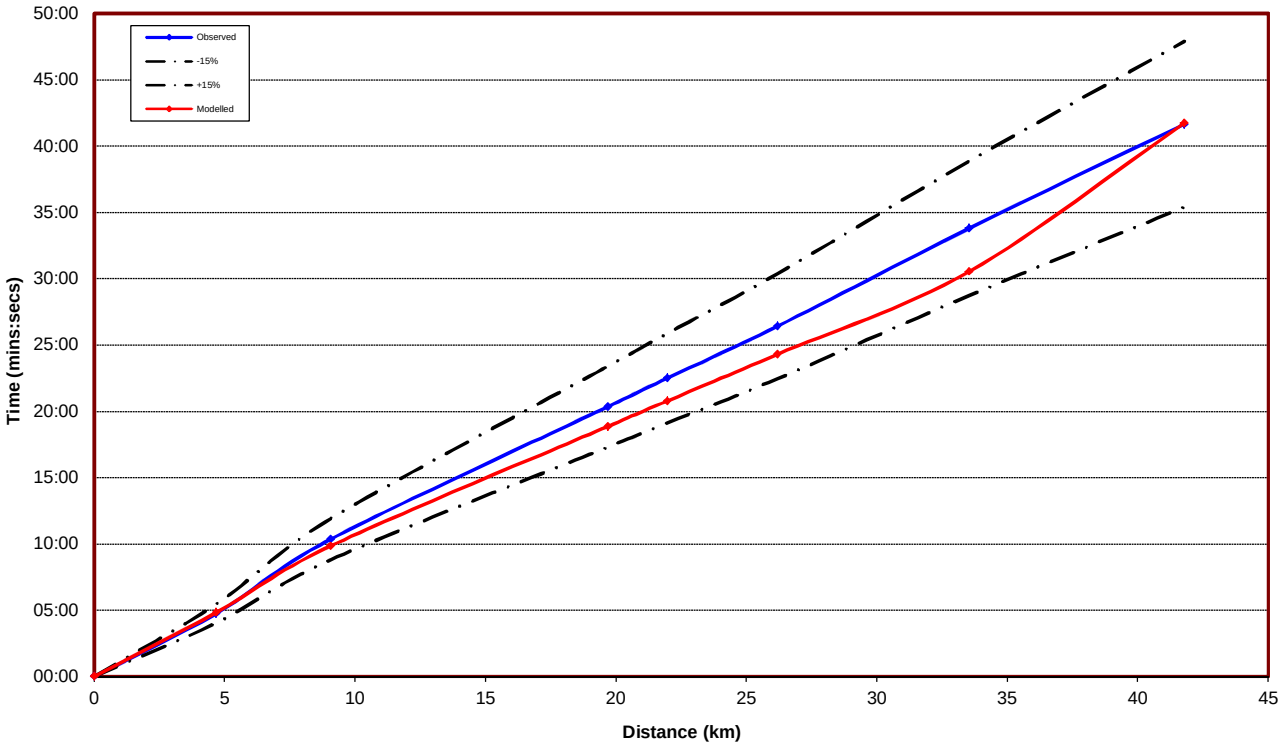


Figure H.0.59: Journey time – Route 4 Westbound (17:00-18:00)

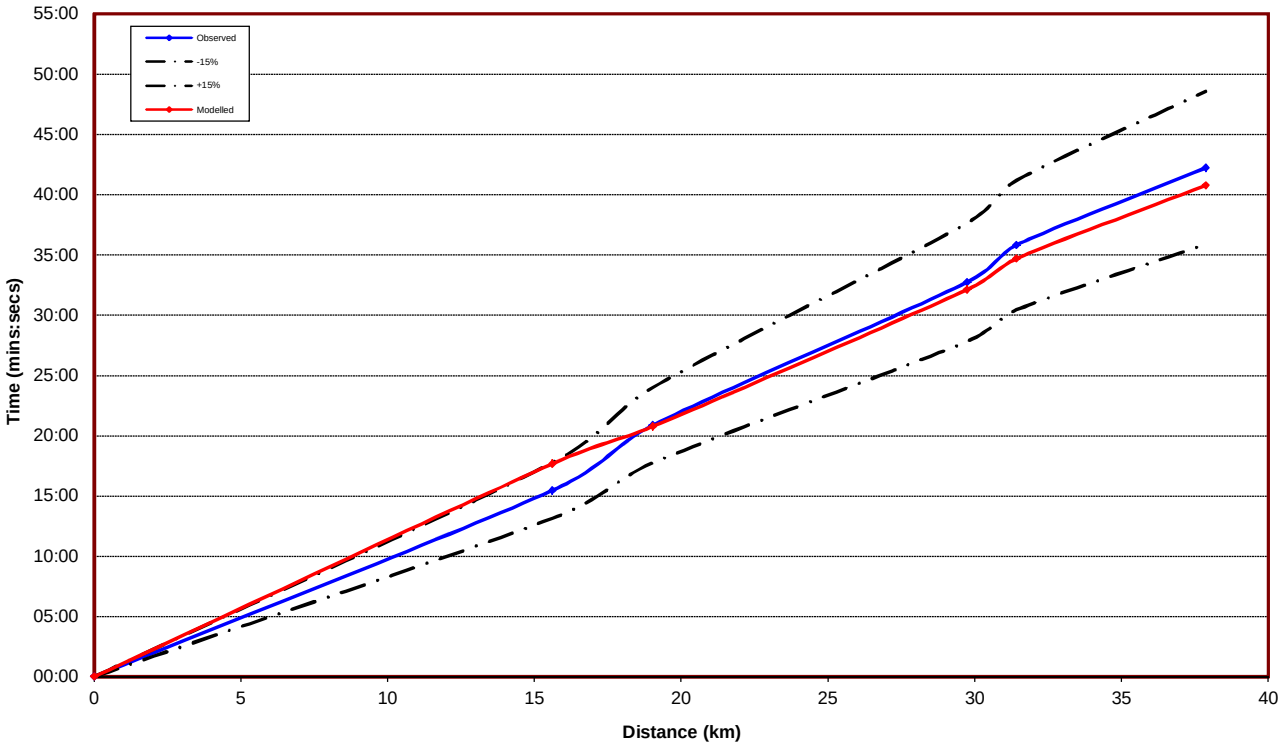


Figure H.0.60: Journey time – Route 5 Eastbound (17:00-18:00)

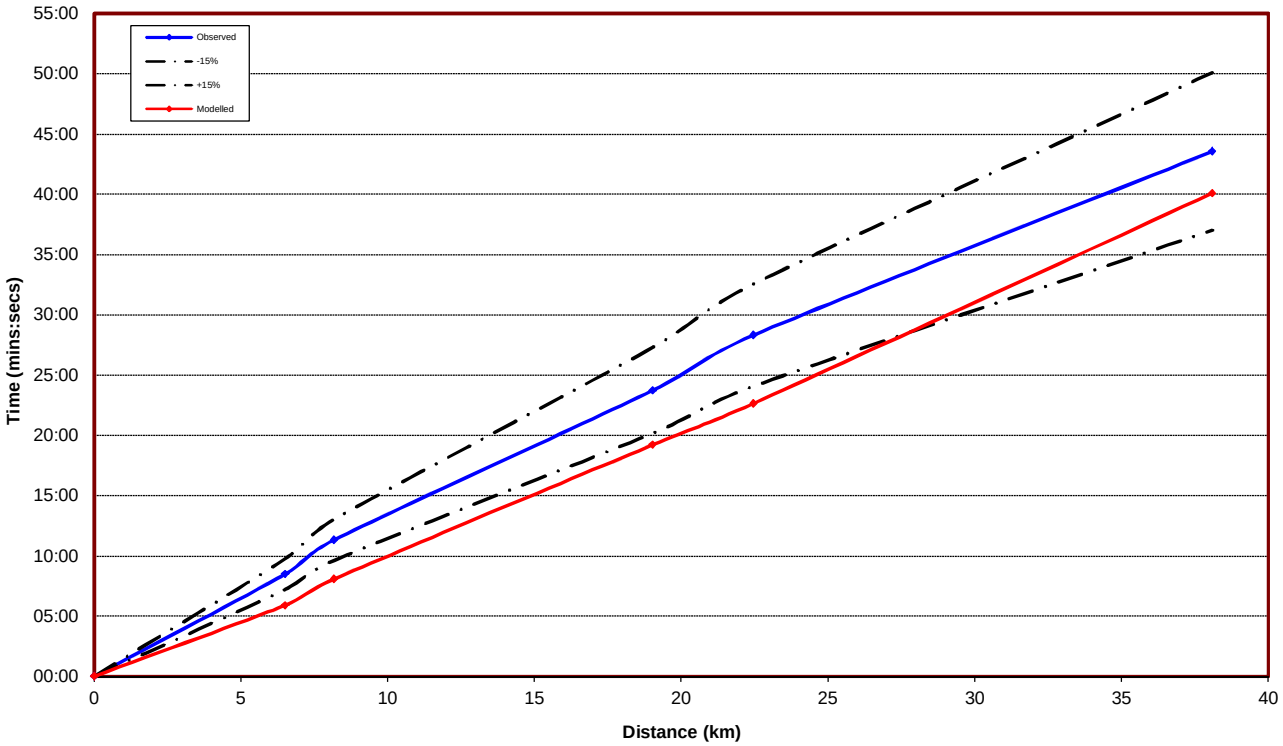


Figure H.0.61: Journey time – Route 5 Westbound (17:00-18:00)

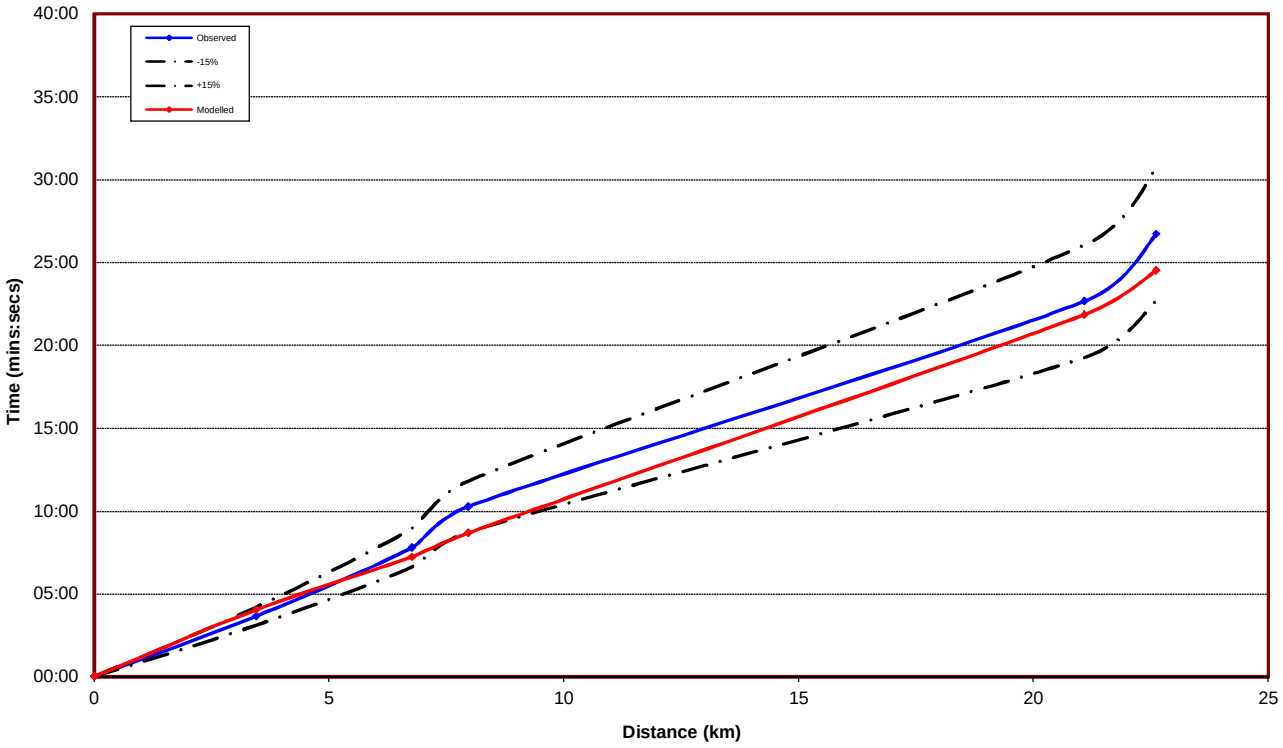


Figure H.0.62: Journey time – Route 6 Northbound (17:00-18:00)

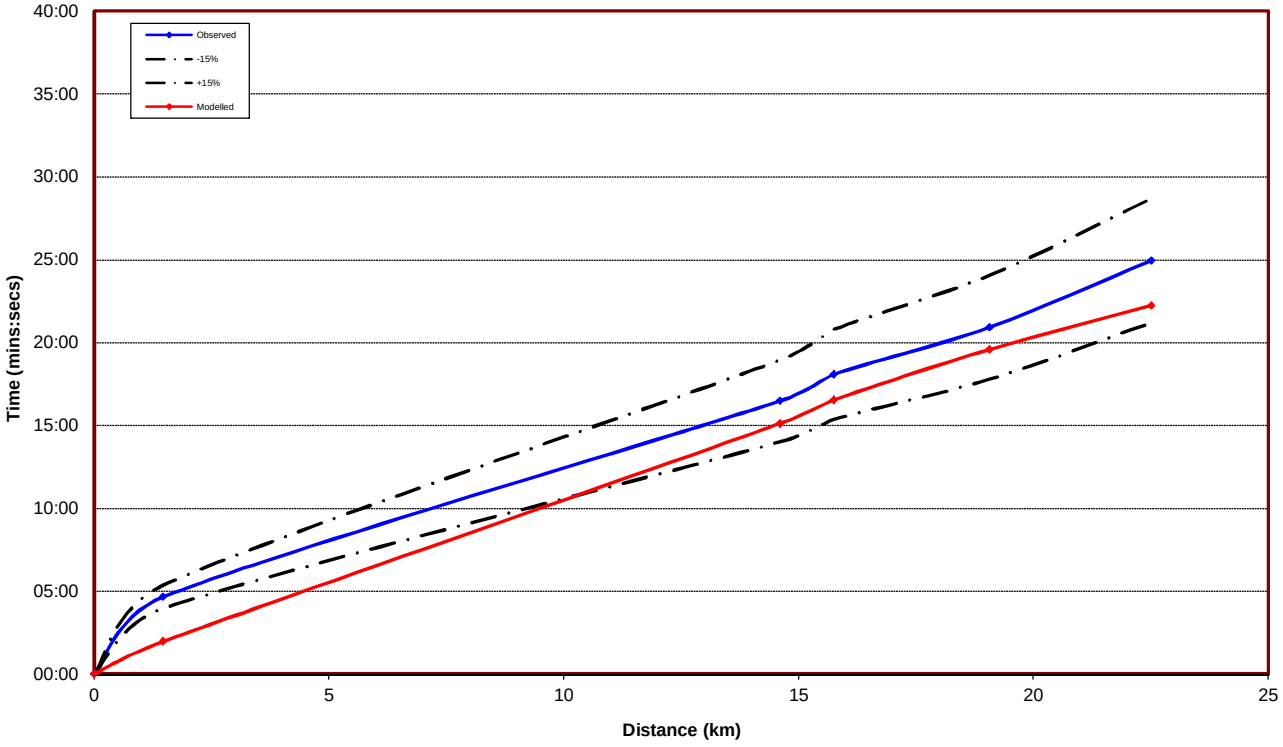


Figure H.0.63: Journey time – Route 6 Southbound (17:00-18:00)

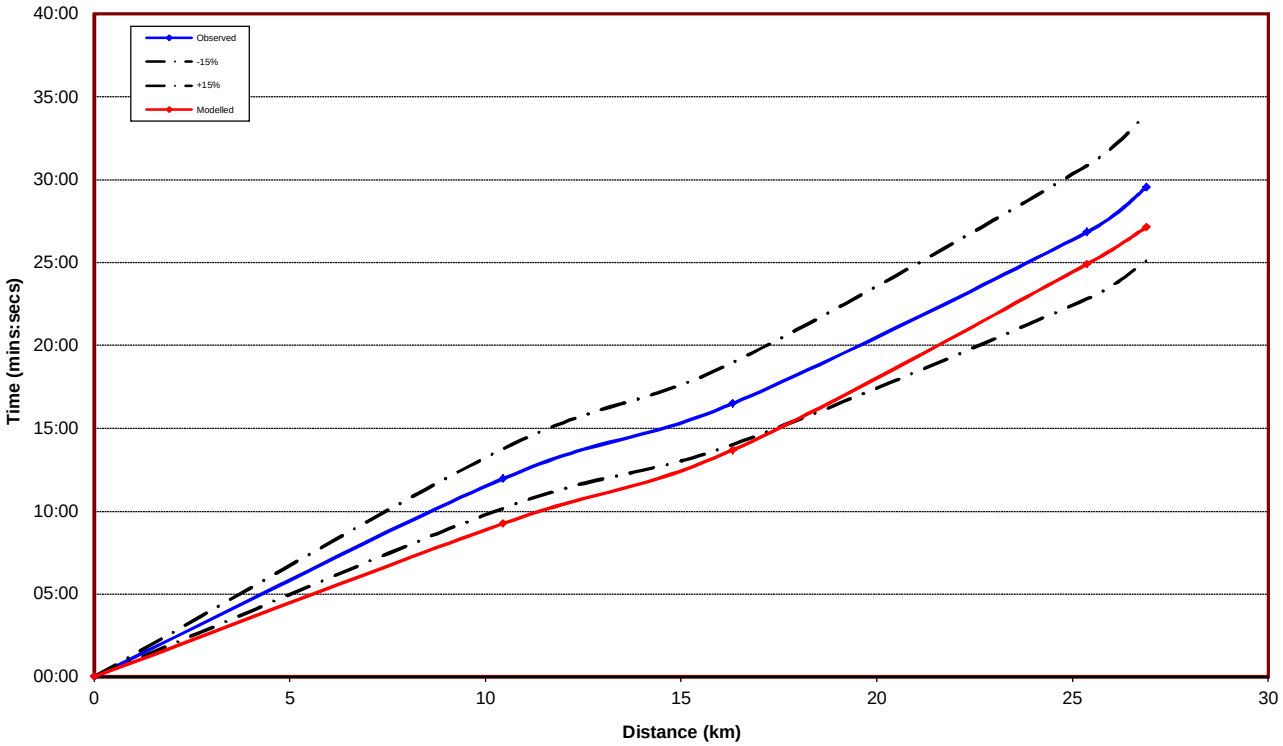


Figure H.0.64: Journey time – Route 7 Northbound (17:00-18:00)

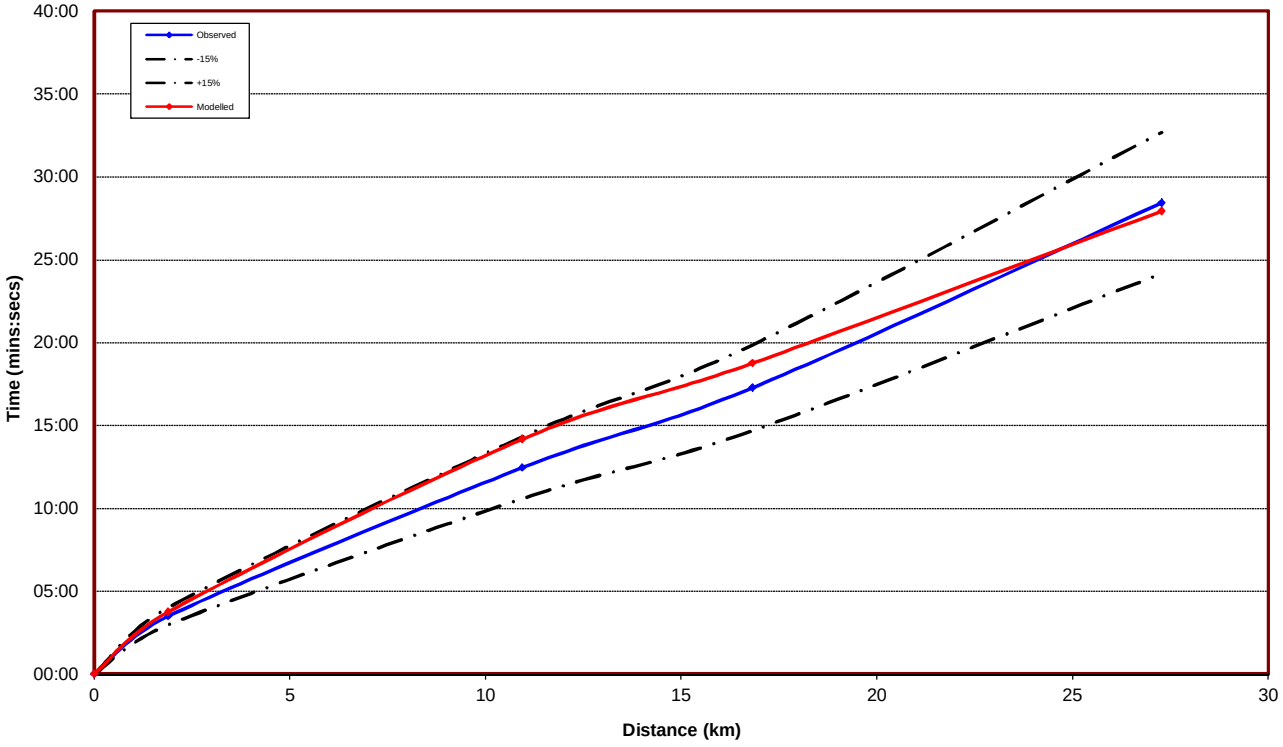


Figure H.0.65: Journey time – Route 7 Southbound (17:00-18:00)

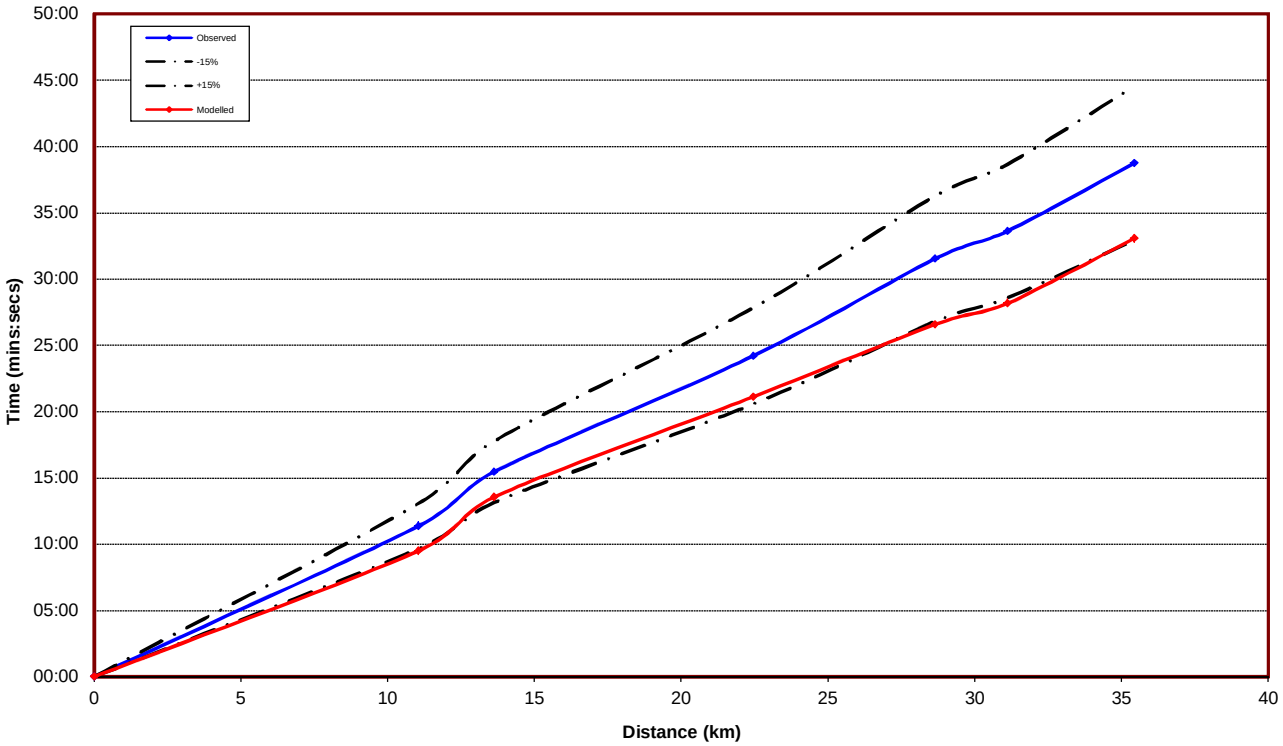


Figure H.0.66: Journey time – Route 8 Northbound (17:00-18:00)

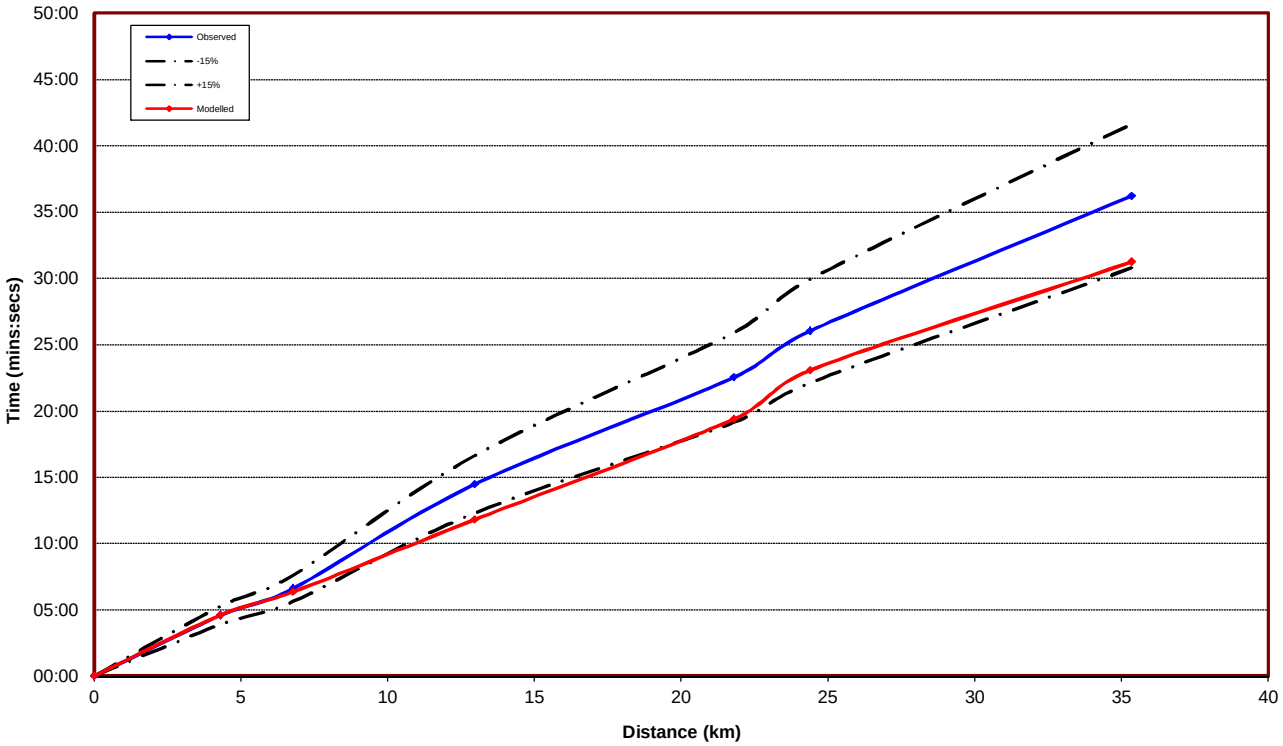


Figure H.0.67: Journey time – Route 8 Southbound (17:00-18:00)

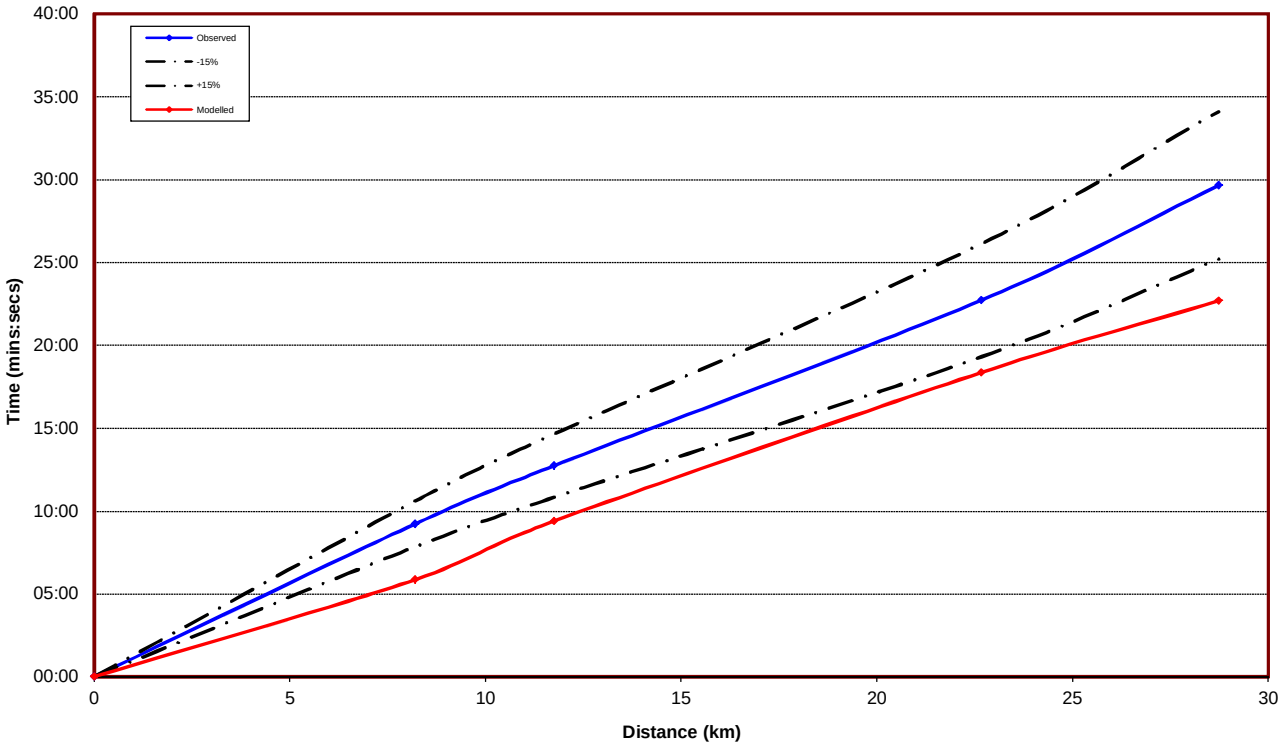


Figure H.0.68: Journey time – Route 9 Eastbound (17:00-18:00)

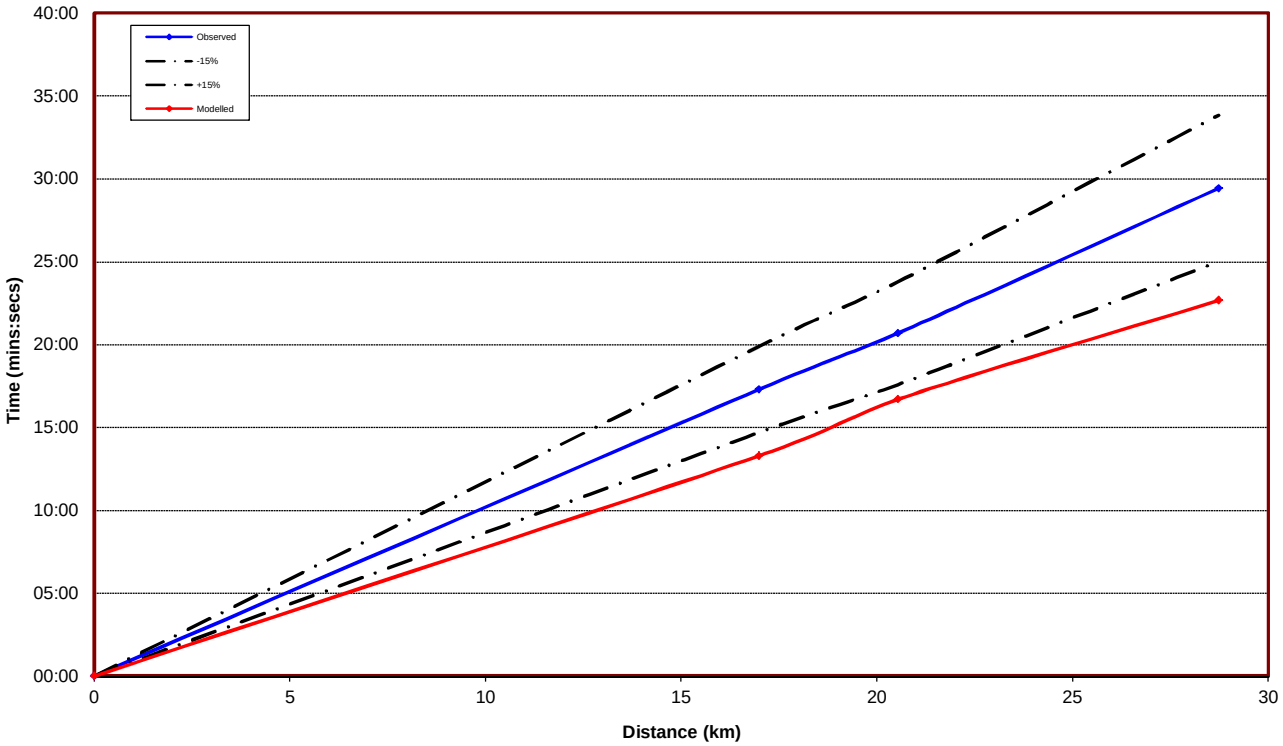


Figure H.0.69: Journey time – Route 9 Westbound (17:00-18:00)

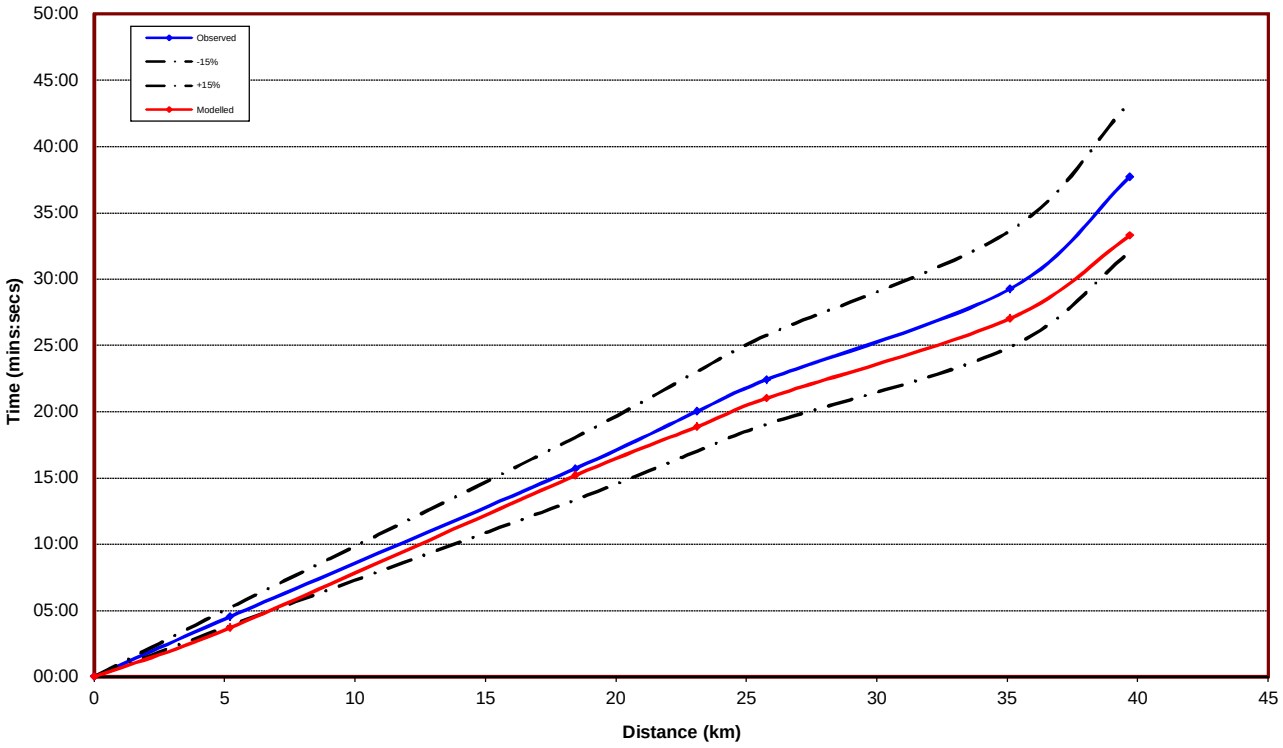


Figure H.0.70: Journey time – Route 10 Northbound (17:00-18:00)

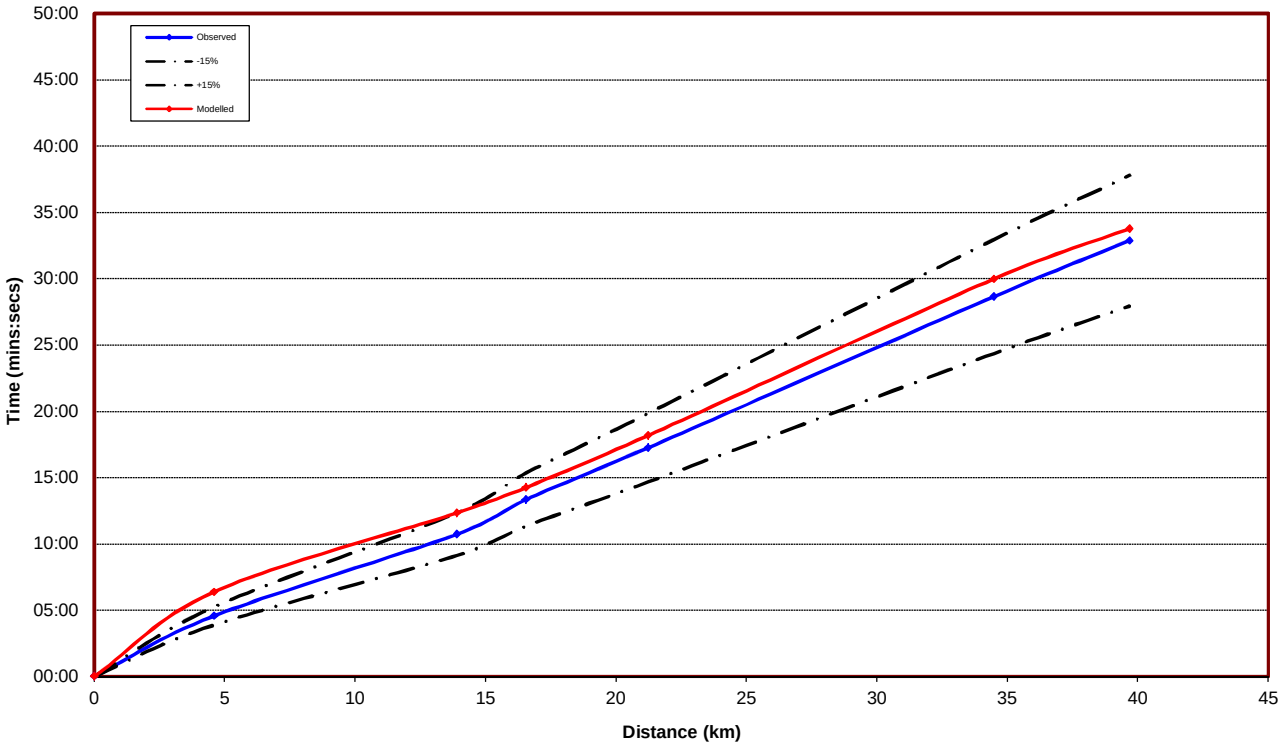
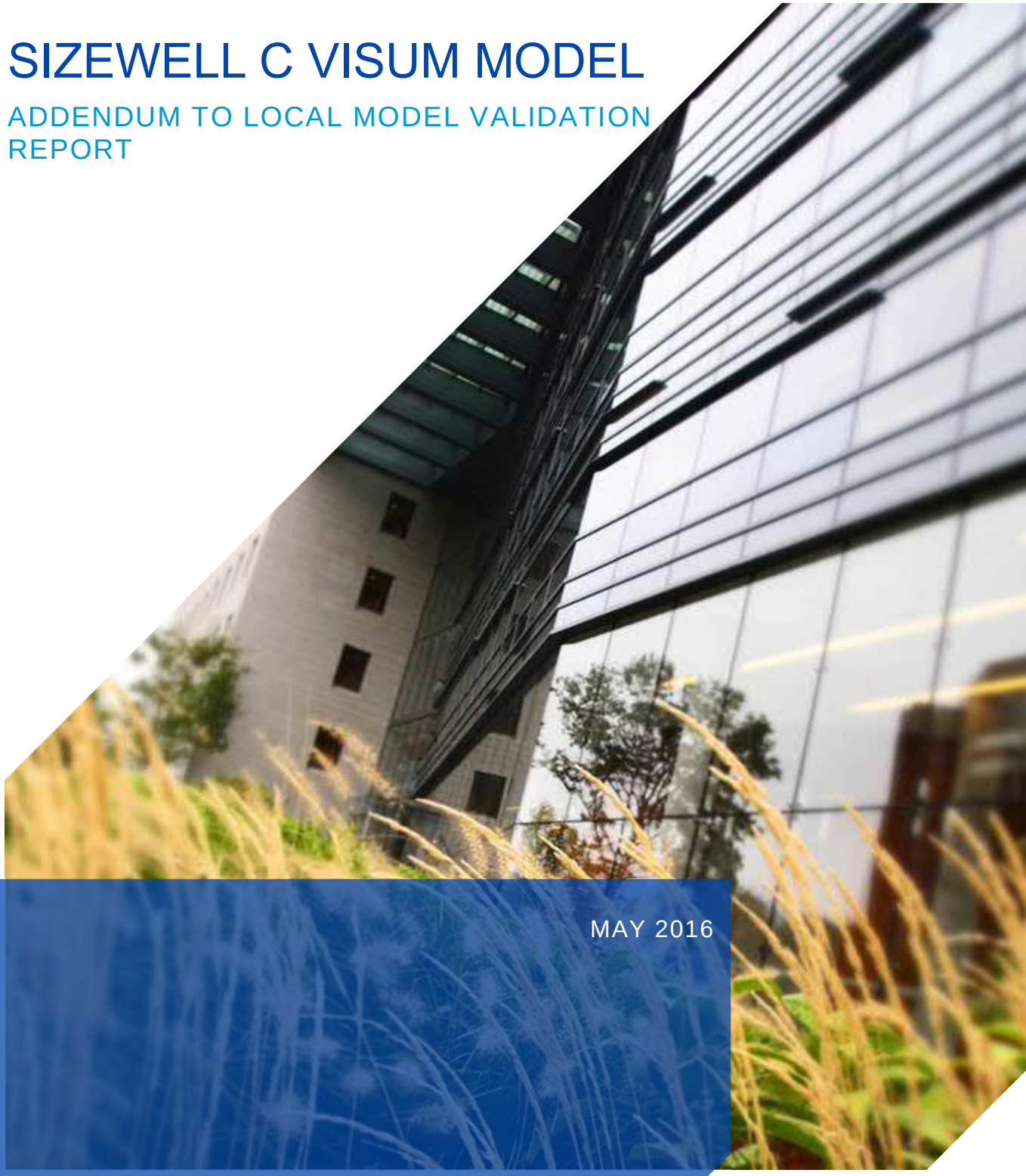


Figure H.0.71: Journey time – Route 10 Southbound (17:00-18:00)

SIZEWELL C VISUM MODEL

ADDENDUM TO LOCAL MODEL VALIDATION REPORT



MAY 2016

WSP | PARSONS BRINCKERHOFF

SIZEWELL C VISUM MODEL

ADDENDUM TO LOCAL MODEL VALIDATION REPORT

EDF Energy

Project no: 50400326
Date: May 2016

WSP | Parsons Brinckerhoff
Mountbatten House
Basing View
Basingstoke
Hampshire
RG21 4HJ

Tel: +44 (0)1256 318000
Fax: +44 (0)1256 318700
www.wspgroup.com
www.pbworld.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1 INTRODUCTION 3

1.1 BACKGROUND 3

1.2 MODEL BASIS 3

1.3 REPORT PURPOSE AND STRUCTURE 4

2 HIGHWAY ASSIGNMENT MODEL – NETWORK DEVELOPMENT 5

2.1 INITIAL MODELS 5

2.2 TIME-SPECIFIC ATTRIBUTES 5

3 HIGHWAY ASSIGNMENT MODEL – MATRIX DEVELOPMENT 6

3.1 INTRODUCTION 6

3.2 INITIAL MATRIX 6

3.3 MATRIX CALIBRATION 12

4 HIGHWAY ASSIGNMENT MODEL – CALIBRATION 13

4.1 INTRODUCTION 13

4.2 CALIBRATION AND VALIDATION CRITERIA 13

4.3 SURVEY DATA CHECKS 14

4.4 MODEL CALIBRATION PROCESS 14

4.5 MODEL CALIBRATION RESULTS 16

5 HIGHWAY ASSIGNMENT MODEL – VALIDATION 22

5.1 INTRODUCTION 22

5.2 MODEL VALIDATION RESULTS 22

6 SUMMARY 39

APPENDICES 42

Appendix A: Traffic Survey Locations
Appendix B: Traffic Survey Data Exclusions and Balancing
Appendix C: Calibration and Validation Screenlines
Appendix D: 2015 Model Link Flow Calibration Results
Appendix E: 2015 Model Link Flow Validation Results
Appendix F: 2015 Model Journey Time Validation Results

FIGURES

FIGURE 3.1: MARTLESHAM P&R TRIP DISTRIBUTION ZONES 11
FIGURE 5.1: TRIP LENGTH DISTRIBUTION (06:00-07:00) PRIOR AND FINAL MATRICES 30
FIGURE 5.2: TRIP LENGTH DISTRIBUTION (07:00-08:00) PRIOR AND FINAL MATRICES 31
FIGURE 5.3: TRIP LENGTH DISTRIBUTION (16:00-17:00) PRIOR AND FINAL MATRICES 32
FIGURE 5.4: TRIP LENGTH DISTRIBUTION (18:00-19:00) PRIOR AND FINAL MATRICES 33
FIGURE A.1: ATC AND MCC SURVEY LOCATIONS 44
FIGURE A.2: SCC ATC LOCATIONS 45
FIGURE A.3: TRADS SITES 46
FIGURE A.4: JOURNEY TIME VALIDATION ROUTES 47
FIGURE C.1: CALIBRATION AND VALIDATION SCREENLINES 51
FIGURE D.1: TRAFFIC FLOW CALIBRATION (06:00-07:00) 53
FIGURE D.2: TRAFFIC FLOW CALIBRATION (07:00-08:00) 59
FIGURE D.3: TRAFFIC FLOW CALIBRATION (16:00-17:00) 65
FIGURE D.4: TRAFFIC FLOW CALIBRATION (18:00-19:00) 71
FIGURE E.1: TRAFFIC FLOW VALIDATION (06:00-07:00) 78
FIGURE E.2: TRAFFIC FLOW VALIDATION (07:00-08:00) 81
FIGURE E.3: TRAFFIC FLOW VALIDATION (16:00-17:00) 84
FIGURE E.4: TRAFFIC FLOW VALIDATION (18:00-19:00) 87
FIGURE F.1: JOURNEY TIME – ROUTE 1 EASTBOUND (06:00-07:00) 91
FIGURE F.2: JOURNEY TIME – ROUTE 1 WESTBOUND (06:00-07:00) 91
FIGURE F.3: JOURNEY TIME – ROUTE 2 NORTHBOUND (06:00-07:00) 92
FIGURE F.4: JOURNEY TIME – ROUTE 2 SOUTHBOUND (06:00-07:00) 92
FIGURE F.5: JOURNEY TIME – ROUTE 3 NORTHBOUND (06:00-07:00) 93
FIGURE F.6: JOURNEY TIME – ROUTE 3 SOUTHBOUND (06:00-07:00) 93
FIGURE F.7: JOURNEY TIME – ROUTE 4 EASTBOUND (06:00-07:00) 94
FIGURE F.8: JOURNEY TIME – ROUTE 4 WESTBOUND (06:00-07:00) 94
FIGURE F.9: JOURNEY TIME – ROUTE 5 EASTBOUND (06:00-07:00) 95
FIGURE F.10: JOURNEY TIME – ROUTE 5 WESTBOUND (06:00-07:00) 95
FIGURE F.11: JOURNEY TIME – ROUTE 6 NORTHBOUND (06:00-07:00) 96
FIGURE F.12: JOURNEY TIME – ROUTE 6 SOUTHBOUND (06:00-07:00) 96

FIGURE F.13: JOURNEY TIME - ROUTE 7 NORTHBOUND (06:00-07:00) 97
FIGURE F.14: JOURNEY TIME - ROUTE 7 SOUTHBOUND (06:00-07:00) 97
FIGURE F.15: JOURNEY TIME - ROUTE 8 NORTHBOUND (06:00-07:00) 98
FIGURE F.16: JOURNEY TIME – ROUTE 8 SOUTHBOUND (06:00-07:00) 98
FIGURE F.17: JOURNEY TIME – ROUTE 9 EASTBOUND (06:00-07:00)..... 99
FIGURE F.18: JOURNEY TIME – ROUTE 9 WESTBOUND (06:00-07:00)..... 99
FIGURE F.19: JOURNEY TIME – ROUTE 10 NORTHBOUND (06:00-07:00) 100
FIGURE F.20: JOURNEY TIME – ROUTE 10 SOUTHBOUND (06:00-07:00) 100
FIGURE F.21: JOURNEY TIME – ROUTE 1 EASTBOUND (07:00-08:00)..... 101
FIGURE F.22: JOURNEY TIME – ROUTE 1 WESTBOUND (07:00-08:00)..... 101
FIGURE F.23: JOURNEY TIME – ROUTE 2 NORTHBOUND (07:00-08:00) 102
FIGURE F.24: JOURNEY TIME – ROUTE 2 SOUTHBOUND (07:00-08:00) 102
FIGURE F.25: JOURNEY TIME – ROUTE 3 NORTHBOUND (07:00-08:00) 103
FIGURE F.26: JOURNEY TIME – ROUTE 3 SOUTHBOUND (07:00-08:00) 103
FIGURE F.27: JOURNEY TIME – ROUTE 4 EASTBOUND (07:00-08:00)..... 104
FIGURE F.28: JOURNEY TIME – ROUTE 4 WESTBOUND (07:00-08:00)..... 104
FIGURE F.29: JOURNEY TIME – ROUTE 5 EASTBOUND (07:00-08:00)..... 105
FIGURE F.30: JOURNEY TIME – ROUTE 5 WESTBOUND (07:00-08:00)..... 105
FIGURE F.31: JOURNEY TIME – ROUTE 6 NORTHBOUND (07:00-08:00) 106
FIGURE F.32: JOURNEY TIME – ROUTE 6 SOUTHBOUND (07:00-08:00) 106
FIGURE F.33: JOURNEY TIME – ROUTE 7 NORTHBOUND (07:00-08:00) 107
FIGURE F.34: JOURNEY TIME – ROUTE 7 SOUTHBOUND (07:00-08:00) 107
FIGURE F.35: JOURNEY TIME – ROUTE 8 NORTHBOUND (07:00-08:00) 108
FIGURE F.36: JOURNEY TIME – ROUTE 8 SOUTHBOUND (07:00-08:00) 108
FIGURE F.37: JOURNEY TIME – ROUTE 9 EASTBOUND (07:00-08:00)..... 109
FIGURE F.38: JOURNEY TIME – ROUTE 9 WESTBOUND (07:00-08:00)..... 109
FIGURE F.39: JOURNEY TIME – ROUTE 10 NORTHBOUND (07:00-08:00) 110
FIGURE F.40: JOURNEY TIME – ROUTE 10 SOUTHBOUND (07:00-08:00) 110
FIGURE F.41: JOURNEY TIME – ROUTE 1 EASTBOUND (16:00-17:00)..... 111
FIGURE F.42: JOURNEY TIME – ROUTE 1 WESTBOUND (16:00-17:00)..... 111
FIGURE F.43: JOURNEY TIME – ROUTE 2 NORTHBOUND (16:00-17:00) 112
FIGURE F.44: JOURNEY TIME – ROUTE 2 SOUTHBOUND (16:00-17:00) 112
FIGURE F.45: JOURNEY TIME – ROUTE 3 NORTHBOUND (16:00-17:00) 113
FIGURE F.46: JOURNEY TIME – ROUTE 3 SOUTHBOUND (16:00-17:00) 113
FIGURE F.47: JOURNEY TIME – ROUTE 4 EASTBOUND (16:00-17:00)..... 114
FIGURE F.48: JOURNEY TIME – ROUTE 4 WESTBOUND (16:00-17:00)..... 114
FIGURE F.49: JOURNEY TIME – ROUTE 5 EASTBOUND (16:00-17:00)..... 115
FIGURE F.50: JOURNEY TIME – ROUTE 5 WESTBOUND (16:00-17:00)..... 115
FIGURE F.51: JOURNEY TIME – ROUTE 6 NORTHBOUND (16:00-17:00) 116
FIGURE F.52: JOURNEY TIME – ROUTE 6 SOUTHBOUND (16:00-17:00) 116
FIGURE F.53: JOURNEY TIME – ROUTE 7 NORTHBOUND (16:00-17:00) 117
FIGURE F.54: JOURNEY TIME – ROUTE 7 SOUTHBOUND (16:00-17:00) 117
FIGURE F.55: JOURNEY TIME – ROUTE 8 NORTHBOUND (16:00-17:00) 118
FIGURE F.56: JOURNEY TIME – ROUTE 8 SOUTHBOUND (16:00-17:00) 118
FIGURE F.57: JOURNEY TIME – ROUTE 9 EASTBOUND (16:00-17:00)..... 119
FIGURE F.58: JOURNEY TIME – ROUTE 9 WESTBOUND (16:00-17:00)..... 119
FIGURE F.59: JOURNEY TIME – ROUTE 10 NORTHBOUND (16:00-17:00) 120

FIGURE F.60: JOURNEY TIME – ROUTE 10 SOUTHBOUND (16:00-17:00) 120
FIGURE F.61: JOURNEY TIME – ROUTE 1 EASTBOUND (18:00-19:00)..... 121
FIGURE F.62: JOURNEY TIME – ROUTE 1 WESTBOUND (18:00-19:00)..... 121
FIGURE F.63: JOURNEY TIME – ROUTE 2 NORTHBOUND (18:00-19:00) 122
FIGURE F.64: JOURNEY TIME – ROUTE 2 SOUTHBOUND (18:00-19:00) 122
FIGURE F.65: JOURNEY TIME – ROUTE 3 NORTHBOUND (18:00-19:00) 123
FIGURE F.66: JOURNEY TIME – ROUTE 3 SOUTHBOUND (18:00-19:00) 123
FIGURE F.67: JOURNEY TIME – ROUTE 4 EASTBOUND (18:00-19:00)..... 124
FIGURE F.68: JOURNEY TIME – ROUTE 4 WESTBOUND (18:00-19:00)..... 124
FIGURE F.69: JOURNEY TIME – ROUTE 5 EASTBOUND (18:00-19:00)..... 125
FIGURE F.70: JOURNEY TIME – ROUTE 5 WESTBOUND (18:00-19:00)..... 125
FIGURE F.71: JOURNEY TIME – ROUTE 6 NORTHBOUND (18:00-19:00) 126
FIGURE F.72: JOURNEY TIME – ROUTE 6 SOUTHBOUND (18:00-19:00) 126
FIGURE F.73: JOURNEY TIME – ROUTE 7 NORTHBOUND (18:00-19:00) 127
FIGURE F.74: JOURNEY TIME – ROUTE 7 SOUTHBOUND (18:00-19:00) 127
FIGURE F.75: JOURNEY TIME – ROUTE 8 NORTHBOUND (18:00-19:00) 128
FIGURE F.76: JOURNEY TIME – ROUTE 8 SOUTHBOUND (18:00-19:00) 128
FIGURE F.77: JOURNEY TIME – ROUTE 9 EASTBOUND (18:00-19:00)..... 129
FIGURE F.78: JOURNEY TIME – ROUTE 9 WESTBOUND (18:00-19:00)..... 129
FIGURE F.79: JOURNEY TIME – ROUTE 10 NORTHBOUND (18:00-19:00) 130
FIGURE F.80: JOURNEY TIME – ROUTE 10 SOUTHBOUND (18:00-19:00) 130

LIST OF TABLES

TABLE 2.1: 2015 MODELLED GENERALISED COST PARAMETERS..... 5
TABLE 3.1: COMPARISON OF 2015 TRAFFIC COUNTS IN MODELLED HOURS 6
TABLE 3.2: 2015 INITIAL ‘EERHAM’ MATRIX TOTALS (VEH/HR)..... 7
TABLE 3.3: HOURLY ‘COMMUTING’ FACTORS AND MATRIX TOTALS 8
TABLE 3.4: NTEM AVERAGE WEEKDAY ‘HOME-BASED WORK’ TO ‘OTHER PURPOSE’ FACTORS 9
TABLE 3.5: 24-HOUR JTW AND OTHER PURPOSE TRIP MATRICES 9
TABLE 3.6: HOURLY ‘OTHER PURPOSE’ FACTORS AND MATRIX TOTALS 10
TABLE 3.7: MARTLESHAM PARK & RIDE CAR TRIPS 12
TABLE 3.8: INITIAL HIGHWAY MATRIX TOTALS (VEH/HOUR) 12
TABLE 4.1: TAG MODEL CALIBRATION AND VALIDATION CRITERIA 13
TABLE 4.2: FINAL HIGHWAY MATRIX TOTALS (VEH/HOUR) 15
TABLE 4.3: TAG CONVERGENCE CRITERIA 16
TABLE 4.4: CONVERGENCE RESULTS (06:00-07:00)..... 16
TABLE 4.5: CONVERGENCE RESULTS (07:00-08:00)..... 16
TABLE 4.6: CONVERGENCE RESULTS (16:00-17:00)..... 16
TABLE 4.7: CONVERGENCE RESULTS (18:00-19:00)..... 17
TABLE 4.8: TRAFFIC FLOW CALIBRATION SUMMARY (06:00-07:00) 18
TABLE 4.9: TRAFFIC FLOW CALIBRATION SUMMARY (07:00-08:00) 19

TABLE 4.10: TRAFFIC FLOW CALIBRATION SUMMARY (16:00-17:00) 20
TABLE 4.11: TRAFFIC FLOW CALIBRATION SUMMARY (18:00-19:00) 21
TABLE 5.1: TRAFFIC FLOW VALIDATION SUMMARY (06:00-07:00)..... 23
TABLE 5.2: TRAFFIC FLOW VALIDATION SUMMARY (07:00-08:00)..... 24
TABLE 5.3: TRAFFIC FLOW VALIDATION SUMMARY (16:00-17:00)..... 25
TABLE 5.4: TRAFFIC FLOW VALIDATION SUMMARY (18:00-19:00)..... 26
TABLE 5.5: JOURNEY TIME VALIDATION SUMMARY (06:00-07:00)..... 27
TABLE 5.6: JOURNEY TIME VALIDATION SUMMARY (07:00-08:00)..... 27
TABLE 5.7: JOURNEY TIME VALIDATION SUMMARY (16:00-17:00)..... 28
TABLE 5.8: JOURNEY TIME VALIDATION SUMMARY (18:00-19:00)..... 28
TABLE 5.9: CHANGE IN TRIP LENGTH DISTRIBUTION (06:00-07:00) 34
TABLE 5.10: CHANGE IN TRIP LENGTH DISTRIBUTION (07:00-08:00) 34
TABLE 5.11: CHANGE IN TRIP LENGTH DISTRIBUTION (16:00-17:00) 34
TABLE 5.12: CHANGE IN TRIP LENGTH DISTRIBUTION (18:00-19:00) 34
TABLE 5.13: PRIOR AND FINAL MATRIX COMPARISON (06:00-07:00)..... 35
TABLE 5.14: PRIOR AND FINAL MATRIX COMPARISON (07:00-08:00)..... 36
TABLE 5.15: PRIOR AND FINAL MATRIX COMPARISON (16:00-17:00)..... 37
TABLE 5.16: PRIOR AND FINAL MATRIX COMPARISON (18:00-19:00)..... 38
TABLE 6.1: SUMMARY OF 06:00-07:00 MODEL CALIBRATION AND VALIDATION..... 40
TABLE 6.2. SUMMARY OF 07:00-08:00 MODEL CALIBRATION AND VALIDATION..... 40
TABLE 6.3. SUMMARY OF 16:00-18:00 MODEL CALIBRATION AND VALIDATION..... 41
TABLE 6.4. SUMMARY OF 18:00-19:00 MODEL CALIBRATION AND VALIDATION..... 41
TABLE B.1: ATC SITES EXCLUDED FROM CALIBRATION/VALIDATION..... 49
TABLE B.2: ATC COUNTS BALANCED 49
TABLE D.1: TRAFFIC FLOW CALIBRATION – SCREENLINES (06:00-07:00)..... 54
TABLE D.2: TRAFFIC FLOW CALIBRATION – ALL COUNTS (06:00-07:00) 56
TABLE D.3: TRAFFIC FLOW CALIBRATION – SCREENLINES (07:00-08:00)..... 60
TABLE D.4: TRAFFIC FLOW CALIBRATION – ALL COUNTS (07:00-08:00) 62
TABLE D.5: TRAFFIC FLOW CALIBRATION – SCREENLINES (16:00-17:00)..... 66
TABLE D.6: TRAFFIC FLOW CALIBRATION – ALL COUNTS (16:00-17:00) 68
TABLE D.7: TRAFFIC FLOW CALIBRATION – SCREENLINES (18:00-19:00)..... 72
TABLE D.8: TRAFFIC FLOW CALIBRATION – ALL COUNTS (18:00-19:00) 74
TABLE E.1: TRAFFIC FLOW VALIDATION – SCREENLINES (06:00-07:00) 79
TABLE E.2: TRAFFIC FLOW VALIDATION – ALL COUNTS (06:00-07:00)..... 80
TABLE E.3: TRAFFIC FLOW VALIDATION – SCREENLINES (07:00-08:00) 82
TABLE E.4: TRAFFIC FLOW VALIDATION – ALL COUNTS (07:00-08:00)..... 83
TABLE E.5: TRAFFIC FLOW VALIDATION – SCREENLINES (16:00-17:00) 85
TABLE E.6: TRAFFIC FLOW VALIDATION – ALL COUNTS (16:00-17:00)..... 86
TABLE E.7: TRAFFIC FLOW VALIDATION – SCREENLINES (18:00-19:00) 88
TABLE E.8: TRAFFIC FLOW VALIDATION – ALL COUNTS (18:00-19:00)..... 89

EXECUTIVE SUMMARY

WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

Highway models were initially developed for several time periods in a 2012 base year, however the traffic matrices were developed using 2001 Census Journey-To-Work (JTW) data in the absence of the 2011 data. Since the 2011 Census JTW data was released in late 2014, and additional traffic surveys were commissioned in May 2015 to provide up-to-date traffic count data in the modelled area, WSP | Parsons Brinckerhoff has been instructed to update the 2012 base year to a 2015 base year using the latest available source data to produce the initial traffic matrices.

It is necessary to create a robust transport model that realistically represents traffic routeing and conditions on the highway network, so that valid future forecasts can be produced to assess the potential impacts of the proposed Sizewell C site and inform the development of any necessary mitigation measures.

The models will be used in discussion with the highway authorities to identify the location where mitigation schemes may be required to address adverse impacts of development traffic and demonstrate the efficacy of those schemes. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis.

In the development of the base year transport models, which have been developed in the VISUM 15.00-03 software version, the Department for Transport (DfT)'s Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 base year models have been calibrated and validated, using observed traffic data collected across the study area between March and June 2015, in accordance with guidance set out in TAG Unit M3.1 Highway Assignment Modelling.

2015 Base Year highway models were initially developed for the following three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

The calibration and validation of these models is described in the Sizewell C VISUM Model Local Model Validation Report (May 2016). Additional 2015 base year highway models were subsequently developed for the following four time periods:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for these additional four hours, and should be read in conjunction with the main Local Model Validation Report (LMVR)[1].

These modelled time periods were selected because they reflect a combination of the highest levels of existing highway traffic and the highest levels of development construction traffic.

The 2015 base model is separated into two areas, 'External' and 'Internal'. The East of England Regional Highway Assignment Model (EERHAM), maintained by AECOM on behalf of Highways England, was cordoned around the SZC model area to produce initial trip matrices for movements to and from the 'External' SZC zones. Since the EERHAM matrices only represent the 08:00-09:00 (AM Peak) and 17:00-18:00 (PM Peak) periods along with a 10:00-16:00 (Average Inter Peak) period, it was necessary to factor the AM peak and PM peak hour cordon matrices to generate suitable equivalent matrices for the additional four hours. Analysis was undertaken of traffic count data to determine the adjustment factors to be applied.

For trips within the 'Internal' model area, initial matrices were produced for the 'Car' vehicle class using a range of sources including 2011 Census JTW data and EduBase education data. The same methodology was used for the additional four hours as for the initial three hours.

During the calibration of the initial three hours, it became apparent that some manual changes to the 'Initial' matrices were needed, to produce 'Prior' matrices which were assigned to the highway network prior to undertaking matrix estimation. The same adjustments were made to the Initial traffic demand matrices for the additional four hours as were required for the main three hours:

- HGV 'I-I' matrix doubled (external movements unchanged)
- Car 'I-I' matrix factored down by 5% (external movements unchanged)

Matrix estimation was then applied to refine the traffic matrices in order to achieve a better fit with observed traffic count data in the additional four hours. During matrix estimation, some origin-destination (OD) pairs were 'frozen' so that these particular trips would not be changed:

- Zone 1001 which represents Martlesham Park & Ride (matrix volumes based on ATC)
- 'External-External' trips (derived from EERHAM matrices)

The assignment of the Final (matrix-estimated) traffic matrices demonstrate a good level of fit with observed data, as reported in chapter 4 and chapter 5, and summarised in chapter 6.

Along with the initial three hours, these models will serve as a suitable platform for the forecasting of future traffic conditions and the robust appraisal of the potential impacts of the proposed Sizewell C site on the surrounding highway network during the project's construction phase, and will help to inform the development of any necessary mitigation measures. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis.

[1] Sizewell C VISUM Model Local Model Validation Report (May 2016)

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

1.1.2 Highway models were initially developed in VISUM 15.00-03, for a 2015 base year, for the following three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

1.1.3 The calibration and validation of these models is described in the Sizewell C VISUM Model Local Model Validation Report (May 2016). Additional 2015 base year highway models were subsequently developed for the following four time periods:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

1.1.4 This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for these additional four hours, and should be read in conjunction with the main Local Model Validation Report (LMVR)2.

1.1.5 The process of developing these additional models largely follows the same process applied for the development of the initial three models. In the development of the base year transport models Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 base year models have been calibrated and validated using observed traffic data collected across the study area between March and June 2015 based on the criteria set out in TAG Unit M3.1.

1.1.6 The models will be used to assess the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase to identify the location where mitigation schemes may be required to address adverse impacts of development traffic and demonstrate the efficacy of those schemes. The outputs of the modelling tests will be incorporated into the Transport Assessment and provide inputs to environmental analysis.

1.2 MODEL BASIS

1.2.1 The essence of a relevant and robust model can be founded upon three elements:

- Platform – the software chosen

[2] Sizewell C VISUM Model Local Model Validation Report (May 2016)

- Data collection – the old adage of 'rubbish in – rubbish out' is never more important than in developing traffic and transport models to meet DfT TAG standards
- Application – summed up as sound methods and well trained experienced practitioners

1.2.2 The VISUM software platform has been used to develop a strategic highway assignment model of the Suffolk and south Norfolk area, which could demonstrate the impacts of construction period traffic for a number of alternative scenarios. VISUM provides:

- Ease of use and understanding of the inputs and outputs
- DfT TAG compliance in terms of structure and convergence
- Advanced highway and public transport assignment procedures
- Detailed delay and capacity calculation for turns in highway assignment
- Outputs that can readily be used in Transport Assessment evidence
- Excellent tabular and graphical visualisation of the results
- A tool for multimodal analysis i.e. vehicle origin and destination matrices split between light vehicles and heavy goods vehicles
- A direct means of easily developing a VISSIM micro-simulation model from the wider area VISUM highway model if required which would allow more detailed junction modelling
- Acceptability by local authorities, DfT, Highways England and developers of model inputs and outputs.

1.2.3 A spreadsheet gravity model has been developed alongside the highway assignment VISUM model. The gravity model will use skimmed travel-time matrices from the 2015 base year VISUM model to inform the distribution of development trips.

1.2.4 These models will serve as a suitable platform for the forecasting of future traffic conditions and the robust appraisal of the potential impacts of the proposed Sizewell C site on the surrounding highway network, and will help to inform the development of any necessary mitigation measures.

1.3 REPORT PURPOSE AND STRUCTURE

1.3.1 This document details the development, calibration and validation of the additional four 2015 base year models and traffic demand matrices.

1.3.2 The structure of this report is as follows:

- Chapter 2 describes the development of the 2015 Base Year highway network
- Chapter 3 describes the development of the 2015 Base Year highway traffic matrices
- Chapter 4 illustrates the calibration of the transport model
- Chapter 5 illustrates the validation of the transport model
- Chapter 6 concludes the report

2 HIGHWAY ASSIGNMENT MODEL – NETWORK DEVELOPMENT

2.1 INITIAL MODELS

2.1.1 Highway models were initially developed, for a 2015 base year, for the following three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

2.1.2 These models were calibrated and validated to 2015 traffic conditions, as described in the main LMVR[3]. For the purposes of producing models to represent the four additional hours, the final validated networks were used as follows:

- 08:00 – 09:00 validated network:
  - 06:00 – 07:00 network
  - 07:00 – 08:00 network
- 17:00 – 18:00 validated network:
  - 16:00 – 17:00 network
  - 18:00 – 19:00 network

2.2 TIME-SPECIFIC ATTRIBUTES

2.2.1 Time-varying operational elements such as signal timings were assumed to be broadly similar in the AM hours (06:00-09:00), and in the PM hours (16:00-19:00), therefore no changes were made to signalised junctions in the additional four models.

2.2.2 The values of time and distance applied to the different vehicle classes, for calculation of assignment path costs, are unchanged from the initial models for the relevant time periods. These are shown in Table 2.1. 'AM peak' values were applied for the hours 06:00-09:00, 'Inter peak' values were used for 15:00-16:00 hours and 'PM peak' values were applied for the hours 16:00-19:00.

Table 2.1: 2015 Modelled Generalised Cost Parameters

	Time	Distance	Time	Distance	Time	Distance
Car	37.7136	1.0406	41.3721	1.0420	35.0955	1.0374
LGV	40.9974	1.5610	40.9974	1.5610	40.9974	1.5610
HGV	84.2904	3.9146	84.2904	3.9146	84.2904	3.9146

[3] Sizewell C VISUM Model Local Model Validation Report (May 2016)

3 HIGHWAY ASSIGNMENT MODEL – MATRIX DEVELOPMENT

3.1 INTRODUCTION

3.1.1 A broad methodology[4] for development of the 2015 'Initial' traffic matrices was submitted to AECOM for review. Following some amendments the approach was agreed with AECOM and SCC and the detailed matrix development process, in the form of Excel spreadsheet flow charts, was subsequently provided to AECOM for review.

3.1.2 The process of the Initial matrix development for the initial three hours is described in detail in the main LMVR5. This section describes the process of the Initial matrix development for the additional four hours and subsequent matrix calibration.

3.2 INITIAL MATRIX

3.2.1 Initial development of the traffic matrices for the additional four hours follows the same approach as for the initial three hours.

3.2.2 Cordon matrices from the 2006 East of England Regional Highway Assignment Model (EERHAM), maintained by AECOM on behalf of Highways England, were provided for the SZC modelled area for an 'AM Peak Hour', an 'Average Inter Peak Hour' and a 'PM Peak Hour'. As described in the main LMVR, the AM Peak Hour and PM Peak Hour matrices were used for the 08:00-09:00 and 17:00-18:00 hour SZC matrices respectively, and the 'Average Inter Peak Hour' matrix was used to provide an initial SZC matrix for 15:00-16:00 hours.

3.2.3 For Car trips, the EERHAM cordon matrices provided the basis for all trips with an 'External' trip end, i.e. 'E-E', 'E-I' and 'I-E' trips. In order to create similar matrices for the remaining four hours it was necessary to use the 08:00-09:00 hour and 17:00-18:00 hour 'External' matrices and apply suitable factors. A comparison of all traffic count survey data that has been used for the 2015 SZC model calibration and validation, was undertaken to determine the ratio of traffic flows, for each vehicle class, in each time period. This comparison is shown in Table 3.1.

Table 3.1: Comparison of 2015 Traffic Counts in Modelled Hours

Hour		2015 Total Observed Traffic (Vehs)		
		Car	LGV	HGV
AM Period				
08:00-09:00	Total Traffic	52,131	7,185	5,538
06:00-07:00	Total Traffic	18,576	3,305	3,691
	Ratio / 08:00-09:00	**0.35634**	**0.45998**	**0.66646**
07:00-08:00	Total Traffic	43,716	7,287	5,038
	Ratio / 08:00-09:00	**0.83858**	**1.01418**	**0.90974**

[4] 2015 Base Modelling methodology_updated to reflect AECOM comments_290915
[5] Sizewell C VISUM Model Local Model Validation Report (May 2016)

Hour		2015 Total Observed Traffic (Vehs)		
		Car	LGV	HGV
PM Period				
17:00-18:00	Total Traffic	55,813	5,540	3,445
16:00-17:00	Total Traffic	55,901	7,283	4,879
	Ratio / 17:00-18:00	**1.00158**	**1.31459**	**1.41641**
18:00-19:00	Total Traffic	42,167	3,938	2,568
	Ratio / 17:00-18:00	**0.75551**	**0.71090**	**0.74543**

3.2.4 The above ratios were applied to the 08:00-09:00 External Car matrix to create 06:00-07:00 and 07:00-08:00 matrices, and to the 17:00-18:00 External Car matrix to create 16:00-17:00 and 18:00:19:00 matrices.

3.2.5 For LGV and HGV trips, the Initial matrices were developed purely from the EERHAM data source. The factors shows in Table 3.1 were applied to the 08:00-09:00 and 17:00-18:00 LGV and HGV whole matrices (i.e. both External and Internal trips) to create the remaining four hours, similarly to the Car matrix.

3.2.6 The EERHAM matrix totals, for all seven modelled hours, are shown in Table 3.2.

Table 3.2: 2015 Initial 'EERHAM' Matrix Totals (veh/hr)

Modelled Hour	Car	LGV	HGV
06:00-07:00	5,118	1,610	1,169
07:00-08:00	12,045	3,549	1,595
08:00-09:00	14,363	3,499	1,753
15:00-16:00	9,555	3,125	1,725
16:00-17:00	15,178	3,483	1,636
17:00-18:00	15,154	2,650	1,155
18:00-19:00	11,449	1,884	861

3.2.7 For 'Internal' Car trips, additional data sources were used to provide the Initial 'I-I' trip matrices for 'Commuting' and 'Other Purpose' trips. As described in the main LMVR[6], 'Education' trips only occur in 08:00-09:00 and 15:00-16:00 hours. The process of developing the 'Commuting' and 'Other Purpose' trip matrices for the additional four hours is identical to the initial three hours.

COMMUTING TRIPS

3.2.8 The detailed process of deriving 'Commuting trips' for Car 'Internal to Internal' zone OD pairs, for the main three modelled hours, is described in the main LMVR. The same process has been followed for the additional three hours, which can be summarised as follows:

→ 2011 Census JTW data extracted, for 'Car Driver' mode, in the form of 'Output Areas' (OAs) for origins and 'WorkPlace Zones' (WPZs) for destinations

[6] Sizewell C VISUM Model Local Model Validation Report (May 2016)

- OAs and WPZs were 'intersected' with SZC model 'Internal' zones within ArcGIS, based on population and zone area (for OAs) and population weighted centroids for WPZs, providing a 2011 24-hour JTW Car matrix in the SZC zone structure
- 24-hour matrix 'cleaned' to remove any trips between 'Internal' zones that would not use the modelled highway network, i.e. OD pairs whose intermediate routes are not modelled, such as zones located within the area bounded by the A140 / B1117 / B1116 / A1120
- 'Cleaned' 2011 24-hour JTW matrix then growthed (furnessed) to 2015 levels using DfT observed counts for the period 2011 to 2014, in combination with forecast traffic growth factors (for the 'Home-Based Work' journey purpose) for 2014 to 2015 obtained from NTEM dataset 6.2 (via TEMPRO), adjusted by TAG fuel cost and income adjustment factors
- 2015 24-hour JTW matrix adjusted to take account of people not in work on any given weekday (i.e. those off sick, on leave or working part-time) to provide adjusted 2015 24-hour JTW trips in a 'home-to-work' direction
- 2015 24-hour JTW matrix transposed to provide 'work-to-home' trips

3.2.9 The above process yielded a 24-hour JTW trip matrix which was then required to be factored to the modelled hours.

3.2.10 National Travel Survey (NTS) Table 0503 (September 2015) provides hourly trip profile factors by purpose, enabling the calculation of total (two-way) commuting trips within each modelled hour. It does not however provide information on the proportions of trips travelling 'to work' or 'from work'.

3.2.11 In September 2006 a Road Side Interview (RSI) survey was conducted on the A12 between Marlesford and Little Glemham, by AECOM on behalf of Suffolk County Council. This data was provided to WSP | Parsons Brinckerhoff and as used to analyse the directional split of commuting trips observed in each hour. A separate technical note[7] has been produced detailing this analysis.

3.2.12 These hourly directional splits were applied to the 2015 24-hour JTW matrix, alongside hourly commuting trip profile factors derived from NTS Table 0503, to generate hourly matrices with evidence-based proportions of 'home-to-work' and 'home-to-work' trips. The final hourly 'commuting' Car matrix totals, for the 'I-I' matrix element, are shown in Table 3.3 for all seven modelled hours.

Table 3.3: Hourly 'Commuting' Factors and Matrix Totals

Modelled Hour	Directional Split from RSI		NTS profile of two-way commuting trips	Matrix Total		
	Home-to-Work	Work-to-Home	% of 24-hour trips in hour	Home-to-Work	Work-to-Home	All Trips
06:00-07:00	90.7%	9.3%	7.2%	9,114	935	**10,049**
07:00-08:00	90.7%	9.3%	16.1%	20,289	2,082	**22,371**
08:00-09:00	95.1%	4.9%	14.1%	18,707	963	**19,669**
15:00-16:00	33.3%	66.7%	4.4%	2,048	4,097	**6,145**
16:00-17:00	8.3%	91.7%	9.1%	1,054	11,598	**12,652**
17:00-18:00	0.0%	100.0%	14.9%	0	20,701	**20,701**
18:00-19:00	15.8%	84.2%	7.1%	1,555	8,273	**9,827**

[7] Sizewell C 2015_Use of 2006 RSI Survey_170915

OTHER PURPOSE TRIPS

3.2.13 The detailed process of deriving 'Other Purpose' trips for Car 'Internal to Internal' zone OD pairs, for the main three modelled hours, is described in the main LMVR. The same process has been followed for the additional three hours, which can be summarised as follows:

- 'Commuting' matrices used to provide the distribution of 'other purpose' trips, as agreed with AECOM and SCC
- Factors derived from NTEM dataset 6.2 (via TEMPRO) used to convert 'home-based work' to 'other purpose' daily vehicle trip volumes
- 2015 24-hour JTW matrix factored to provide 2015 24-hour 'other purpose' trips in a 'from home' direction
- 'From home' matrix transposed to provide 'to home' trips
- Similarly to the 'commuting' matrices, the 24-hour 'from home' and 'to home' 'other purpose' trip matrices were then factored to the relevant modelled hour using hourly trip profile factors derived from NTS Table 0503 (September 2015), and hourly directional splits derived from the 2006 RSI for 'other' trips

3.2.14 The NTEM factors for converting daily 'home-based work' trips to 'other purpose' trips are shown in Table 3.4.

Table 3.4: NTEM Average Weekday 'Home-Based Work' to 'Other Purpose' Factors

TEMPRO Region	Home-Based Work to Other Purpose conversion factors	
	Average Weekday	
	Origin	Destination
South Norfolk	2.1673	2.1597
Suffolk	2.2538	2.2540
Babergh	2.3473	2.3566
Ipswich	2.1189	2.1129
Mid Suffolk	1.9844	1.9965
Suffolk Coastal	2.2643	2.2560
Waveney	2.3939	2.4077

3.2.15 The resultant 24-hour 'from home' and 'to home' trip matrices are shown in Table 3.5.

Table 3.5: 24-Hour JTW and Other Purpose Trip Matrices

Direction	JTW	Other Purpose
From Home	69,675	155,014
To Home	69,675	155,359

3.2.16 The NTS hourly factors and directional split factors which were applied to the 24-hour matrices, along with the final hourly 'other purpose' Car matrix totals for the 'I-I' matrix element, are displayed in Table 3.6 for all seven modelled hours.

Table 3.6: Hourly 'Other Purpose' Factors and Matrix Totals

Modelled Hour	Directional Split from RSI		NTS profile of two-way other purpose trips	Matrix Total		
	From Home	To Home	% of 24-hour trips in hour	From Home	To Home	All Trips
06:00-07:00	100.0%	0.0%	1.5%	4,512	0	**4,512**
07:00-08:00	100.0%	0.0%	3.5%	10,754	0	**10,754**
08:00-09:00	96.1%	3.9%	5.7%	16,974	698	**17,672**
15:00-16:00	26.2%	73.8%	8.0%	6,509	18,384	**24,893**
16:00-17:00	20.7%	79.3%	8.3%	5,317	20,426	**S:\504003**
17:00-18:00	36.6%	63.4%	7.5%	8,553	14,860	**23,413**
18:00-19:00	49.6%	50.4%	6.5%	10,036	10,218	**20,255**

MARTLESHAM PARK & RIDE

3.2.17 A separate zone (1001) has been coded in the SZC model to represent the Martlesham Park & Ride (P&R) site to the north-west of the A12 / A1214 roundabout.

3.2.18 An ATC was collected at the site entrance which provided exact trip volumes to and from the zone.

3.2.19 Since this P&R service runs between the car park and Ipswich town centre it was considered reasonable to derive a proxy distribution of trips from the 2015 24-hour JTW matrix, based on a selection of central Ipswich zones (for the 'work' trip end) and zones to the east of the town centre (for the 'home' trip end). The model zones were filtered to provide the origin and destination zones likely to use the Park & Ride site, which are shown in Figure 3.1.

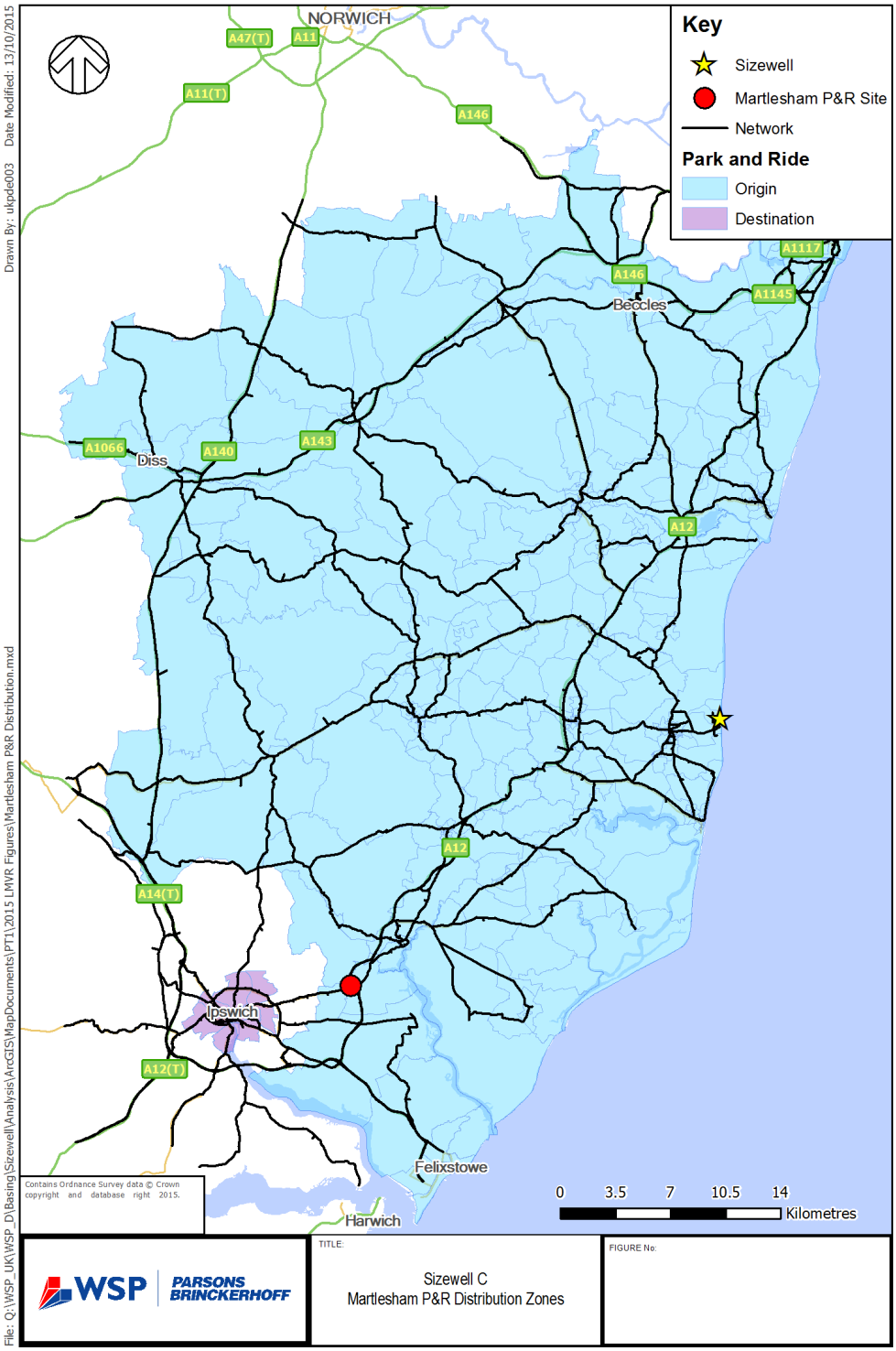


Figure 3.1: Martlesham P&R Trip Distribution Zones

3.2.20 The distribution of trips between these origin and destination zones, extracted from the 2015 24-hour JTW matrix, was factored to the observed 'to P&R' Car trips for each modelled hour. The distribution from the transposed JTW matrix was similarly factored to the observed 'from P&R' Car trips. The total Car trips for this zone, for all seven modelled hours, are shown in Table 3.7. Note that there are no LGV and HGV trips modelled in this zone.

Table 3.7: Martlesham Park & Ride Car Trips

Modelled Hour	To Zone	From Zone	Total
06:00-07:00	8	1	**9**
07:00-08:00	60	7	**67**
08:00-09:00	70	17	**87**
15:00-16:00	9	27	**36**
16:00-17:00	7	38	**45**
17:00-18:00	7	41	**48**
18:00-19:00	4	17	**21**

3.2.21 Since these trips are 'Park & Ride' and not 'Car' mode, they are not double-counted within the JTW data so there was no requirement to offset the additional trips modelled in this zone.

COMBINED 'CAR' MATRICES

3.2.22 The 'commuting' and 'other purpose' trip matrices were summed, along with the Martlesham P&R trips, to provide 'Internal-Internal' origin-destination trips for each additional modelled hour, for the Car vehicle class.

3.2.23 These were then combined with the EERHAM trip matrices which represented all trips with an external trip end, i.e. 'E-E', 'E-I' and 'I-E', to provide full 'Car' Initial matrices for each modelled hour. The Initial matrix totals, for all seven modelled hours, are shown in Table 3.8.

Table 3.8: Initial Highway Matrix Totals (veh/hour)

Modelled Hour	Car						LGV	HGV
	EERHAM	Commute	Other Purpose	Education	Martlesham P&R	Total		
06:00-07:00	5,118	10,049	4,512	-	9	**19,688**	**1,610**	**1,169**
07:00-08:00	12,045	22,371	10,754	-	67	**45,236**	**3,549**	**1,595**
08:00-09:00	14,363	19,669	17,672	9,379	87	**61,170**	**3,499**	**1,753**
15:00-16:00	9,555	6,145	24,893	12,519	36	**53,148**	**3,125**	**1,725**
16:00-17:00	15,178	12,652	25,743	-	45	**53,618**	**3,483**	**1,636**
17:00-18:00	15,154	20,701	23,413	-	48	**59,316**	**2,650**	**1,155**
18:00-19:00	11,449	9,827	20,255	-	21	**41,552**	**1,884**	**861**

3.3 MATRIX CALIBRATION

3.3.1 Part of model calibration, which is discussed in chapter 4, involves calibration of the traffic demand matrix. Following development of the Initial matrices, changes are made so that the origin-destination movements are representative of observed highway traffic flows and meet TAG criteria.

3.3.2 The same calibration process was applied to the additional four hours as for the main three hours. This involved making adjustments to the Initial matrices prior to running the matrix estimation procedure. This process is described in detail in section 4.4.

3.3.3 A comparison of trip volumes by sector was undertaken to review where the key changes in traffic volume have occurred. So that the integrity of the matrix was maintained during the matrix calibration process, an analysis was also undertaken of the comparative trip length frequency distribution exhibited by the Prior (pre-ME) and Final (post-ME) matrices. These comparisons are presented in Chapter 5.

4 HIGHWAY ASSIGNMENT MODEL – CALIBRATION

4.1 INTRODUCTION

4.1.1 The process of model calibration is designed so that the parameters that control the model's calculation of route choices and the resulting delays replicate traffic patterns in the network. Model calibration also refers to the process of adjusting and confirming values of Origin-Destination (OD) movements in the trip matrices to improve the performance of the model, which is achieved by making use of the various data collected during the study. Manual adjustments to the traffic matrix can also be applied where there may be a particular imbalance of trip patterns.

4.1.2 A number of calibration and validation checks were performed as follows:

- Routeing validation
- Model convergence
- Link flow calibration

4.1.3 This Chapter describes the process of model calibration and presents the 2015 base model calibration results for 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00.

4.2 CALIBRATION AND VALIDATION CRITERIA

4.2.1 Transport models should be developed in accordance with the DfT's TAG guidance and should meet the criteria shown in Table 4.1.

Table 4.1: TAG Model Calibration and Validation Criteria

Measure	Criteria	Acceptability Guideline
Flow Criteria		
Observed flow < 700 vph	Modelled flow within ±100 vph	> 85 % of links
Observed flow 700 - 2,700 vph	Modelled flow within ±15%	> 85 % of links
Observed flow > 2,700 vph	Modelled flow within ±400 vph	> 85 % of links
Total screenline flows (normally >5 links) to be within ±5%		All (or nearly all) screenlines
GEH Criteria		
GEH Statistic for individual links < 5		> 85 % of links
GEH Statistic for screenline totals < 4		All (or nearly all) screenlines
Journey Times		
Modelled journey time within ±15% (or 1 minute, whichever is greater) of observed journey time		> 85% of routes

4.2.2 Traffic flows are required to meet either the 'GEH' or the 'Flow' criteria on 85% of links, and 'all or nearly all' screenlines.

4.2.3 Model calibration refers to traffic count data which has been used as part of the model and matrix calibration, i.e. input to the matrix estimation process.

4.2.4 Model validation refers to independent observed data which has not been used during for calibration. There is no guidance on the proportion of traffic data that should be reserved for model validation, however 10% is usually considered to be sufficient. In addition, journey times are compared to check the modelled speeds and levels of delay are in accordance with observed conditions.

4.2.5 Both sets of traffic count data (for calibration and validation) are subject to the criteria defined in Table 4.1, i.e. a comparison of the individual counts is made as well as for a set of screenlines. The results of model calibration are discussed in section 4.5, whilst the model validation results are discussed in Chapter 5. The calibration and validation screenlines are shown graphically in Appendix C.

4.2.6 In addition to the link flow and journey time criteria shown in Table 4.1, the following checks must be made of the changes brought about by matrix estimation (ME):

- → Assessment of the change in trip volumes between Prior (pre-ME) matrix and Final (post-Me) matrix
- → Assessment of the change in trip length distribution between the Prior matrix and Final matrix

4.2.7 These comparisons of the Prior and Final traffic demand matrices are described in Chapter 5.

4.3 SURVEY DATA CHECKS

4.3.1 All count data was firstly checked for consistency and any observed counts that were inconsistent with counts at adjacent sites were balanced, as described in the main LMVR[8].

4.4 MODEL CALIBRATION PROCESS

ROUTEING VALIDATION

4.4.1 Sense checks were carried out on a number of strategic and local routes across the study area. In particular, route choice of HGV was checked so that key strategic routes were chosen rather than localised short-cuts.

QUEUE FORMATION

4.4.2 Modelled queue lengths were reviewed to check that they were forming in expected locations, e.g. Ipswich town centre. This highlighted areas where queues at particular junctions were preventing the required traffic demand from getting through that junction and onto downstream links. Where such queuing was observed, the modelled flows were compared against observed flows on surrounding links to determine whether these delays should be reduced in order to increase the capacity of a particular turn to allow the observed flow to be achieved. In such cases the ‘critical gap’ and ‘follow-up’ times (at priority junctions) were adjusted to reduce the delay on the required turns.

DEMAND CALIBRATION

4.4.3 As described in Chapter 3, the process of model calibration involves adjustments to the traffic demand matrices as well as to the network.

[8] Sizewell C VISUM Model Local Model Validation Report (May 2016)

4.4.4 The Initial matrices were firstly assigned to the networks and checks were made on vehicle routeing. Following this step, the same adjustments were made to the Initial traffic demand matrices for the additional four hours as were required for the main three hours. These were:

- → HGV 'I-I' matrix doubled (external movements unchanged)
- → Car 'I-I' matrix factored down by 5% (external movements unchanged)

4.4.5 These manual changes were made to the Initial matrices to produce 'Prior' matrices which were assigned to the network, before applying matrix estimation which resulted in the Final matrices. The matrix totals at each stage, for all seven modelled hours, are shown in Table 4.2.

Table 4.2: Final Highway Matrix Totals (veh/hour)

Vehicle Class / Modelled Hour	Matrix Totals (veh/hr)		
	Initial	Prior (Pre-ME)	Final (Post-ME)
Car			
06:00-07:00	19,688	18,960	**16,789**
07:00-08:00	45,236	43,580	**39,155**
08:00-09:00	61,170	58,834	**53,300**
15:00-16:00	53,148	50,971	**49,865**
16:00-17:00	53,618	51,698	**48,564**
17:00-18:00	59,316	57,110	**50,946**
18:00-19:00	41,552	40,048	**38,943**
LGV			
06:00-07:00	1,610	1,610	**1,741**
07:00-08:00	3,549	3,549	**3,785**
08:00-09:00	3,499	3,499	**3,727**
15:00-16:00	3,125	3,125	**3,062**
16:00-17:00	3,483	3,483	**3,712**
17:00-18:00	2,650	2,650	**2,771**
18:00-19:00	1,884	1,884	**1,930**
HGV			
06:00-07:00	1,169	1,474	**1,808**
07:00-08:00	1,595	2,013	**2,456**
08:00-09:00	1,753	2,212	**2,747**
15:00-16:00	1,725	2,232	**2,744**
16:00-17:00	1,636	1,952	**2,232**
17:00-18:00	1,155	1,378	**1,623**
18:00-19:00	861	1,027	**1,173**

4.4.6 As with the main three hours, some OD pairs in the additional four hours matrices were 'frozen' during matrix estimation so that these particular trips would not be changed:

- → Zone 1001 which represents Martlesham Park & Ride (matrix volumes based on ATC)
- → 'External-External' trips (derived from EERHAM matrices)

4.4.7 Assignment of the Final highway matrices was assessed against the calibration and validation criteria set out in Table 4.1, the results of which are discussed in sections 4.5 and 5.2.

4.5 MODEL CALIBRATION RESULTS

4.5.1 Checks have been made so that:

- → TAG guidance on model convergence (Delta (δ) values of less than 0.2%) is met
- → Calibration and validation of VISUM meets DfT TAG criteria

CONVERGENCE

4.5.2 Each transport system is assigned over a number of iterations until a level of stability or 'convergence' is achieved. The TAG-recommended convergence criteria, which is pre-set set within VISUM, is set out in Table 4.3.

Table 4.3: TAG Convergence Criteria

Measure of Convergence	Acceptable Value
'Delta'	Less than 1%
Percentage of links with flow changes < 5% ('P')	Four consecutive iterations greater than 90%

4.5.3 The maximum number of 'LUCE' assignment iterations has been set to 100 for each transport system, since the majority of models should converge within this range. For the Car element these represent the 'inner' iterations within each overall 'Assignment with ICA' iteration. For the Car assignment VISUM does not assess the 'P' statistic in terms of percentage change in link flows; rather it assesses the difference in flows on a turn basis in terms of the GEH and reports the percentage of turns with flow changes less than a GEH value of 1.

4.5.4 The results of the assignment are shown in Table 4.5 to Table 4.7 for the 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 models respectively. These demonstrate that the vehicle classes converge 'naturally', i.e. according to the settings defined within the model.

Table 4.4: Convergence Results (06:00-07:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000237936	4	16.9%	92.9%	99.0%	98.8%
LGV	0.00000450914	6	0.0%	0.0%	0.0%	99.0%
HGV	0.00000257836	6	0.0%	0.0%	0.0%	98.8%

Table 4.5: Convergence Results (07:00-08:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000807238	50	99.9%	99.8%	99.9%	99.7%
LGV	0.00000659198	6	0.0%	0.0%	0.0%	99.0%
HGV	0.00000365417	6	0.0%	0.0%	0.0%	98.9%

Table 4.6: Convergence Results (16:00-17:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000712288	50	100.0%	100.0%	100.0%	99.8%
LGV	0.00000108542	6	0.0%	0.0%	0.0%	98.7%
HGV	0.00000199356	6	0.0%	0.0%	0.0%	99.1%

Table 4.7: Convergence Results (18:00-19:00)

PrT System	'Delta'		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
Car	0.00000569294	50	99.5%	99.5%	98.8%	98.7%
LGV	0.00000068158	6	0.0%	0.0%	0.0%	99.4%
HGV	0.00000273013	6	0.0%	0.0%	0.0%	98.8%

CALIBRATION TRAFFIC FLOWS

4.5.5 Observed traffic flow data that was used during matrix estimation to produce a better fit of traffic demand is compared against assigned modelled outputs as part of model calibration. The majority of count data was used during model calibration (114 link counts), whilst around 10% of the data was reserved for model validation (16 link counts) hence was excluded from the matrix estimation input.

4.5.6 The assignment of the matrix to the network should reproduce the overall level and general distribution of observed traffic, which is assessed by comparing assignment results with selected observed link flows within the study area. The assessment is conducted in accordance with guidance provided in TAG Unit M3.1. The model outputs are compared against surveyed traffic data for the modelled hour to ascertain the goodness-of-fit. A modified Chi² statistic known as the GEH (Geoffrey Edward Havers) statistic is used to determine the best fit. In terms of traffic flow, for each count location the 'GEH' statistic is calculated as a combination of the absolute difference and the percentage difference between the modelled (M) and observed (O) traffic flow. The formula is:

$$GEH = \sqrt{\frac{(O - M)^2}{0.5\ (O + M)}}$$

4.5.7 The GEH statistic recognises that when traffic flows are low the percentage difference between observed and modelled flows may be high but the significance of this difference is small. A GEH value greater than 10 indicates that closer attention is required as the match between observed and modelled flows is poor, while a GEH of less than 5 indicates a very good fit. According to DfT guidance, modelled flows should have a GEH value of less than 5, or meet the 'flow' criteria (as per Table 4.1), for at least 85% of traffic counts, in order to be considered a good 'fit'.

4.5.8 Traffic models are typically built using total link flows, and there is no guidance or requirement to assess turning movements. Consequently, where MCC survey data is used, total flows to and from each arm were calculated to provide link totals.

4.5.9 A summary of the link flow calibration for the 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 modelled hours are shown in Table 4.8 to Table 4.11. Also presented are the results from the Prior matrix assignment (before matrix estimation) with detailed results provided in Appendix D.

Table 4.8: Traffic Flow Calibration Summary (06:00-07:00)

06:00-07:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	79	92	81%	12
LGV	114	98	114	100%	0
HGV	114	102	107	94%	6
Total Vehs	114	82	91	80%	14
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**25052**	**21907**		**-13%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	5		50%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	105	112	98%	2
LGV	114	111	114	100%	0
HGV	114	112	113	99%	0
Total Vehs	114	103	108	96%	1
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**25052**	**21391**		**-15%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	8		80%	0

Table 4.9: Traffic Flow Calibration Summary (07:00-08:00)

07:00-08:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	68	82	74%	21
LGV	114	55	107	94%	7
HGV	114	101	105	92%	4
Total Vehs	114	60	75	67%	22
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**52148**	**47867**		**-8%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	4		40%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	98	99	88%	5
LGV	114	110	114	100%	0
HGV	114	111	114	100%	0
Total Vehs	114	95	98	87%	7
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**52148**	**47501**		**-9%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	8		80%	0

Table 4.10: Traffic Flow Calibration Summary (16:00-17:00)

16:00-17:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	60	74	68%	18
LGV	114	60	112	98%	1
HGV	114	107	111	97%	1
Total Vehs	114	60	70	63%	26
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**62298**	**54944**		**-12%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	5		50%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	104	105	93%	2
LGV	114	107	114	100%	0
HGV	114	112	114	100%	0
Total Vehs	114	99	101	90%	3
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**62298**	**56368**		**-10%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	9		90%	0

Table 4.11: Traffic Flow Calibration Summary (18:00-19:00)

18:00-19:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	67	85	75%	15
LGV	114	90	113	99%	2
HGV	114	105	114	100%	0
Total Vehs	114	66	81	73%	15
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**45382**	**42953**		**-5%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	6		60%	2
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	114	102	106	93%	3
LGV	114	103	113	99%	0
HGV	114	109	114	100%	0
Total Vehs	114	101	106	93%	3
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**45382**	**42279**		**-7%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	10	8		80%	1

4.5.10 These tables demonstrate that the model is well calibrated in each represented hour. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

5 HIGHWAY ASSIGNMENT MODEL – VALIDATION

5.1 INTRODUCTION

5.1.1 As described in Chapter 4, model calibration refers to the process of checking route choices and network conditions and comparing against traffic counts undertaken across the study area. Validation of the assignment model requires that the modelled transport flows replicate independent data not used in the construction of the models, i.e. other link flow counts not used in matrix estimation. Whilst there is no guidance on the proportion of traffic data that should be reserved for model validation, 10% is usually considered to be sufficient and this has been applied for the Sizewell C 2015 base models.

5.1.2 This Chapter describes the 2015 base model validation results for 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 hours.

5.2 MODEL VALIDATION RESULTS

LINK TRAFFIC FLOWS

5.2.1 As with the traffic flow calibration, the same GEH criteria is applied in order to establish the goodness-of-fit of link flows against observed. Independent count data is compared against modelled output, for each individual vehicle class as well as total vehicles, to assess in detail the level of validation of the model.

5.2.2 A summary of the link flow validation for the 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 modelled hours is shown in Table 5.1 to Table 5.4. Also presented are the results from the Prior matrix assignment (before matrix estimation) with detailed results provided in Appendix E.

Table 5.1: Traffic Flow Validation Summary (06:00-07:00)

06:00-07:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	13	14	88%	1
LGV	16	13	16	100%	0
HGV	16	15	16	100%	0
Total Vehs	16	14	14	88%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**4557**	**2865**		**-37%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	2		100%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	14	15	94%	0
LGV	16	16	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	14	14	88%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**4557**	**2477**		**-46%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	2		100%	0

Table 5.2: Traffic Flow Validation Summary (07:00-08:00)

07:00-08:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	14	13	88%	1
LGV	16	9	14	88%	0
HGV	16	15	16	100%	0
Total Vehs	16	14	13	88%	1
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7933**	**5916**		**-25%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	2		100%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	14	14	88%	0
LGV	16	15	16	100%	0
HGV	16	16	16	100%	0
Total Vehs	16	14	14	88%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7933**	**6070**		**-23%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

Table 5.3: Traffic Flow Validation Summary (16:00-17:00)

16:00-17:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	13	14	88%	1
LGV	16	10	14	88%	0
HGV	16	16	16	100%	0
Total Vehs	16	13	14	88%	1
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**9838**	**6892**		**-30%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	11	12	75%	0
LGV	16	14	14	88%	0
HGV	16	16	16	100%	0
Total Vehs	16	11	13	81%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**9838**	**7615**		**-23%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

Table 5.4: Traffic Flow Validation Summary (18:00-19:00)

18:00-19:00					
Prior Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	11	14	88%	1
LGV	16	14	14	88%	2
HGV	16	15	16	100%	0
Total Vehs	16	9	13	81%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7376**	**5663**		**-23%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0
Final Matrix Assignment					
Individual Counts					
Veh Class	Counts	GEH<5	Flow Criteria Met	% GEH or Flow Criteria Met	GEH>10
Car	16	12	13	81%	0
LGV	16	14	14	88%	1
HGV	16	16	16	100%	0
Total Vehs	16	12	13	81%	0
Total Traffic Count (all sites)	Obs	Mod		% Diff	
Total Vehs	**7376**	**5415**		**-27%**	
Screenlines					
Total Vehs	Counts	GEH<4		% GEH<4	GEH>10
Screenlines	2	1		50%	0

5.2.3 These tables demonstrate that the model is well validated in each represented hour. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

JOURNEY TIMES

5.2.4 The locations of journey time routes are shown in Appendix A. A summary of the journey time validation for the 08:00-09:00, 15:00-16:00 and 17:00-18:00 modelled hours is shown in Table 5.5 to Table 5.8. The detailed comparison results for each route individually are presented in Appendix F.

Table 5.5: Journey Time Validation Summary (06:00-07:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	19:12	16:19	22:05	18:46	✓
	WB	18:30	15:44	21:16	19:14	✓
Route 2	NB	27:41	23:32	31:50	27:41	✓
	SB	28:41	24:23	32:59	27:48	✓
Route 3	NB	27:13	23:08	31:18	25:31	✓
	SB	24:51	21:07	28:35	25:36	✓
Route 4	EB	43:11	36:42	49:40	41:45	✓
	WB	38:08	32:25	43:51	41:29	✓
Route 5	EB	45:55	39:02	52:48	40:20	✓
	WB	42:12	35:52	48:32	39:47	✓
Route 6	NB	23:03	19:36	26:30	23:57	✓
	SB	24:32	20:51	28:13	22:00	✓
Route 7	NB	26:44	22:43	30:45	26:49	✓
	SB	26:29	22:31	30:27	27:27	✓
Route 8	NB	35:57	30:33	41:21	30:10	×
	SB	33:32	28:30	38:34	29:50	✓
Route 9	EB	27:34	23:26	31:42	22:23	×
	WB	28:16	24:02	32:30	22:26	×
Route 10	NB	31:43	26:58	36:28	32:32	✓
	SB	32:12	27:22	37:02	32:40	✓
Total Routes		**20**				**17**
						85%

Table 5.6: Journey Time Validation Summary (07:00-08:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	19:14	16:21	22:07	20:21	✓
	WB	18:50	16:00	21:40	20:48	✓
Route 2	NB	29:17	24:53	33:41	29:36	✓
	SB	31:26	26:43	36:09	30:23	✓
Route 3	NB	26:59	22:56	31:02	25:44	✓
	SB	27:22	23:16	31:28	26:07	✓
Route 4	EB	42:07	35:48	48:26	41:57	✓
	WB	40:37	34:31	46:43	41:46	✓
Route 5	EB	44:03	37:27	50:39	40:28	✓
	WB	43:16	36:47	49:45	40:04	✓
Route 6	NB	22:59	19:32	26:26	24:14	✓
	SB	24:53	21:09	28:37	22:18	✓
Route 7	NB	30:42	26:06	35:18	27:06	✓
	SB	25:47	21:55	29:39	27:43	✓
Route 8	NB	35:16	29:59	40:33	31:06	✓
	SB	36:16	30:50	41:42	31:29	✓
Route 9	EB	27:24	23:17	31:31	22:33	×
	WB	29:18	24:54	33:42	22:38	×
Route 10	NB	33:25	28:24	38:26	33:33	✓
	SB	33:10	28:11	38:08	33:59	✓
Total Routes		**20**				**18**
						90%

Table 5.7: Journey Time Validation Summary (16:00-17:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	18:43	15:55	21:31	21:20	✓
	WB	18:56	16:06	21:46	21:43	✓
Route 2	NB	32:52	27:56	37:48	32:14	✓
	SB	33:37	28:34	38:40	31:48	✓
Route 3	NB	32:22	27:31	37:13	26:29	×
	SB	28:50	24:30	33:09	25:57	✓
Route 4	EB	42:06	35:47	48:25	42:09	✓
	WB	44:27	37:47	51:07	41:47	✓
Route 5	EB	43:29	36:58	50:00	40:49	✓
	WB	45:55	39:02	52:48	40:05	✓
Route 6	NB	27:03	23:00	31:06	24:38	✓
	SB	25:17	21:29	29:05	22:13	✓
Route 7	NB	29:38	25:11	34:05	27:11	✓
	SB	28:16	24:02	32:30	27:57	✓
Route 8	NB	39:08	33:16	45:00	33:03	×
	SB	37:45	32:05	43:25	31:57	×
Route 9	EB	29:40	25:13	34:07	22:40	×
	WB	29:14	24:51	33:37	22:40	×
Route 10	NB	34:32	29:21	39:43	33:28	✓
	SB	34:20	29:11	39:29	34:18	✓
Total Routes		**20**				**15**
						75%

Table 5.8: Journey Time Validation Summary (18:00-19:00)

Route	Dir	Observed Journey Time (mm:ss)			Modelled Time (mm:ss)	Within limit
		Observed	Lower Limit	Upper Limit		
Route 1	EB	17:42	15:03	20:21	19:35	✓
	WB	17:28	14:51	20:05	19:40	✓
Route 2	NB	29:51	25:22	34:20	29:15	✓
	SB	29:05	24:43	33:27	28:30	✓
Route 3	NB	26:52	22:50	30:54	25:50	✓
	SB	26:44	22:43	30:45	25:41	✓
Route 4	EB	41:40	35:25	47:55	41:50	✓
	WB	42:28	36:06	48:50	41:32	✓
Route 5	EB	42:09	35:50	48:28	40:26	✓
	WB	41:57	35:39	48:15	39:52	✓
Route 6	NB	25:56	22:03	29:49	24:06	✓
	SB	24:11	20:33	27:49	22:06	✓
Route 7	NB	28:55	24:35	33:15	26:57	✓
	SB	28:03	23:51	32:15	27:39	✓
Route 8	NB	36:55	31:23	42:27	31:10	×
	SB	32:46	27:51	37:41	30:21	✓
Route 9	EB	28:26	24:10	32:42	22:31	×
	WB	29:26	25:01	33:51	22:30	×
Route 10	NB	32:36	27:43	37:29	32:49	✓
	SB	32:12	27:22	37:02	33:03	✓
Total Routes		**20**				**17**
						85%

5.2.5 These results demonstrate that the modelled journey times are well validated for each represented hour with at least 85% of modelled routes falling within the accepted range of observed values, with the exception of 16:00-17:00 hours although Route 8 falls marginally outside of the accepted range in both directions.

PRE-ME AND POST-ME MATRIX COMPARISON

5.2.6 As noted in section 3, TAG unit M3.1 (January 2014) provides guidance for assessing the level of change brought about by the matrix estimation process, which is the last step of matrix calibration. The following criteria are set out in TAG for the comparison of changes between pre- and post-matrix estimation:

8.3.13 The changes brought about by matrix estimation should be carefully monitored by the following means:

- scatter plots of matrix zonal cell values, prior to and post matrix estimation, with regression statistics (slopes, intercepts and R^2 values);
- scatter plots of zonal trip ends, prior to and post matrix estimation, with regression statistics (slopes, intercepts and R^2 values);
- trip length distributions, prior to and post matrix estimation, with means and standard deviations; and
- sector to sector level matrices, prior to and post matrix estimation, with absolute and percentage changes.

8.3.14 The changes brought about by matrix estimation should **not** be significant. The criteria by which the significance of the changes brought about by matrix estimation may be judged are given in Table 5.

Table 5 Significance of Matrix Estimation Changes

Measure	Significance Criteria
Matrix zonal cell values	Slope within 0.98 and 1.02 Intercept near zero R^2 in excess of 0.95
Matrix zonal trip ends	Slope within 0.99 and 1.01 Intercept near zero R^2 in excess of 0.98
Trip length distributions	Means within 5% Standard deviations within 5%
Sector to sector level matrices	Differences within 5%

8.3.15 All exceedances of these criteria should be examined and assessed for their importance for the accuracy of the matrices in the Fully Modelled Area or the area of influence of the scheme to be assessed. Where the exceedances are important and statistically significant, the development of the prior matrix should be reconsidered. Where they are not considered to be important, the reasons should be documented in the Local Model Validation Report.

5.2.7 A comparison of the Prior and Final traffic matrices has been undertaken to check the change in trip patterns resulting from the matrix estimation (ME) process. The matrix totals are contained in Table 4.2.

5.2.8 Trip length distribution changes are displayed in Figure 5.1 to Figure 5.4 and in Table 5.9 to Table 5.12 for the 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 periods. These demonstrate that the trip length distributions of all vehicle classes show little change between the Prior (pre-ME) and Final (post-ME) trip matrices.

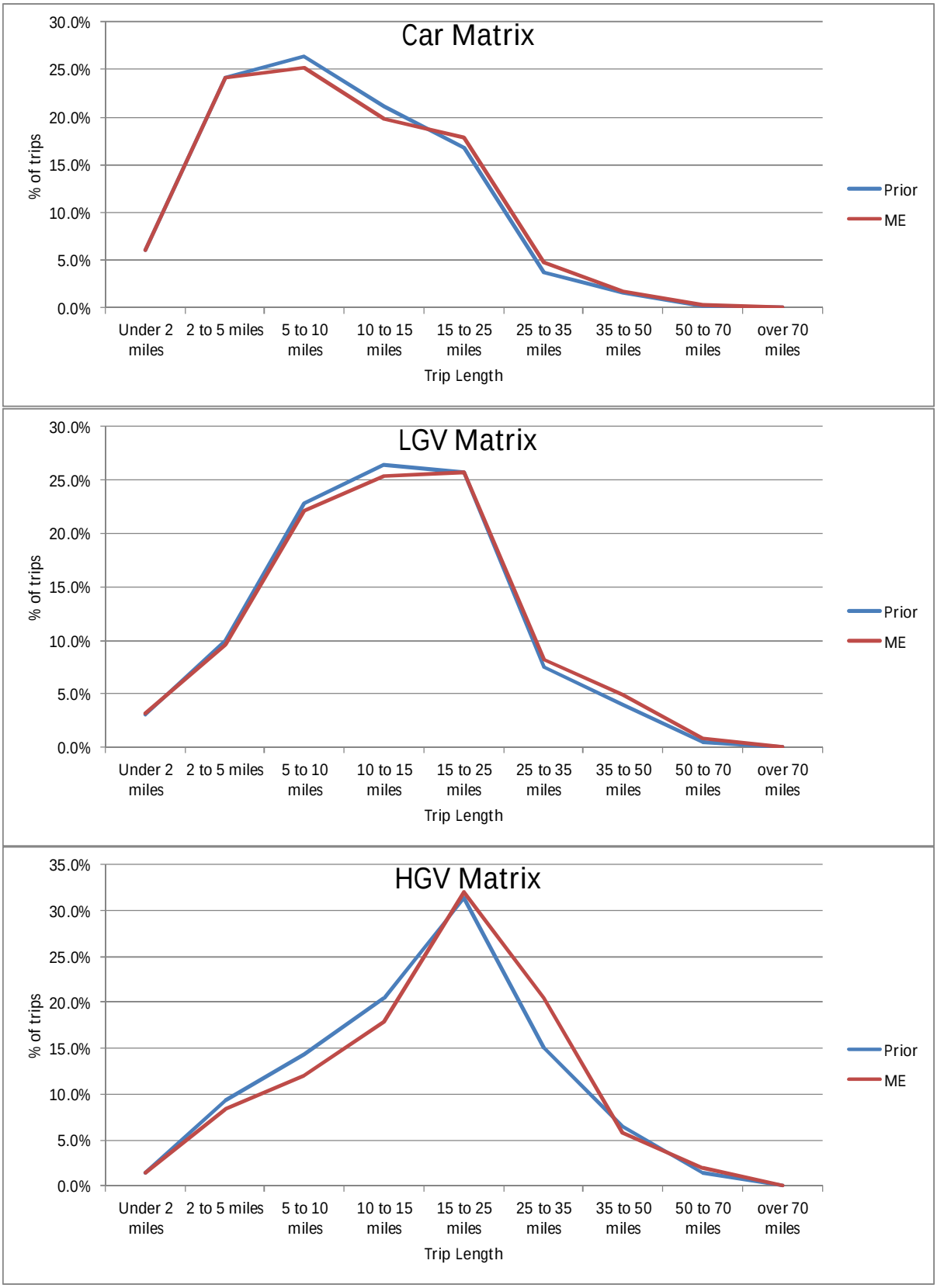


Figure 5.1: Trip Length Distribution (06:00-07:00) Prior and Final Matrices

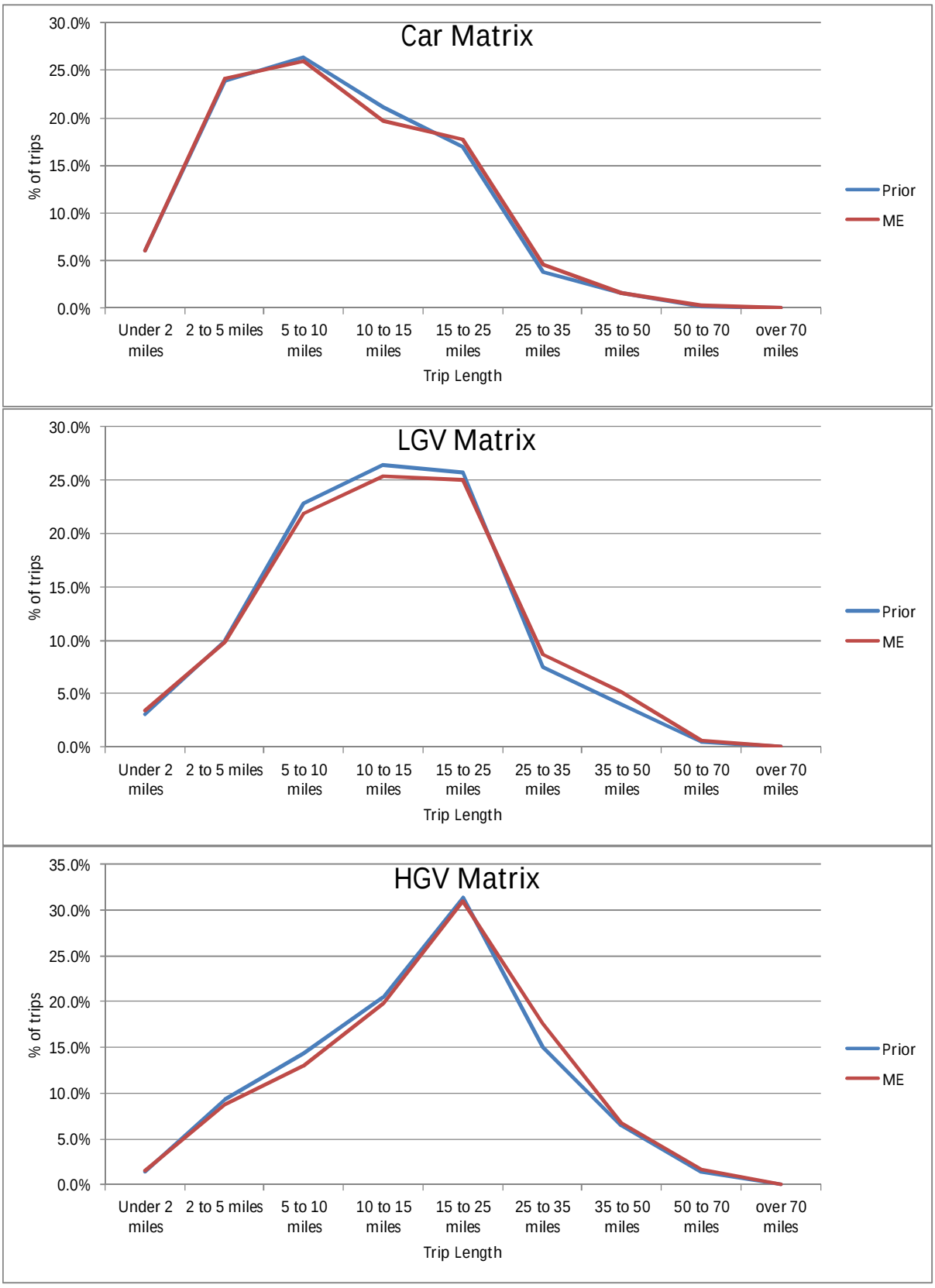


Figure 5.2: Trip Length Distribution (07:00-08:00) Prior and Final Matrices

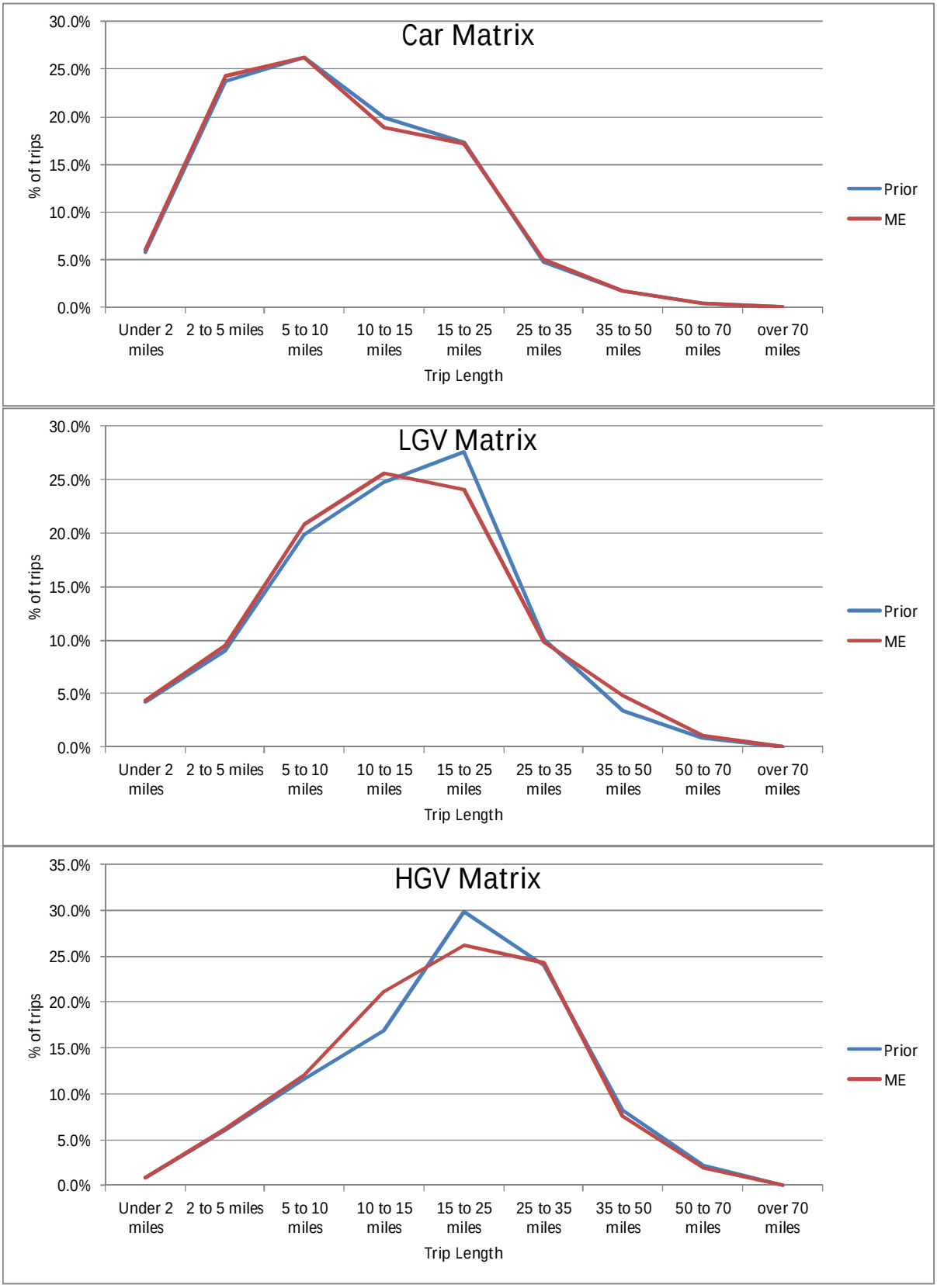


Figure 5.3: Trip Length Distribution (16:00-17:00) Prior and Final Matrices

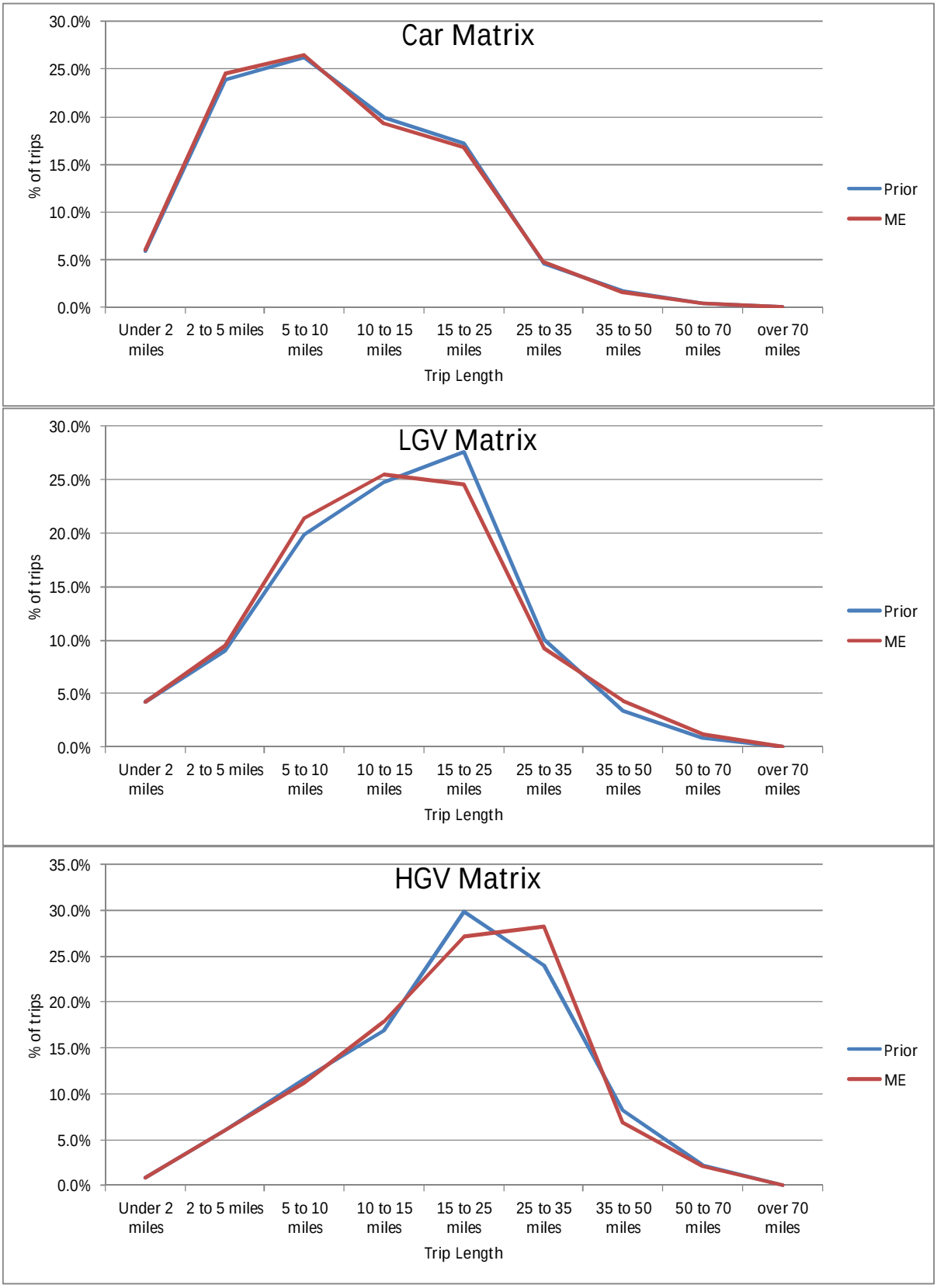


Figure 5.4: Trip Length Distribution (18:00-19:00) Prior and Final Matrices

Table 5.9: Change in Trip Length Distribution (06:00-07:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	16.72	17.34	**3.72%**	22.96	23.94	**4.26%**	28.48	30.01	**5.38%**
Std Dev	12.86	13.61	**5.85%**	15.08	16.16	**7.13%**	17.56	17.46	**-0.57%**

Table 5.10: Change in Trip Length Distribution (07:00-08:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	16.77	17.05	**1.68%**	22.96	23.82	**3.73%**	28.48	29.41	**3.27%**
Std Dev	12.88	13.24	**2.84%**	15.08	16.12	**6.87%**	17.56	17.81	**1.43%**

Table 5.11: Change in Trip Length Distribution (16:00-17:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	17.32	17.34	**0.12%**	23.91	24.06	**0.62%**	32.28	31.27	**-3.12%**
Std Dev	13.68	14.00	**2.31%**	15.63	16.61	**6.32%**	18.10	17.93	**-0.97%**

Table 5.12: Change in Trip Length Distribution (18:00-19:00)

Trip Length	Car			LGV			HGV		
	Prior	ME	% change	Prior	ME	% change	Prior	ME	% change
Mean	17.26	17.02	**-1.38%**	23.91	23.93	**0.06%**	32.28	32.07	**-0.65%**
Std Dev	13.64	13.59	**-0.35%**	15.63	16.65	**6.56%**	18.10	17.53	**-3.18%**

5.2.9 The regression statistics, analysis changes in trip volumes at zonal, trip end and sector level, are displayed in Table 5.13 to Table 5.16 for the 06:00-07:00, 07:00-08:00, 16:00-17:00 and 18:00-19:00 models respectively. The sectored movements are defined as follows, based on zone categorisation which is described in the main LMVR[9]:

- External to External
- External to Internal
- Internal to External
- Internal to Internal

[9] Sizewell C VISUM Model Local Model Validation Report (May 2016)

Table 5.13: Prior and Final Matrix Comparison (06:00-07:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.86	0.87
Origin Trip Ends		1.16	0.87	0.97
Destination Trip Ends		2.22	0.85	0.90
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-13.72%		
	I-E	23.19%		
	I-I	-18.35%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	1.00	0.88
Origin Trip Ends		0.20	1.04	0.94
Destination Trip Ends		0.46	1.00	0.96
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	14.19%		
	I-E	3.15%		
	I-I	9.83%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	1.83	0.82
Origin Trip Ends		-0.68	1.37	0.89
Destination Trip Ends		-1.57	1.55	0.94
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	23.02%		
	I-E	59.60%		
	I-I	-2.47%		

Table 5.14: Prior and Final Matrix Comparison (07:00-08:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.01	0.89	0.92
Origin Trip Ends		3.40	0.87	0.98
Destination Trip Ends		2.75	0.88	0.96
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-11.28%		
	I-E	9.08%		
	I-I	-14.19%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.01	0.91	0.86
Origin Trip Ends		0.76	1.00	0.95
Destination Trip Ends		2.43	0.86	0.92
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	13.38%		
	I-E	-9.11%		
	I-I	16.64%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	1.45	0.84
Origin Trip Ends		-0.56	1.30	0.97
Destination Trip Ends		-0.83	1.35	0.94
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	34.11%		
	I-E	38.92%		
	I-I	4.48%		

Table 5.15: Prior and Final Matrix Comparison (16:00-17:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	0.95	0.96
Origin Trip Ends		5.94	0.90	0.98
Destination Trip Ends		1.76	0.93	0.98
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-1.47%		
	I-E	2.60%		
	I-I	-9.03%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.97	0.90
Origin Trip Ends		1.66	0.92	0.97
Destination Trip Ends		1.48	0.94	0.96
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-2.34%		
	I-E	-2.29%		
	I-I	20.35%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	1.19	0.92
Origin Trip Ends		0.20	1.11	0.99
Destination Trip Ends		0.09	1.13	0.92
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	12.71%		
	I-E	21.72%		
	I-I	12.82%		

Table 5.16: Prior and Final Matrix Comparison (18:00-19:00)

CAR				
		Intercept	**Slope**	**R^2**
Zonal Trips		-0.01	0.99	0.95
Origin Trip Ends		-0.46	0.98	0.99
Destination Trip Ends		0.75	0.97	0.98
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	1.67%		
	I-E	5.81%		
	I-I	-5.50%		
LGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	0.96	0.93
Origin Trip Ends		0.43	0.96	0.98
Destination Trip Ends		0.75	0.90	0.98
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	-2.86%		
	I-E	-12.81%		
	I-I	17.81%		
HGV				
		Intercept	**Slope**	**R^2**
Zonal Trips		0.00	1.48	0.96
Origin Trip Ends		-0.26	1.22	0.97
Destination Trip Ends		-0.34	1.25	0.96
Sector Changes	**Sector**	**% Change**		
	E-E	0.00%		
	E-I	14.38%		
	I-E	28.42%		
	I-I	3.06%		

5.2.10 These comparisons demonstrate that the changes brought about by matrix estimation, although not strictly within the TAG recommended ranges, are reasonable given that minimal changes were made to improve the Initial matrices prior to applying matrix estimation, and that the trip length distributions of the pre-ME and post-ME matrices are very similar.

6 SUMMARY

6.1.1 WSP | Parsons Brinckerhoff was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

6.1.2 Highway models were initially developed in VISUM 15.00-03, for a 2015 base year, for the following three time periods:

- 08:00 – 09:00
- 15:00 – 16:00
- 17:00 – 18:00

6.1.3 The calibration and validation of these models is described in the Sizewell C VISUM Model Local Model Validation Report (May 2016). Additional 2015 base year highway models were subsequently developed for the following four time periods:

- 06:00 – 07:00
- 07:00 – 08:00
- 16:00 – 17:00
- 18:00 – 19:00

6.1.4 This report details the development, calibration and validation of the Sizewell C VISUM traffic model to 2015 conditions for these additional four hours, and should be read in conjunction with the main Local Model Validation Report (LMVR)10.

6.1.5 The process of developing these additional models largely follows the same process applied for the development of the initial three models. In the development of the base year transport models Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 base year models have been calibrated and validated using observed traffic data collected across the study area between March and June 2015 based on the criteria set out in TAG Unit M3.1.

6.1.6 The results reported in chapter 4 and chapter 5, which are summarised for 'Total Vehicles' in Table 6.1 to Table 6.4, demonstrate that the model shows a good level of fit with observed data. Although a small number of sites report a GEH over 10, these are not considered to be in locations critical to the assessment of the Sizewell C development.

[10] Sizewell C VISUM Model Local Model Validation Report (May 2016)

Table 6.1: Summary of 06:00-07:00 Model Calibration and Validation

06:00-07:00				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**103**	**108**	**96%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**8**	**80%**	**0**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**14**	**14**	**88%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	2	100%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**17**	**85%**	

Table 6.2. Summary of 07:00-08:00 Model Calibration and Validation

07:00-08:00				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**95**	**98**	**87%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**8**		**80%**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**14**	**14**	**88%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**18**	**90%**	

Table 6.3. Summary of 16:00-18:00 Model Calibration and Validation

16:00-17:00				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**99**	**101**	**90%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**9**	**90%**	**0**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**11**	**13**	81%
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**15**	**75%**	

Table 6.4. Summary of 18:00-19:00 Model Calibration and Validation

18:00-19:00				
Calibration (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**114**	**101**	**106**	**93%**
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	**10**	**8**	**80%**	**1**
Validation (Total Vehicles)				
Individual Counts	Counts	GEH<5	% GEH or Flow Criteria Met	GEH>10
Count Sites	**16**	**12**	**13**	81%
Screenlines	Counts	GEH<4	% GEH<4	GEH>10
Screenlines	2	1	50%	0
Journey Times	Routes	Within 15% (or 1 min) of obs	%	
Routes	**20**	**17**	**85%**	

6.1.7 Changes brought about by the matrix estimation process, described in section 5.2, show that the trip length distributions from the 'Prior' traffic matrices are largely maintained in the 'Final' matrices.

6.1.8 The above summary of the calibration and validation of the 2015 additional four base models indicate that the model provides a robust representation of the existing conditions on the highway network across the study area, and as such can be used for forecasting of future scenarios in relation to the proposals for the Sizewell C site.

APPENDICES

Appendix A
Traffic Survey Locations

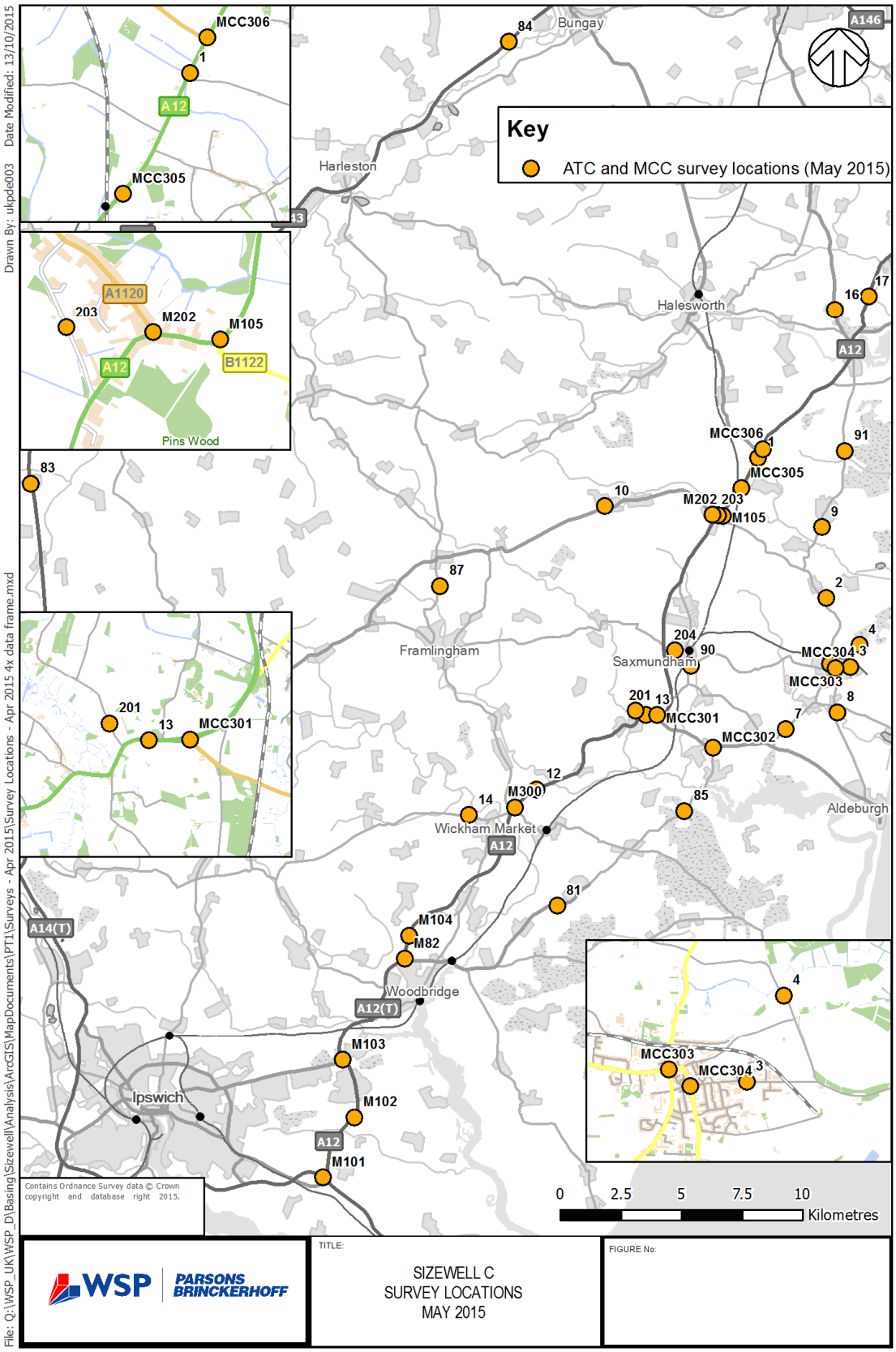


Figure A.1: ATC and MCC Survey locations

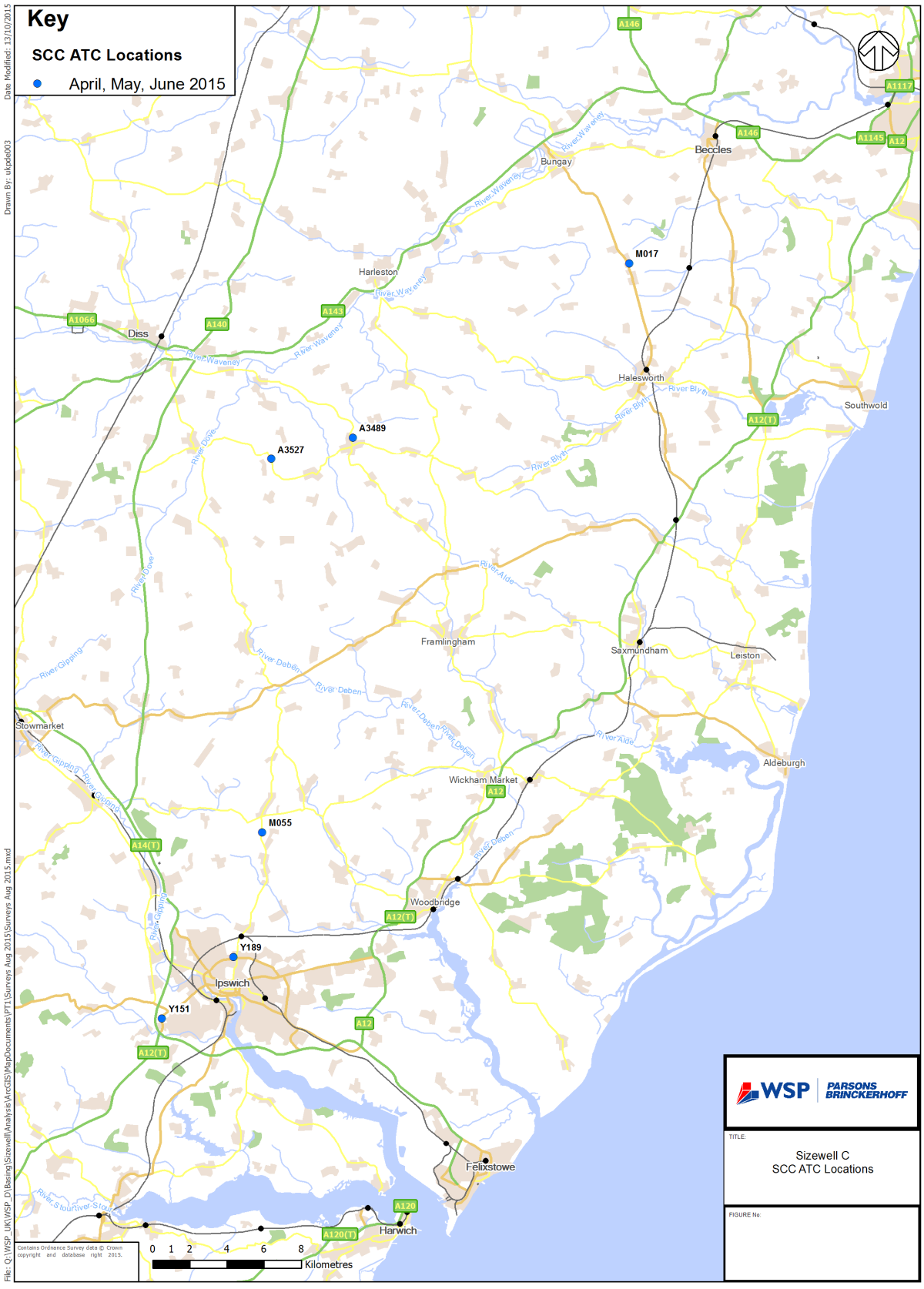


Figure A.2: SCC ATC locations

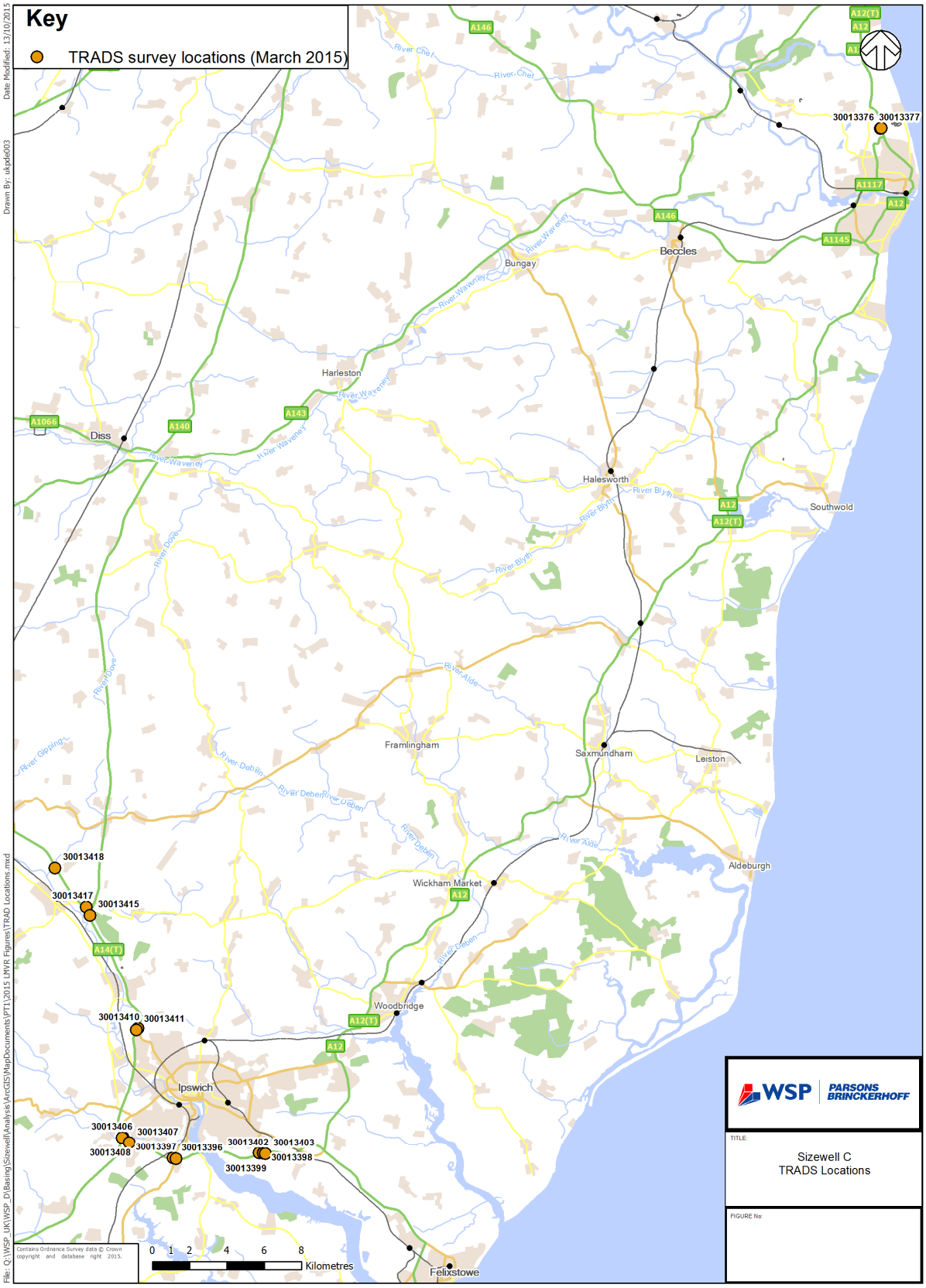


Figure A.3: TRADS Sites

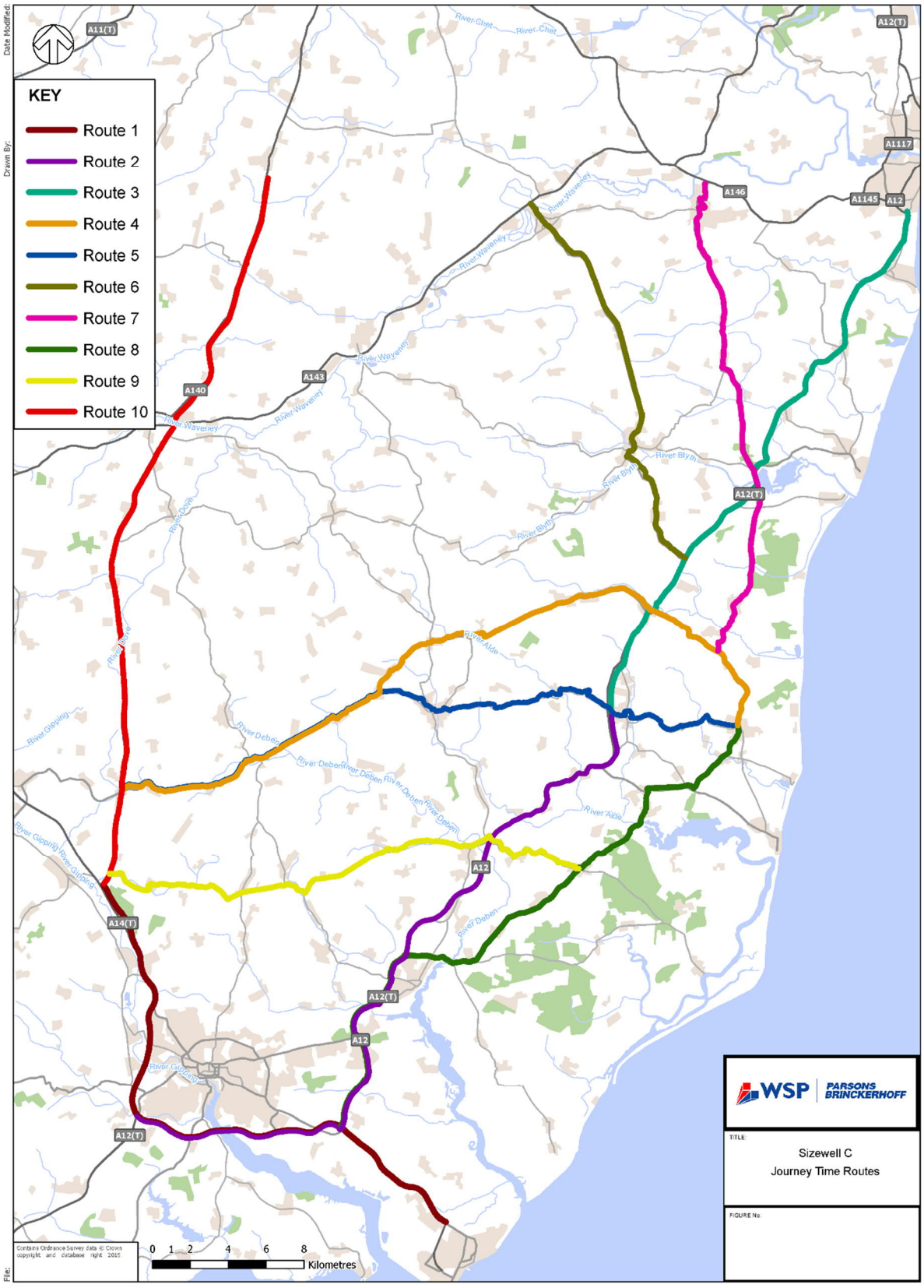


Figure A.4: Journey Time Validation Routes

Appendix B
Traffic Survey Data Exclusions and Balancing

Table B.1: ATC Sites Excluded from Calibration/Validation

Site	Location	Reason
83	83 (A140 near Stoke Ash)	Insufficient data
201	201 (road to Sweffling & Benhall)	Road not modelled - very low count (<20 vehicles)
203	203 (Old High Road, Yoxford)	Road not modelled - very low count (<20 vehicles)
101-1	101-1 (road to Bucklesham, north of A14)	Road not modelled - very low count (<50 vehicles)
104-1	104-1 (New Road, east of A12)	Road not modelled - very low count (<20 vehicles)
104-2	104-2 (A12, south of New Road)	Use 82-1 instead
104-3	104-3 (A12, north of Woodbridge Road)	Use 82-1 instead
104-4	104-4 (Woodbridge Road, west of A12)	Road not modelled - very low count (<40 vehicles)

Table B.2: ATC Counts Balanced

Site	Location	Issue	Count Balancing Measure
101	A14 / A12 Seven Hills Roundabout	ATC vehicle splits inconsistent with TRADS counts on A14	MCC 101 used to provide more reasonable vehicle splits on ATC
82-4	A12 Northbound, S of the A1152 Rbt	Discrepancy between junction total in/out on Car and LGV counts	Car and LGV counts increased on this arm (consistent with surrounding flow observations) to match total in/out at junction
105-2	A12, just East of the B1122 at Yoxford	Discrepancy between junction total in/out on LGV and HGV counts	LGV and HGV counts adjusted by small amounts on this arm to match total in/out at junction
202	A12 / A1120 / B1122	Discrepancy between junction total in/out on all vehicle classes	Counts increased on necessary arms to match total in/out at staggered junction

Appendix C
Calibration and Validation Screenlines

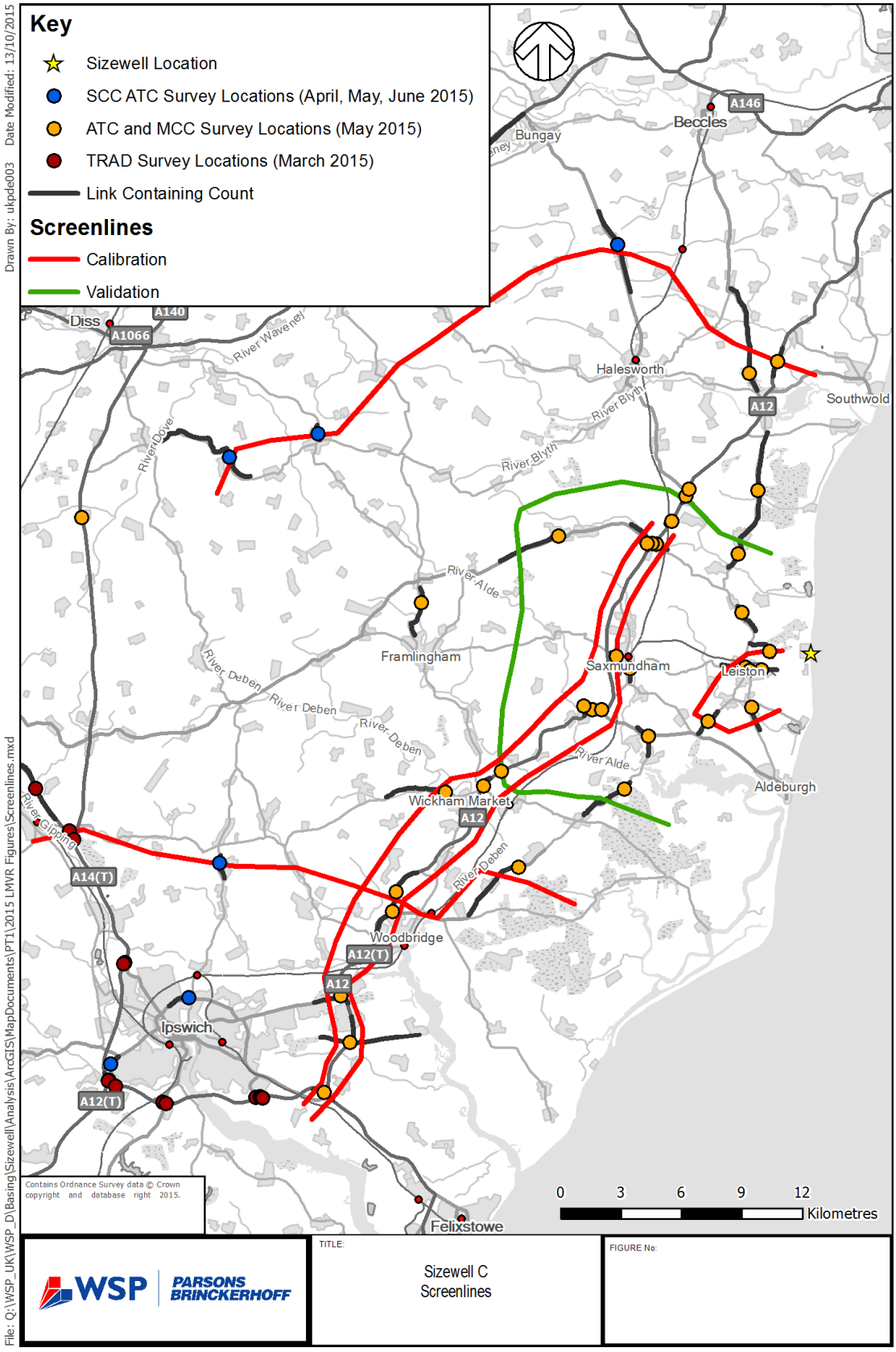


Figure C.1: Calibration and Validation Screenlines

Appendix D
2015 Model Link Flow Calibration Results

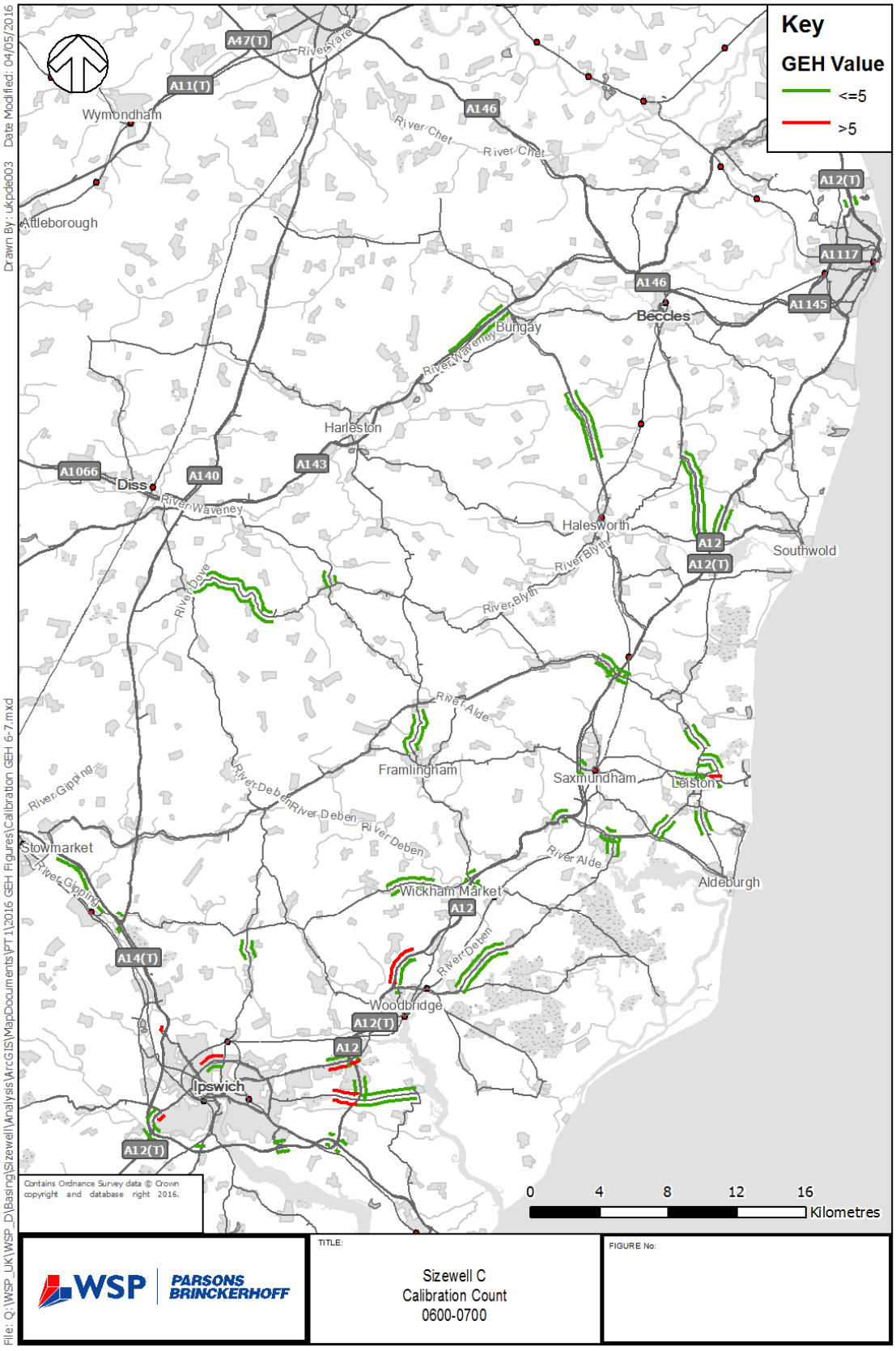


Figure D.1: Traffic Flow Calibration (06:00-07:00)

Table D.1: Traffic Flow Calibration – Screenlines (06:00-07:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	18	24	6	1.3	4	1	-3	1.9	2	0	-2	2.0	24	25	1	0.2
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	49	36	-13	2.0	10	4	-6	2.3	5	5	0	0.0	64	45	-19	2.6
SCC_M017_NB	M017 (A144 Ilketshall)	NB	62	59	-3	0.4	13	8	-5	1.5	7	12	5	1.6	82	79	-3	0.3
ATC_16_NB	A145 North of Blythburgh and B1123	NB	20	22	2	0.4	6	5	-1	0.4	4	7	3	1.3	30	34	4	0.7
ATC_17_NB	A12 North of Blythburgh and A1095	NB	63	70	7	0.9	13	14	1	0.3	15	13	-2	0.5	91	97	6	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	10	14	4	1.2	2	1	-1	0.8	1	0	-1	1.4	13	15	2	0.5
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	42	28	-14	2.4	9	4	-5	2.0	5	4	-1	0.5	56	36	-20	2.9
SCC_M017_SB	M017 (A144 Ilketshall)	SB	65	67	2	0.2	14	13	-1	0.3	7	6	-1	0.4	86	86	0	0.0
ATC_16_SB	A145 North of Blythburgh and B1123	SB	35	35	0	0.0	10	4	-6	2.3	7	12	5	1.6	52	51	-1	0.1
ATC_17_SB	A12 North of Blythburgh and A1095	SB	184	186	2	0.1	34	29	-5	0.9	16	15	-1	0.3	234	230	-4	0.3
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	310	246	-64	3.8	60	63	3	0.4	79	68	-11	1.3	449	377	-72	3.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	14	15	1	0.3	3	5	2	1.0	1	1	0	0.0	18	21	3	0.7
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	300	149	-151	10.1	43	46	3	0.4	34	22	-12	2.3	377	217	-160	9.3
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	49	44	-5	0.7	5	8	3	1.2	4	3	-1	0.5	58	55	-3	0.4
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	16	26	10	2.2	3	4	1	0.5	2	1	-1	0.8	21	31	10	2.0
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	290	280	-10	0.6	58	50	-8	1.1	31	20	-11	2.2	379	350	-29	1.5
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	103	101	-2	0.2	16	11	-5	1.4	5	3	-2	1.0	124	115	-9	0.8
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	32	34	2	0.3	5	5	0	0.0	4	4	0	0.0	41	43	2	0.3
ATC_14_EB	B1078 West of Wickham Market	EB	24	33	9	1.7	3	5	2	1.0	1	4	3	1.9	28	42	14	2.4
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	284	334	50	2.8	65	66	1	0.1	15	19	4	1.0	364	419	55	2.8
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	131	71	-60	6.0	21	8	-13	3.4	3	3	0	0.0	155	82	-73	6.7
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	247	251	4	0.3	101	85	-16	1.7	68	56	-12	1.5	416	392	-24	1.2
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	28	27	-1	0.2	5	9	4	1.5	2	3	1	0.6	35	39	4	0.7
ATC_14_WB	B1078 West of Wickham Market	WB	49	54	5	0.7	11	14	3	0.8	4	6	2	0.9	64	74	10	1.2
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	166	246	80	5.6	21	31	10	2.0	12	19	7	1.8	199	296	97	6.2
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	68	24	-44	6.5	16	12	-4	1.1	5	3	-2	1.0	89	39	-50	6.3
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	386	317	-69	3.7	97	83	-14	1.5	39	46	7	1.1	522	446	-76	3.5

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	58	54	-4	0.5	5	6	1	0.4	2	2	0	0.0	65	62	-3	0.4
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	35	34	-1	0.2	1	3	2	1.4	1	2	1	0.8	37	39	2	0.3
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	104	201	97	7.9	28	42	14	2.4	24	29	5	1.0	156	272	116	7.9
ATC_103-1_EB	Road to Martlesham	EB	16	64	48	7.6	5	6	1	0.4	1	0	-1	1.4	22	70	48	7.1
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	61	67	6	0.8	15	27	12	2.6	7	13	6	1.9	83	107	24	2.5
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	236	240	4	0.3	23	34	11	2.1	10	10	0	0.0	269	284	15	0.9
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	29	30	1	0.2	6	5	-1	0.4	3	2	-1	0.6	38	37	-1	0.2
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	23	31	8	1.5	19	11	-8	2.1	4	2	-2	1.2	46	44	-2	0.3
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	225	264	39	2.5	44	62	18	2.5	15	26	11	2.4	284	352	68	3.8
ATC_103-1_WB	Road to Martlesham	WB	19	0	-19	6.2	7	5	-2	0.8	2	0	-2	2.0	28	5	-23	5.7
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	37	59	22	3.2	10	10	0	0.0	4	7	3	1.3	51	76	25	3.1
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	158	175	17	1.3	20	21	1	0.2	6	7	1	0.4	184	203	19	1.4
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	66	64	-2	0.2	9	1	-8	3.6	2	0	-2	2.0	77	65	-12	1.4
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	14	27	13	2.9	8	6	-2	0.8	2	2	0	0.0	24	35	11	2.0
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	74	73	-1	0.1	7	10	3	1.0	2	3	1	0.6	83	86	3	0.3
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	27	27	0	0.0	3	3	0	0.0	1	0	-1	1.4	31	30	-1	0.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	11	8	-3	1.0	1	0	-1	1.4	1	0	-1	1.4	13	8	-5	1.5
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	40	42	2	0.3	8	7	-1	0.4	1	3	2	1.4	49	52	3	0.4
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	68	64	-4	0.5	11	13	2	0.6	5	3	-2	1.0	84	80	-4	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	26	27	1	0.2	3	2	-1	0.6	0	0	0	0.0	29	29	0	0.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	212	211	-1	0.1	46	32	-14	2.2	33	37	4	0.7	291	280	-11	0.7
	Southbound	336	330	-6	0.3	69	51	-18	2.3	36	37	1	0.2	441	418	-23	1.1
Northern	Northbound	673	454	-219	9.2	111	122	11	1.0	118	94	-24	2.3	902	670	-232	8.3
	Southbound	409	407	-2	0.1	77	65	-12	1.4	38	24	-14	2.5	524	496	-28	1.2
West of A12	Eastbound	718	723	5	0.2	195	169	-26	1.9	91	86	-5	0.5	1004	978	-26	0.8
	Westbound	697	668	-29	1.1	150	149	-1	0.1	62	77	15	1.8	909	894	-15	0.5
East of A12	Eastbound	510	660	150	6.2	77	118	41	4.2	45	56	11	1.5	632	834	202	7.5
	Westbound	491	559	68	3.0	106	114	8	0.8	34	44	10	1.6	631	717	86	3.3
Leiston	Inbound	181	191	10	0.7	27	20	-7	1.4	7	5	-2	0.8	215	216	1	0.1
	Outbound	145	141	-4	0.3	23	22	-1	0.2	7	6	-1	0.4	175	169	-6	0.5

Table D.2: Traffic Flow Calibration – All Counts (06:00-07:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	41	42	1	0.2	✓	12	5	-7	2.4	✓	4	2	-2	1.2	✓	57	49	-8	1.1	✓
		SB	ATC_2_SB	83	88	5	0.5	✓	9	7	-2	0.7	✓	4	2	-2	1.2	✓	96	97	1	0.1	✓
3	King Georges Avenue	EB	ATC_3_EB	121	77	-44	4.4	✓	18	0	-18	6.0	✓	1	0	-1	1.4	✓	140	77	-63	6.0	✓
		WB	ATC_3_WB	22	11	-11	2.7	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	27	12	-15	3.4	✓
4	Lovers Lane	NB	ATC_4_NB	11	8	-3	1.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	13	8	-5	1.5	✓
		SB	ATC_4_SB	66	64	-2	0.2	✓	9	1	-8	3.6	✓	2	0	-2	2.0	✓	77	65	-12	1.4	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	74	73	-1	0.1	✓	7	10	3	1.0	✓	2	3	1	0.6	✓	83	86	3	0.3	✓
		SB	ATC_7_SB	68	64	-4	0.5	✓	11	13	2	0.6	✓	5	3	-2	1.0	✓	84	80	-4	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	27	27	0	0.0	✓	3	3	0	0.0	✓	1	0	-1	1.4	✓	31	30	-1	0.2	✓
		SB	ATC_8_SB	26	27	1	0.2	✓	3	2	-1	0.6	✓	0	0	0	0.0	✓	29	29	0	0.0	✓
13	A12 East of Farnham	EB	ATC_13_EB	176	172	-4	0.3	✓	32	34	2	0.3	✓	31	24	-7	1.3	✓	239	230	-9	0.6	✓
		WB	ATC_13_WB	251	249	-2	0.1	✓	55	53	-2	0.3	✓	21	23	2	0.4	✓	327	325	-2	0.1	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	24	33	9	1.7	✓	3	5	2	1.0	✓	1	4	3	1.9	✓	28	42	14	2.4	✓
		WB	ATC_14_WB	49	54	5	0.7	✓	11	14	3	0.8	✓	4	6	2	0.9	✓	64	74	10	1.2	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	20	22	2	0.4	✓	6	5	-1	0.4	✓	4	7	3	1.3	✓	30	34	4	0.7	✓
		SB	ATC_16_SB	35	35	0	0.0	✓	10	4	-6	2.3	✓	7	12	5	1.6	✓	52	51	-1	0.1	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	63	70	7	0.9	✓	13	14	1	0.3	✓	15	13	-2	0.5	✓	91	97	6	0.6	✓
		SB	ATC_17_SB	184	186	2	0.1	✓	34	29	-5	0.9	✓	16	15	-1	0.3	✓	234	230	-4	0.3	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	49	44	-5	0.7	✓	5	8	3	1.2	✓	4	3	-1	0.5	✓	58	55	-3	0.4	✓
		WB	ATC_81_WB	103	101	-2	0.2	✓	16	11	-5	1.4	✓	5	3	-2	1.0	✓	124	115	-9	0.8	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	300	149	-151	10.1	✗	43	46	3	0.4	✓	34	22	-12	2.3	✓	377	217	-160	9.3	✗
		SB	ATC_82-1_SB	290	280	-10	0.6	✓	58	50	-8	1.1	✓	31	20	-11	2.2	✓	379	350	-29	1.5	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	104	201	97	7.9	✓	28	42	14	2.4	✓	24	29	5	1.0	✓	156	272	116	7.9	✗
		WB	ATC_82-2_WB	225	264	39	2.5	✓	44	62	18	2.5	✓	15	26	11	2.4	✓	284	352	68	3.8	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	102	107	5	0.5	✓	13	14	1	0.3	✓	26	19	-7	1.5	✓	141	140	-1	0.1	✓
		WB	ATC_84_WB	179	176	-3	0.2	✓	41	40	-1	0.2	✓	20	23	3	0.6	✓	240	239	-1	0.1	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	18	20	2	0.5	✓	6	7	1	0.4	✓	2	0	-2	2.0	✓	26	27	1	0.2	✓
		WB	ATC_87_WB	23	32	9	1.7	✓	2	6	4	2.0	✓	2	0	-2	2.0	✓	27	38	11	1.9	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	236	240	4	0.3	✓	23	34	11	2.1	✓	10	10	0	0.0	✓	269	284	15	0.9	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	158	175	17	1.3	✓	20	21	1	0.2	✓	6	7	1	0.4	✓	184	203	19	1.4	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	133	132	-1	0.1	✓	20	8	-12	3.2	✓	9	6	-3	1.1	✓	162	146	-16	1.3	✓
		SB	ATC_101-4_SB	109	100	-9	0.9	✓	14	12	-2	0.6	✓	3	5	2	1.0	✓	126	117	-9	0.8	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	386	317	-69	3.7	✓	97	83	-14	1.5	✓	39	46	7	1.1	✓	522	446	-76	3.5	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	247	251	4	0.3	✓	101	85	-16	1.7	✓	68	56	-12	1.5	✓	416	392	-24	1.2	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	131	71	-60	6.0	✓	21	8	-13	3.4	✓	3	3	0	0.0	✓	155	82	-73	6.7	✓
		WB	ATC_102-1_WB	68	24	-44	6.5	✓	16	12	-4	1.1	✓	5	3	-2	1.0	✓	89	39	-50	6.3	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	480	419	-61	2.9	✓	112	111	-1	0.1	✓	44	47	3	0.4	✓	636	577	-59	2.4	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	433	358	-75	3.8	✓	63	75	12	1.4	✓	39	47	8	1.2	✓	535	480	-55	2.4	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	61	67	6	0.8	✓	15	27	12	2.6	✓	7	13	6	1.9	✓	83	107	24	2.5	✓
		WB	ATC_102-4_WB	37	59	22	3.2	✓	10	10	0	0.0	✓	4	7	3	1.3	✓	51	76	25	3.1	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	16	64	48	7.6	✓	5	6	1	0.4	✓	1	0	-1	1.4	✓	22	70	48	7.1	✓
		WB	ATC_103-1_WB	19	0	-19	6.2	✓	7	5	-2	0.8	✓	2	0	-2	2.0	✓	28	5	-23	5.7	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	284	334	50	2.8	✓	65	66	1	0.1	✓	15	19	4	1.0	✓	364	419	55	2.8	✓
		WB	ATC_103-4_WB	166	246	80	5.6	✓	21	31	10	2.0	✓	12	19	7	1.8	✓	199	296	97	6.2	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	328	280	-48	2.8	✓	85	70	-15	1.7	✓	46	48	2	0.3	✓	459	398	-61	2.9	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	469	374	-95	4.6	✓	122	110	-12	1.1	✓	52	51	-1	0.1	✓	643	535	-108	4.5	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	1	1	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	1	1	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	8	8	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	8	8	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	58	54	-4	0.5	✓	5	6	1	0.4	✓	2	2	0	0.0	✓	65	62	-3	0.4	✓
		WB	ATC_105-1_WB	29	30	1	0.2	✓	6	5	-1	0.4	✓	3	2	-1	0.6	✓	38	37	-1	0.2	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	118	115	-3	0.3	✓	27	26	-1	0.2	✓	24	24	0	0.0	✓	169	165	-4	0.3	✓
		SB	ATC_105-2_SB	200	192	-8	0.6	✓	42	42	0	0.0	✓	25	24	-1	0.2	✓	267	258	-9	0.6	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	28	27	-1	0.2	✓	5	9	4	1.5	✓	2	3	1	0.6	✓	35	39	4	0.7	✓
		SB	ATC_202-1_SB	32	34	2	0.3	✓	5	5	0	0.0	✓	4	4	0	0.0	✓	41	43	2	0.3	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	113	116	3	0.3	✓	28	26	-2	0.4	✓	25	23	-2	0.4	✓	166	165	-1	0.1	✓
		WB	ATC_202-2_WB	167	169	2	0.2	✓	44	41	-3	0.5	✓	25	22	-3	0.6	✓	236	232	-4	0.3	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	103	102	-1	0.1	✓	19	22	3	0.7	✓	19	19	0	0.0	✓	141	143	2	0.2	✓
		SB	ATC_202-3_SB	160	162	2	0.2	✓	35	33	-2	0.3	✓	21	19	-2	0.4	✓	216	214	-2	0.1	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	35	34	-1	0.2	✓	1	3	2	1.4	✓	1	2	1	0.8	✓	37	39	2	0.3	✓
		WB	ATC_204_WB	23	31	8	1.5	✓	19	11	-8	2.1	✓	4	2	-2	1.2	✓	46	44	-2	0.3	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	42	40	-2	0.3	✓	7	10	3	1.0	✓	5	6	1	0.4	✓	54	56	2	0.3	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	80	82	2	0.2	✓	10	11	1	0.3	✓	4	3	-1	0.5	✓	94	96	2	0.2	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	34	34	0	0.0	✓	6	11	5	1.7	✓	4	1	-3	1.9	✓	44	46	2	0.3	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	35	35	0	0.0	✓	6	3	-3	1.4	✓	4	4	0	0.0	✓	45	42	-3	0.5	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	49	36	-13	2.0	✓	10	4	-6	2.3	✓	5	5	0	0.0	✓	64	45	-19	2.6	✓
		SB	SCC_A3489_SB	42	28	-14	2.4	✓	9	4	-5	2.0	✓	5	4	-1	0.5	✓	56	36	-20	2.9	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	18	24	6	1.3	✓	4	1	-3	1.9	✓	2	0	-2	2.0	✓	24	25	1	0.2	✓
		SB	SCC_A3527_SB	10	14	4	1.2	✓	2	1	-1	0.8	✓	1	0	-1	1.4	✓	13	15	2	0.5	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	62	59	-3	0.4	✓	13	8	-5	1.5	✓	7	12	5	1.6	✓	82	79	-3	0.3	✓
		SB	SCC_M017_SB	65	67	2	0.2	✓	14	13	-1	0.3	✓	7	6	-1	0.4	✓	86	86	0	0.0	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	14	15	1	0.3	✓	3	5	2	1.0	✓	1	1	0	0.0	✓	18	21	3	0.7	✓
		SB	SCC_M055_SB	16	26	10	2.2	✓	3	4	1	0.5	✓	2	1	-1	0.8	✓	21	31	10	2.0	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	254	257	3	0.2	✓	54	55	1	0.1	✓	27	39	12	2.1	✓	335	351	16	0.9	✓
		SB	SCC_Y151_SB	353	432	79	4.0	✓	75	95	20	2.2	✓	38	80	42	5.5	✓	466	607	141	6.1	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	313	230	-83	5.0	✓	66	35	-31	4.4	✓	34	21	-13	2.5	✓	413	286	-127	6.8	✗
		WB	SCC_Y189_WB	410	398	-12	0.6	✓	87	44	-43	5.3	✓	44	30	-14	2.3	✓	541	472	-69	3.1	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	81	80	-1	0.1	✓	25	20	-5	1.1	✓	2	4	2	1.2	✓	108	104	-4	0.4	✓
		EB	MCC_302_B_EB	85	86	1	0.1	✓	17	12	-5	1.3	✓	10	5	-5	1.8	✓	112	103	-9	0.9	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	35	37	2	0.3	✓	12	5	-7	2.4	✓	7	2	-5	2.4	✓	54	44	-10	1.4	✓
		SB	MCC_302_C_SB	29	31	2	0.4	✓	6	5	-1	0.4	✓	2	2	0	0.0	✓	37	38	1	0.2	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	73	74	1	0.1	✓	13	14	1	0.3	✓	7	7	0	0.0	✓	93	95	2	0.2	✓
		WB	MCC_302_D_WB	71	74	3	0.4	✓	26	22	-4	0.8	✓	3	5	2	1.0	✓	100	101	1	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	57	52	-5	0.7	✓	11	7	-4	1.3	✓	4	2	-2	1.2	✓	72	61	-11	1.3	✓
		SB	MCC_303_A_SB	37	35	-2	0.3	✓	10	6	-4	1.4	✓	5	2	-3	1.6	✓	52	43	-9	1.3	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	14	27	13	2.9	✓	8	6	-2	0.8	✓	2	2	0	0.0	✓	24	35	11	2.0	✓
		WB	MCC_303_B_WB	40	42	2	0.3	✓	8	7	-1	0.4	✓	1	3	2	1.4	✓	49	52	3	0.4	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	48	51	3	0.4	✓	8	8	0	0.0	✓	5	3	-2	1.0	✓	61	62	1	0.1	✓
		NB	MCC_303_C_NB	61	58	-3	0.4	✓	9	8	-1	0.3	✓	3	3	0	0.0	✓	73	69	-4	0.5	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	41	30	-11	1.8	✓	7	4	-3	1.3	✓	0	2	2	2.0	✓	48	36	-12	1.9	✓
		EB	MCC_303_D_EB	22	24	2	0.4	✓	7	5	-2	0.8	✓	2	2	0	0.0	✓	31	31	0	0.0	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	39	30	-9	1.5	✓	10	5	-5	1.8	✓	1	2	1	0.8	✓	50	37	-13	2.0	✓
		NB	MCC_304_A_NB	31	23	-8	1.5	✓	8	4	-4	1.6	✓	4	2	-2	1.2	✓	43	29	-14	2.3	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	34	43	9	1.5	✓	13	9	-4	1.2	✓	2	1	-1	0.8	✓	49	53	4	0.6	✓
		EB	MCC_304_B_EB	102	107	5	0.5	✓	18	11	-7	1.8	✓	0	1	1	1.4	✓	120	119	-1	0.1	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	44	33	-11	1.8	✓	7	1	-6	3.0	✓	4	1	-3	1.9	✓	55	35	-20	3.0	✓
		SB	MCC_304_C_SB	23	16	-7	1.6	✓	6	1	-5	2.7	✓	1	1	0	0.0	✓	30	18	-12	2.4	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	68	64	-4	0.5	✓	9	6	-3	1.1	✓	0	0	0	0.0	✓	77	70	-7	0.8	✓
		WB	MCC_304_D_WB	29	23	-6	1.2	✓	7	5	-2	0.8	✓	2	0	-2	2.0	✓	38	28	-10	1.7	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	357	328	-29	1.6	✓	13	12	-1	0.3	✓	16	21	5	1.2	✓	386	361	-25	1.3	✓
30013377		SB	30013377	168	167	-1	0.1	✓	10	9	-1	0.3	✓	16	21	5	1.2	✓	194	197	3	0.2	✓
30013396	A14 - J56 Through	EB	30013396	635	617	-18	0.7	✓	70	67	-3	0.4	✓	268	248	-20	1.2	✓	973	932	-41	1.3	✓
30013397	A14 - J56 EXIT	EB	30013397	113	104	-9	0.9	✓	10	14	4	1.2	✓	15	20	5	1.2	✓	138	138	0	0.0	✓
30013398	A14 - J57 Through	EB	30013398	588	585	-3	0.1	✓	49	61	12	1.6	✓	255	243	-12	0.8	✓	892	889	-3	0.1	✓
30013399	A14 - J57 EXIT	EB	30013399	239	241	2	0.1	✓	30	26	-4	0.8	✓	40	26	-14	2.4	✓	309	293	-16	0.9	✓
30013402	A14 - J57 Through	WB	30013402	651	594	-57	2.3	✓	48	63	15	2.0	✓	368	311	-57	3.1	✓	1067	968	-99	3.1	✓
30013403	A14 - J57 EXIT	WB	30013403	140	144	4	0.3	✓	6	21	15	4.1	✓	12	3	-9	3.3	✓	158	168	10	0.8	✓
30013406	A14 - J55 Through	WB	30013406	418	360	-58	2.9	✓	48	36	-12	1.9	✓	249	224	-25	1.6	✓	715	620	-95	3.7	✓
30013407	A14 - J55 EXIT	WB	30013407	561	495	-66	2.9	✓	55	58	3	0.4	✓	178	155	-23	1.8	✓	794	708	-86	3.1	✓
30013408	A14 - J55 Through	EB	30013408	316	308	-8	0.5	✓	31	26	-5	0.9	✓	184	156	-28	2.1	✓	531	490	-41	1.8	✓
30013410	A14 - J53 Through	NB	30013410	793	472	-321	12.8	✗	114	61	-53	5.7	✓	374	272	-102	5.7	✗	1281	805	-476	14.7	✗
30013411	A14 - J53 EXIT	NB	30013411	80	45	-35	4.4	✓	11	9	-2	0.6	✓	7	3	-4	1.8	✓	98	57	-41	4.7	✓
30013415	A14 - J51 EXIT	NB	30013415	310	246	-64	3.8	✓	60	63	3	0.4	✓	79	68	-11	1.3	✓	449	377	-72	3.5	✓
30013417	A14 - J51 EXIT	SB	30013417	69	59	-10	1.3	✓	13	15	2	0.5	✓	20	15	-5	1.2	✓	102	89	-13	1.3	✓
30013418	A14 - between J51 and J50	NB	30013418	848	803	-45	1.6	✓	108	113	5	0.5	✓	339	283	-56	3.2	✓	1295	1199	-96	2.7	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	2	105	98%
LGV	114	0	111	100%
HGV	114	0	112	99%
Total Vehs	114	1	103	96%

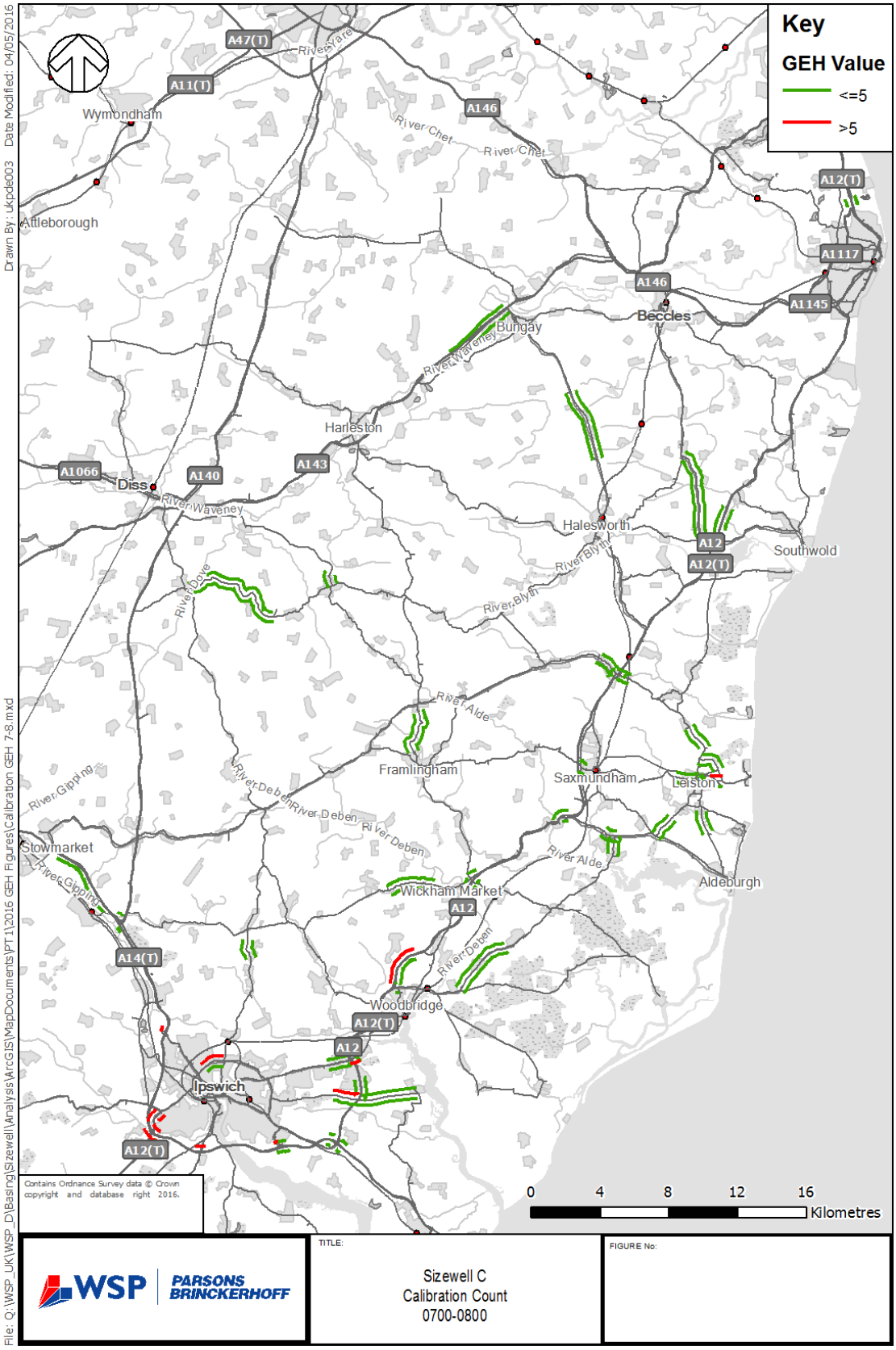


Figure D.2: Traffic Flow Calibration (07:00-08:00)

Table D.3: Traffic Flow Calibration – Screenlines (07:00-08:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	34	45	11	1.8	7	2	-5	2.4	3	0	-3	2.4	44	47	3	0.4
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	91	78	-13	1.4	18	8	-10	2.8	7	7	0	0.0	116	93	-23	2.2
SCC_M017_NB	M017 (A144 Ilketshall)	NB	131	126	-5	0.4	26	19	-7	1.5	10	16	6	1.7	167	161	-6	0.5
ATC_16_NB	A145 North of Blythburgh and B1123	NB	60	61	1	0.1	10	12	2	0.6	6	9	3	1.1	76	82	6	0.7
ATC_17_NB	A12 North of Blythburgh and A1095	NB	188	193	5	0.4	29	34	5	0.9	22	21	-1	0.2	239	248	9	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	28	32	4	0.7	6	3	-3	1.4	2	0	-2	2.0	36	35	-1	0.2
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	112	96	-16	1.6	22	14	-8	1.9	9	7	-2	0.7	143	117	-26	2.3
SCC_M017_SB	M017 (A144 Ilketshall)	SB	198	198	0	0.0	39	38	-1	0.2	16	12	-4	1.1	253	248	-5	0.3
ATC_16_SB	A145 North of Blythburgh and B1123	SB	93	95	2	0.2	31	14	-17	3.6	16	20	4	0.9	140	129	-11	0.9
ATC_17_SB	A12 North of Blythburgh and A1095	SB	365	373	8	0.4	65	54	-11	1.4	23	22	-1	0.2	453	449	-4	0.2
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	485	470	-15	0.7	70	81	11	1.3	104	95	-9	0.9	659	646	-13	0.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	58	59	1	0.1	12	13	1	0.3	5	2	-3	1.6	75	74	-1	0.1
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	630	430	-200	8.7	104	131	27	2.5	57	43	-14	2.0	791	604	-187	7.1
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	167	158	-9	0.7	15	21	6	1.4	6	6	0	0.0	188	185	-3	0.2
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	78	81	3	0.3	15	13	-2	0.5	6	2	-4	2.0	99	96	-3	0.3
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	718	739	21	0.8	104	85	-19	2.0	35	30	-5	0.9	857	854	-3	0.1
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	272	271	-1	0.1	46	35	-11	1.7	9	5	-4	1.5	327	311	-16	0.9
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	123	127	4	0.4	29	27	-2	0.4	11	8	-3	1.0	163	162	-1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	57	67	10	1.3	19	19	0	0.0	7	7	0	0.0	83	93	10	1.1
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	714	870	156	5.5	143	148	5	0.4	29	32	3	0.5	886	1050	164	5.3
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	412	291	-121	6.5	49	26	-23	3.8	13	6	-7	2.3	474	323	-151	7.6
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	669	600	-69	2.7	248	178	-70	4.8	120	105	-15	1.4	1037	883	-154	5.0
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	65	63	-2	0.3	10	19	9	2.4	4	6	2	0.9	79	88	9	1.0
ATC_14_WB	B1078 West of Wickham Market	WB	97	91	-6	0.6	18	23	5	1.1	4	8	4	1.6	119	122	3	0.3
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	505	600	95	4.0	42	58	16	2.3	13	27	14	3.1	560	685	125	5.0
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	215	251	36	2.4	53	37	-16	2.4	7	6	-1	0.4	275	294	19	1.1
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	840	798	-42	1.5	165	124	-41	3.4	78	77	-1	0.1	1083	999	-84	2.6

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	164	163	-1	0.1	33	28	-5	0.9	10	7	-3	1.0	207	198	-9	0.6
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	94	92	-2	0.2	7	7	0	0.0	3	4	1	0.5	104	103	-1	0.1
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	387	506	119	5.6	83	86	3	0.3	57	57	0	0.0	527	649	122	5.0
ATC_103-1_EB	Road to Martlesham	EB	60	236	176	14.5	32	23	-9	1.7	7	0	-7	3.7	99	259	160	12.0
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	121	135	14	1.2	28	44	16	2.7	17	19	2	0.5	166	198	32	2.4
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	299	345	46	2.6	90	100	10	1.0	25	22	-3	0.6	414	467	53	2.5
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	62	63	1	0.1	13	13	0	0.0	4	4	0	0.0	79	80	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	64	71	7	0.9	42	27	-15	2.6	8	4	-4	1.6	114	102	-12	1.2
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	628	681	53	2.1	94	128	34	3.2	23	48	25	4.2	745	857	112	4.0
ATC_103-1_WB	Road to Martlesham	WB	59	0	-59	10.9	24	9	-15	3.7	3	0	-3	2.4	86	9	-77	11.2
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	122	139	17	1.5	23	31	8	1.5	11	14	3	0.8	156	184	28	2.1
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	416	502	86	4.0	61	72	11	1.3	15	17	2	0.5	492	591	99	4.3
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	276	262	-14	0.9	19	4	-15	4.4	6	1	-5	2.7	301	267	-34	2.0
MCC_303_B_EB	B1119 / B1122 / B1069 (B1119 West)	EB	52	73	21	2.7	22	15	-7	1.6	0	4	4	2.8	74	92	18	2.0
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	217	213	-4	0.3	18	28	10	2.1	8	7	-1	0.4	243	248	5	0.3
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	75	78	3	0.3	10	10	0	0.0	1	0	-1	1.4	86	88	2	0.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	26	19	-7	1.5	4	0	-4	2.8	2	1	-1	0.8	32	20	-12	2.4
MCC_303_B_WB	B1119 / B1122 / B1069 (B1119 West)	WB	70	78	8	0.9	16	18	2	0.5	1	5	4	2.3	87	101	14	1.4
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	164	162	-2	0.2	33	32	-1	0.2	8	5	-3	1.2	205	199	-6	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	88	80	-8	0.9	21	12	-9	2.2	3	1	-2	1.4	112	93	-19	1.9

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	504	503	-1	0.0	90	75	-15	1.7	48	53	5	0.7	642	631	-11	0.4
	Southbound	796	794	-2	0.1	163	123	-40	3.3	66	61	-5	0.6	1025	978	-47	1.5
Northern	Northbound	1340	1117	-223	6.4	201	246	45	3.0	172	146	-26	2.1	1713	1509	-204	5.1
	Southbound	1068	1091	23	0.7	165	133	-32	2.6	50	37	-13	2.0	1283	1261	-22	0.6
West of A12	Eastbound	1975	1955	-20	0.5	488	398	-90	4.3	180	158	-22	1.7	2643	2511	-132	2.6
	Westbound	1722	1803	81	1.9	288	261	-27	1.6	106	124	18	1.7	2116	2188	72	1.6
East of A12	Eastbound	1125	1477	352	9.8	273	288	15	0.9	119	109	-10	0.9	1517	1874	357	8.7
	Westbound	1351	1456	105	2.8	257	280	23	1.4	64	87	23	2.6	1672	1823	151	3.6
Leiston	Inbound	620	626	6	0.2	69	57	-12	1.5	15	12	-3	0.8	704	695	-9	0.3
	Outbound	348	339	-9	0.5	74	62	-12	1.5	14	12	-2	0.6	436	413	-23	1.1

Table D.4: Traffic Flow Calibration – All Counts (07:00-08:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	86	89	3	0.3	✓	22	16	-6	1.4	✓	7	3	-4	1.8	✓	115	108	-7	0.7	✓
		SB	ATC_2_SB	275	287	12	0.7	✓	38	34	-4	0.7	✓	9	6	-3	1.1	✓	322	327	5	0.3	✓
3	King Georges Avenue	EB	ATC_3_EB	318	199	-119	7.4	×	43	0	-43	9.3	✓	2	0	-2	2.0	✓	363	199	-164	9.8	×
		WB	ATC_3_WB	49	29	-20	3.2	✓	11	4	-7	2.6	✓	3	0	-3	2.4	✓	63	33	-30	4.3	✓
4	Lovers Lane	NB	ATC_4_NB	26	19	-7	1.5	✓	4	0	-4	2.8	✓	2	1	-1	0.8	✓	32	20	-12	2.4	✓
		SB	ATC_4_SB	276	262	-14	0.9	✓	19	4	-15	4.4	✓	6	1	-5	2.7	✓	301	267	-34	2.0	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	217	213	-4	0.3	✓	18	28	10	2.1	✓	8	7	-1	0.4	✓	243	248	5	0.3	✓
		SB	ATC_7_SB	164	162	-2	0.2	✓	33	32	-1	0.2	✓	8	5	-3	1.2	✓	205	199	-6	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	75	78	3	0.3	✓	10	10	0	0.0	✓	1	0	-1	1.4	✓	86	88	2	0.2	✓
		SB	ATC_8_SB	88	80	-8	0.9	✓	21	12	-9	2.2	✓	3	1	-2	1.4	✓	112	93	-19	1.9	✓
13	A12 East of Farnham	EB	ATC_13_EB	462	452	-10	0.5	✓	92	98	6	0.6	✓	50	45	-5	0.7	✓	604	595	-9	0.4	✓
		WB	ATC_13_WB	574	579	5	0.2	✓	81	80	-1	0.1	✓	28	31	3	0.6	✓	683	690	7	0.3	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	57	67	10	1.3	✓	19	19	0	0.0	✓	7	7	0	0.0	✓	83	93	10	1.1	✓
		WB	ATC_14_WB	97	91	-6	0.6	✓	18	23	5	1.1	✓	4	8	4	1.6	✓	119	122	3	0.3	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	60	61	1	0.1	✓	10	12	2	0.6	✓	6	9	3	1.1	✓	76	82	6	0.7	✓
		SB	ATC_16_SB	93	95	2	0.2	✓	31	14	-17	3.6	✓	16	20	4	0.9	✓	140	129	-11	0.9	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	188	193	5	0.4	✓	29	34	5	0.9	✓	22	21	-1	0.2	✓	239	248	9	0.6	✓
		SB	ATC_17_SB	365	373	8	0.4	✓	65	54	-11	1.4	✓	23	22	-1	0.2	✓	453	449	-4	0.2	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	167	158	-9	0.7	✓	15	21	6	1.4	✓	6	6	0	0.0	✓	188	185	-3	0.2	✓
		WB	ATC_81_WB	272	271	-1	0.1	✓	46	35	-11	1.7	✓	9	5	-4	1.5	✓	327	311	-16	0.9	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	630	430	-200	8.7	×	104	131	27	2.5	✓	57	43	-14	2.0	✓	791	604	-187	7.1	×
		SB	ATC_82-1_SB	718	739	21	0.8	✓	104	85	-19	2.0	✓	35	30	-5	0.9	✓	857	854	-3	0.1	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	387	506	119	5.6	×	83	86	3	0.3	✓	57	57	0	0.0	✓	527	649	122	5.0	×
		WB	ATC_82-2_WB	628	681	53	2.1	✓	94	128	34	3.2	✓	23	48	25	4.2	✓	745	857	112	4.0	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	230	236	6	0.4	✓	34	34	0	0.0	✓	47	36	-11	1.7	✓	311	306	-5	0.3	✓
		WB	ATC_84_WB	289	290	1	0.1	✓	50	56	6	0.8	✓	28	31	3	0.6	✓	367	377	10	0.5	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	33	40	7	1.2	✓	12	16	4	1.1	✓	3	1	-2	1.4	✓	48	57	9	1.2	✓
		WB	ATC_87_WB	86	95	9	0.9	✓	16	18	2	0.5	✓	5	1	-4	2.3	✓	107	114	7	0.7	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	299	345	46	2.6	✓	90	100	10	1.0	✓	25	22	-3	0.6	✓	414	467	53	2.5	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	416	502	86	4.0	✓	61	72	11	1.3	✓	15	17	2	0.5	✓	492	591	99	4.3	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	247	250	3	0.2	✓	55	31	-24	3.7	✓	19	12	-7	1.8	✓	321	293	-28	1.6	✓
		SB	ATC_101-4_SB	392	334	-58	3.0	✓	55	41	-14	2.0	✓	12	10	-2	0.6	✓	459	385	-74	3.6	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	840	798	-42	1.5	✓	165	124	-41	3.4	✓	78	77	-1	0.1	✓	1083	999	-84	2.6	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	669	600	-69	2.7	✓	248	178	-70	4.8	✓	120	105	-15	1.4	✓	1037	883	-154	5.0	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	412	291	-121	6.5	×	49	26	-23	3.8	✓	13	6	-7	2.3	✓	474	323	-151	7.6	×
		WB	ATC_102-1_WB	215	251	36	2.4	✓	53	37	-16	2.4	✓	7	6	-1	0.4	✓	275	294	19	1.1	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1105	1067	-38	1.2	✓	222	191	-31	2.2	✓	78	82	4	0.4	✓	1405	1340	-65	1.8	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1158	986	-172	5.3	✓	150	183	33	2.6	✓	100	102	2	0.2	✓	1408	1271	-137	3.7	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	121	135	14	1.2	✓	28	44	16	2.7	✓	17	19	2	0.5	✓	166	198	32	2.4	✓
		WB	ATC_102-4_WB	122	139	17	1.5	✓	23	31	8	1.5	✓	11	14	3	0.8	✓	156	184	28	2.1	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	60	236	176	14.5	×	32	23	-9	1.7	✓	7	0	-7	3.7	✓	99	259	160	12.0	×
		WB	ATC_103-1_WB	59	0	-59	10.9	✓	24	9	-15	3.7	✓	3	0	-3	2.4	✓	86	9	-77	11.2	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	714	870	156	5.5	×	143	148	5	0.4	✓	29	32	3	0.5	✓	886	1050	164	5.3	×
		WB	ATC_103-4_WB	505	600	95	4.0	✓	42	58	16	2.3	✓	13	27	14	3.1	✓	560	685	125	5.0	×
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	805	705	-100	3.6	✓	220	173	-47	3.4	✓	109	105	-4	0.4	✓	1134	983	-151	4.6	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1104	981	-123	3.8	✓	252	189	-63	4.2	✓	95	91	-4	0.4	✓	1451	1261	-190	5.2	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	60	60	0	0.0	✓	0	0	0	0.0	✓	1	0	-1	1.4	✓	61	60	-1	0.1	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	164	163	-1	0.1	✓	33	28	-5	0.9	✓	10	7	-3	1.0	✓	207	198	-9	0.6	✓
		WB	ATC_105-1_WB	62	63	1	0.1	✓	13	13	0	0.0	✓	4	4	0	0.0	✓	79	80	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	303	299	-4	0.2	✓	73	70	-3	0.4	✓	39	40	1	0.2	✓	415	409	-6	0.3	✓
		SB	ATC_105-2_SB	420	417	-3	0.1	✓	90	89	-1	0.1	✓	43	40	-3	0.5	✓	553	546	-7	0.3	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	65	63	-2	0.3	✓	10	19	9	2.4	✓	4	6	2	0.9	✓	79	88	9	1.0	✓
		SB	ATC_202-1_SB	123	127	4	0.4	✓	29	27	-2	0.4	✓	11	8	-3	1.0	✓	163	162	-1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	347	339	-8	0.4	✓	85	75	-10	1.1	✓	39	38	-1	0.2	✓	471	452	-19	0.9	✓
		WB	ATC_202-2_WB	361	356	-5	0.3	✓	81	79	-2	0.2	✓	36	34	-2	0.3	✓	478	469	-9	0.4	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	229	237	8	0.5	✓	47	52	5	0.7	✓	29	30	1	0.2	✓	305	319	14	0.8	✓
		SB	ATC_202-3_SB	302	319	17	1.0	✓	63	64	1	0.1	✓	33	29	-4	0.7	✓	398	412	14	0.7	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	94	92	-2	0.2	✓	7	7	0	0.0	✓	3	4	1	0.5	✓	104	103	-1	0.1	✓
		WB	ATC_204_WB	64	71	7	0.9	✓	42	27	-15	2.6	✓	8	4	-4	1.6	✓	114	102	-12	1.2	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	82	70	-12	1.4	✓	11	16	5	1.4	✓	5	7	2	0.8	✓	98	93	-5	0.5	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	216	226	10	0.7	✓	28	27	-1	0.2	✓	6	5	-1	0.4	✓	250	258	8	0.5	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	112	108	-4	0.4	✓	28	33	5	0.9	✓	8	4	-4	1.6	✓	148	145	-3	0.2	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	61	66	5	0.6	✓	18	13	-5	1.3	✓	5	7	2	0.8	✓	84	86	2	0.2	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	91	78	-13	1.4	✓	18	8	-10	2.8	✓	7	7	0	0.0	✓	116	93	-23	2.2	✓
		SB	SCC_A3489_SB	112	96	-16	1.6	✓	22	14	-8	1.9	✓	9	7	-2	0.7	✓	143	117	-26	2.3	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	34	45	11	1.8	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	44	47	3	0.4	✓
		SB	SCC_A3527_SB	28	32	4	0.7	✓	6	3	-3	1.4	✓	2	0	-2	2.0	✓	36	35	-1	0.2	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	131	126	-5	0.4	✓	26	19	-7	1.5	✓	10	16	6	1.7	✓	167	161	-6	0.5	✓
		SB	SCC_M017_SB	198	198	0	0.0	✓	39	38	-1	0.2	✓	16	12	-4	1.1	✓	253	248	-5	0.3	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	58	59	1	0.1	✓	12	13	1	0.3	✓	5	2	-3	1.6	✓	75	74	-1	0.1	✓
		SB	SCC_M055_SB	78	81	3	0.3	✓	15	13	-2	0.5	✓	6	2	-4	2.0	✓	99	96	-3	0.3	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	494	952	458	17.0	✗	98	100	2	0.2	✓	39	50	11	1.6	✓	631	1102	471	16.0	✗
		SB	SCC_Y151_SB	498	676	178	7.3	✗	99	179	80	6.8	✓	40	96	56	6.8	✓	637	951	314	11.1	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	653	526	-127	5.2	✗	130	67	-63	6.3	✓	52	28	-24	3.8	✓	835	621	-214	7.9	✗
		WB	SCC_Y189_WB	726	680	-46	1.7	✓	144	78	-66	6.3	✓	58	42	-16	2.3	✓	928	800	-128	4.4	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	239	236	-3	0.2	✓	51	41	-10	1.5	✓	5	5	0	0.0	✓	295	282	-13	0.8	✓
		EB	MCC_302_B_EB	247	246	-1	0.1	✓	70	52	-18	2.3	✓	20	13	-7	1.7	✓	337	311	-26	1.4	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	109	111	2	0.2	✓	29	17	-12	2.5	✓	6	2	-4	2.0	✓	144	130	-14	1.2	✓
		SB	MCC_302_C_SB	110	105	-5	0.5	✓	43	32	-11	1.8	✓	8	5	-3	1.2	✓	161	142	-19	1.5	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	211	214	3	0.2	✓	72	65	-7	0.8	✓	19	17	-2	0.5	✓	302	296	-6	0.3	✓
		WB	MCC_302_D_WB	213	211	-2	0.1	✓	41	38	-3	0.5	✓	3	6	3	1.4	✓	257	255	-2	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	121	112	-9	0.8	✓	42	29	-13	2.2	✓	5	2	-3	1.6	✓	168	143	-25	2.0	✓
		SB	MCC_303_A_SB	102	104	2	0.2	✓	35	29	-6	1.1	✓	14	7	-7	2.2	✓	151	140	-11	0.9	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	52	73	21	2.7	✓	22	15	-7	1.6	✓	0	4	4	2.8	✓	74	92	18	2.0	✓
		WB	MCC_303_B_WB	70	78	8	0.9	✓	16	18	2	0.5	✓	1	5	4	2.3	✓	87	101	14	1.4	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	102	105	3	0.3	✓	39	36	-3	0.5	✓	15	8	-7	2.1	✓	156	149	-7	0.6	✓
		NB	MCC_303_C_NB	139	139	0	0.0	✓	41	31	-10	1.7	✓	3	5	2	1.0	✓	183	175	-8	0.6	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	109	90	-19	1.9	✓	17	12	-5	1.3	✓	0	6	6	3.5	✓	126	108	-18	1.7	✓
		EB	MCC_303_D_EB	73	59	-14	1.7	✓	28	15	-13	2.8	✓	2	3	1	0.6	✓	103	77	-26	2.7	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	66	66	0	0.0	✓	9	9	0	0.0	✓	1	3	2	1.4	✓	76	78	2	0.2	✓
		NB	MCC_304_A_NB	76	61	-15	1.8	✓	26	14	-12	2.7	✓	14	6	-8	2.5	✓	116	81	-35	3.5	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	65	82	17	2.0	✓	29	25	-4	0.8	✓	1	2	1	0.8	✓	95	109	14	1.4	✓
		EB	MCC_304_B_EB	260	273	13	0.8	✓	26	23	-3	0.6	✓	0	2	2	2.0	✓	286	298	12	0.7	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	111	93	-18	1.8	✓	33	11	-22	4.7	✓	14	3	-11	3.8	✓	158	107	-51	4.4	✓
		SB	MCC_304_C_SB	40	34	-6	1.0	✓	16	4	-12	3.8	✓	0	1	1	1.4	✓	56	39	-17	2.5	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	182	172	-10	0.8	✓	16	10	-6	1.7	✓	0	0	0	0.0	✓	198	182	-16	1.2	✓
		WB	MCC_304_D_WB	48	45	-3	0.4	✓	19	14	-5	1.2	✓	2	0	-2	2.0	✓	69	59	-10	1.3	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	757	660	-97	3.6	✓	36	30	-6	1.0	✓	29	32	3	0.5	✓	822	722	-100	3.6	✓
30013377		SB	30013377	475	470	-5	0.2	✓	29	25	-4	0.8	✓	30	33	3	0.5	✓	534	528	-6	0.3	✓
30013396	A14 - J56 Through	EB	30013396	1776	1506	-270	6.7	×	165	149	-16	1.3	✓	342	320	-22	1.2	✓	2283	1975	-308	6.7	✓
30013397	A14 - J56 EXIT	EB	30013397	383	171	-212	12.7	×	26	34	8	1.5	✓	40	40	0	0.0	✓	449	245	-204	11.0	×
30013398	A14 - J57 Through	EB	30013398	1229	1165	-64	1.8	✓	116	138	22	2.0	✓	297	293	-4	0.2	✓	1642	1596	-46	1.1	✓
30013399	A14 - J57 EXIT	EB	30013399	870	748	-122	4.3	✓	87	65	-22	2.5	✓	137	84	-53	5.0	✓	1094	897	-197	6.2	×
30013402	A14 - J57 Through	WB	30013402	1411	1306	-105	2.8	✓	92	107	15	1.5	✓	332	314	-18	1.0	✓	1835	1727	-108	2.6	✓
30013403	A14 - J57 EXIT	WB	30013403	328	337	9	0.5	✓	13	31	18	3.8	✓	25	13	-12	2.8	✓	366	381	15	0.8	✓
30013406	A14 - J55 Through	WB	30013406	958	810	-148	5.0	✓	90	70	-20	2.2	✓	244	222	-22	1.4	✓	1292	1102	-190	5.5	✓
30013407	A14 - J55 EXIT	WB	30013407	950	963	13	0.4	✓	75	77	2	0.2	✓	182	165	-17	1.3	✓	1207	1205	-2	0.1	✓
30013408	A14 - J55 Through	EB	30013408	1090	913	-177	5.6	×	93	69	-24	2.7	✓	237	182	-55	3.8	✓	1420	1164	-256	7.1	×
30013410	A14 - J53 Through	NB	30013410	1404	1083	-321	9.1	×	145	115	-30	2.6	✓	386	288	-98	5.3	✓	1935	1486	-449	10.9	×
30013411	A14 - J53 EXIT	NB	30013411	299	147	-152	10.2	×	27	19	-8	1.7	✓	15	4	-11	3.6	✓	341	170	-171	10.7	×
30013415	A14 - J51 EXIT	NB	30013415	485	470	-15	0.7	✓	70	81	11	1.3	✓	104	95	-9	0.9	✓	659	646	-13	0.5	✓
30013417	A14 - J51 EXIT	SB	30013417	181	169	-12	0.9	✓	26	33	7	1.3	✓	32	26	-6	1.1	✓	239	228	-11	0.7	✓
30013418	A14 - between J51 and J50	NB	30013418	1542	1494	-48	1.2	✓	144	168	24	1.9	✓	340	300	-40	2.2	✓	2026	1962	-64	1.4	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	5	98	88%
LGV	114	0	110	100%
HGV	114	0	111	100%
Total Vehs	114	7	95	87%

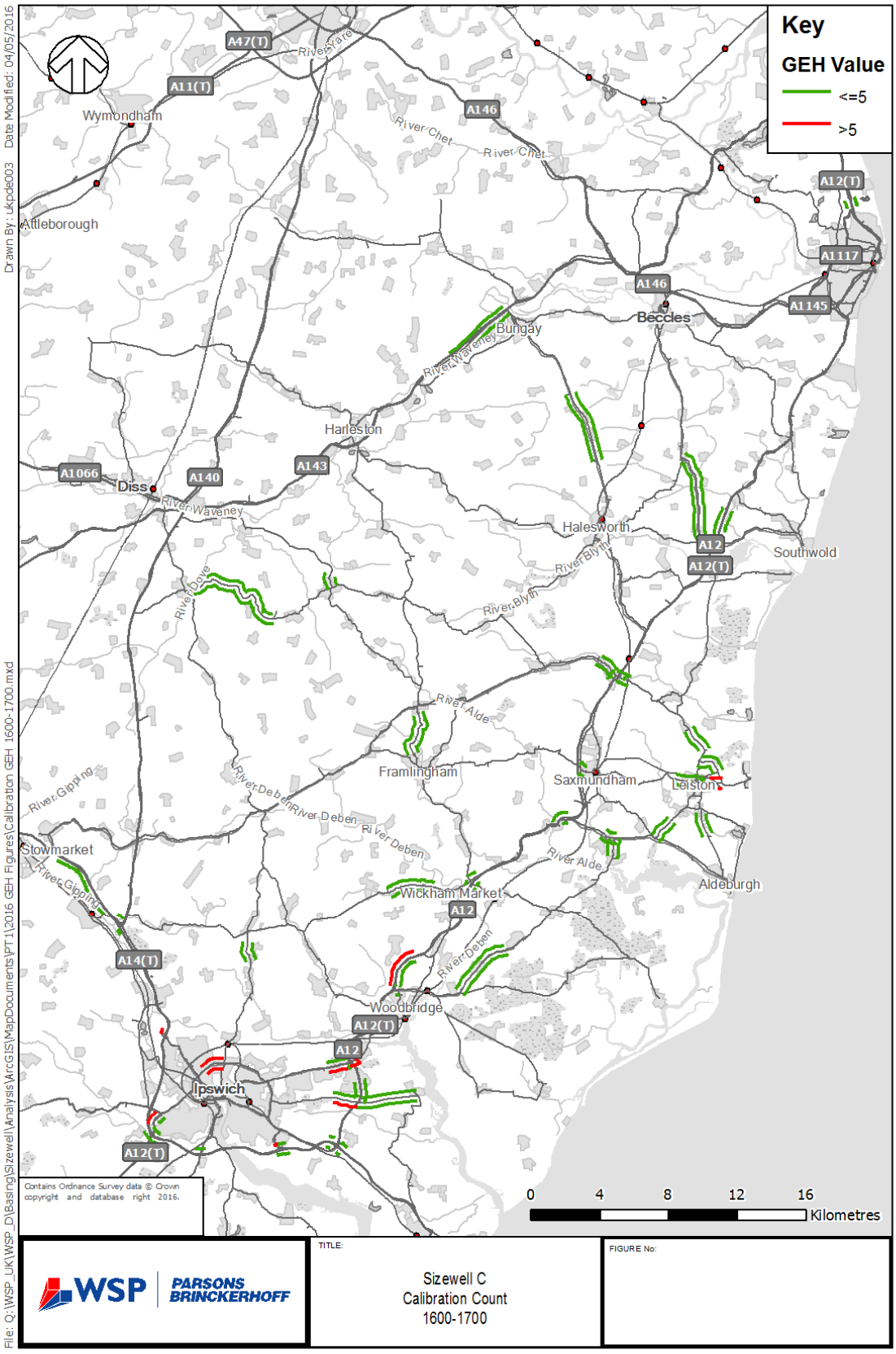


Figure D.3: Traffic Flow Calibration (16:00-17:00)

Table D.5: Traffic Flow Calibration – Screenlines (16:00-17:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	48	49	1	0.1	7	2	-5	2.4	3	0	-3	2.4	58	51	-7	0.9
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	145	132	-13	1.1	21	11	-10	2.5	8	5	-3	1.2	174	148	-26	2.0
SCC_M017_NB	M017 (A144 Ilketshall)	NB	241	239	-2	0.1	35	34	-1	0.2	13	15	2	0.5	289	288	-1	0.1
ATC_16_NB	A145 North of Blythburgh and B1123	NB	136	134	-2	0.2	22	9	-13	3.3	12	9	-3	0.9	170	152	-18	1.4
ATC_17_NB	A12 North of Blythburgh and A1095	NB	436	440	4	0.2	43	38	-5	0.8	23	21	-2	0.4	502	499	-3	0.1
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	46	51	5	0.7	7	2	-5	2.4	2	0	-2	2.0	55	53	-2	0.3
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	119	109	-10	0.9	17	9	-8	2.2	6	5	-1	0.4	142	123	-19	1.7
SCC_M017_SB	M017 (A144 Ilketshall)	SB	165	160	-5	0.4	24	15	-9	2.0	9	8	-1	0.3	198	183	-15	1.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	75	76	1	0.1	24	11	-13	3.1	10	11	1	0.3	109	98	-11	1.1
ATC_17_SB	A12 North of Blythburgh and A1095	SB	252	256	4	0.3	29	38	9	1.6	13	14	1	0.3	294	308	14	0.8
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	720	632	-88	3.4	70	74	4	0.5	104	91	-13	1.3	894	797	-97	3.3
SCC_M055_NB	M055 (B1077 Swilland)	NB	53	91	38	4.5	8	9	1	0.3	3	1	-2	1.4	64	101	37	4.1
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	1082	818	-264	8.6	78	91	13	1.4	60	30	-30	4.5	1220	939	-281	8.6
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	286	271	-15	0.9	26	17	-9	1.9	11	8	-3	1.0	323	296	-27	1.5
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	63	69	6	0.7	9	9	0	0.0	3	2	-1	0.6	75	80	5	0.6
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	835	768	-67	2.4	115	103	-12	1.1	35	39	4	0.7	985	910	-75	2.4
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	197	200	3	0.2	21	19	-2	0.4	11	12	1	0.3	229	231	2	0.1
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	119	118	-1	0.1	24	28	4	0.8	12	9	-3	0.9	155	155	0	0.0
ATC_14_EB	B1078 West of Wickham Market	EB	125	122	-3	0.3	15	18	3	0.7	6	5	-1	0.4	146	145	-1	0.1
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	779	733	-46	1.7	94	102	8	0.8	23	23	0	0.0	896	858	-38	1.3
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	382	409	27	1.4	48	25	-23	3.8	11	6	-5	1.7	441	440	-1	0.0
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	1121	1061	-60	1.8	181	121	-60	4.9	70	64	-6	0.7	1372	1246	-126	3.5
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	147	148	1	0.1	34	34	0	0.0	7	4	-3	1.3	188	186	-2	0.1
ATC_14_WB	B1078 West of Wickham Market	WB	102	101	-1	0.1	15	26	11	2.4	7	8	1	0.4	124	135	11	1.0
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	882	1090	208	6.6	80	92	12	1.3	22	20	-2	0.4	984	1202	218	6.6
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	557	444	-113	5.1	135	91	-44	4.1	22	16	-6	1.4	714	551	-163	6.5
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	957	942	-15	0.5	196	142	-54	4.2	81	80	-1	0.1	1234	1164	-70	2.0

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	98	98	0	0.0	14	14	0	0.0	8	4	-4	1.6	120	116	-4	0.4
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	190	183	-7	0.5	16	11	-5	1.4	2	2	0	0.0	208	196	-12	0.8
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	621	637	16	0.6	47	65	18	2.4	30	43	13	2.2	698	745	47	1.7
ATC_103-1_EB	Road to Martlesham	EB	111	111	0	0.0	34	28	-6	1.1	5	0	-5	3.2	150	139	-11	0.9
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	189	197	8	0.6	41	52	11	1.6	17	12	-5	1.3	247	261	14	0.9
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	443	485	42	1.9	66	82	16	1.9	12	20	8	2.0	521	587	66	2.8
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	168	169	1	0.1	24	26	2	0.4	10	5	-5	1.8	202	200	-2	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	146	146	0	0.0	54	28	-26	4.1	9	6	-3	1.1	209	180	-29	2.1
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	690	771	81	3.0	79	109	30	3.1	34	70	36	5.0	803	950	147	5.0
ATC_103-1_WB	Road to Martlesham	WB	156	103	-53	4.7	54	30	-24	3.7	8	0	-8	4.0	218	133	-85	6.4
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	198	209	11	0.8	42	67	25	3.4	19	19	0	0.0	259	295	36	2.2
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	444	507	63	2.9	82	106	24	2.5	26	23	-3	0.6	552	636	84	3.4
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	32	30	-2	0.4	4	0	-4	2.8	4	1	-3	1.9	40	31	-9	1.5
MCC_303_B_EB	B1119 / B1122 / B1069 (B1119 West)	EB	172	169	-3	0.2	25	19	-6	1.3	0	4	4	2.8	197	192	-5	0.4
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	208	206	-2	0.1	21	25	4	0.8	7	4	-3	1.3	236	235	-1	0.1
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	123	119	-4	0.4	22	10	-12	3.0	3	1	-2	1.4	148	130	-18	1.5
Outbound																		
ATC_4_NB	Lovers Lane	NB	196	185	-11	0.8	16	3	-13	4.2	4	1	-3	1.9	216	189	-27	1.9
MCC_303_B_WB	B1119 / B1122 / B1069 (B1119 West)	WB	148	155	7	0.6	25	19	-6	1.3	0	6	6	3.5	173	180	7	0.5
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	191	197	6	0.4	25	31	6	1.1	9	5	-4	1.5	225	233	8	0.5
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	122	117	-5	0.5	13	7	-6	1.9	2	0	-2	2.0	137	124	-13	1.1

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	1006	994	-12	0.4	128	94	-34	3.2	59	50	-9	1.2	1193	1138	-55	1.6
	Southbound	657	652	-5	0.2	101	75	-26	2.8	40	38	-2	0.3	798	765	-33	1.2
Northern	Northbound	2141	1812	-329	7.4	182	191	9	0.7	178	130	-48	3.9	2501	2133	-368	7.6
	Southbound	1095	1037	-58	1.8	145	131	-14	1.2	49	53	4	0.6	1289	1221	-68	1.9
West of A12	Eastbound	2526	2443	-83	1.7	362	294	-68	3.8	122	107	-15	1.4	3010	2844	-166	3.1
	Westbound	2645	2725	80	1.5	460	385	-75	3.6	139	128	-11	1.0	3244	3238	-6	0.1
East of A12	Eastbound	1652	1711	59	1.4	218	252	34	2.2	74	81	7	0.8	1944	2044	100	2.2
	Westbound	1802	1905	103	2.4	335	366	31	1.7	106	123	17	1.6	2243	2394	151	3.1
Leiston	Inbound	535	524	-11	0.5	72	54	-18	2.3	14	10	-4	1.2	621	588	-33	1.3
	Outbound	657	654	-3	0.1	79	60	-19	2.3	15	12	-3	0.8	751	726	-25	0.9

Table D.6: Traffic Flow Calibration – All Counts (16:00-17:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	267	279	12	0.7	✓	51	28	-23	3.7	✓	12	4	-8	2.8	✓	330	311	-19	1.1	✓
		SB	ATC_2_SB	142	140	-2	0.2	✓	27	17	-10	2.1	✓	7	3	-4	1.8	✓	176	160	-16	1.2	✓
3	King Georges Avenue	EB	ATC_3_EB	113	71	-42	4.4	✓	15	2	-13	4.5	✓	3	0	-3	2.4	✓	131	73	-58	5.7	✓
		WB	ATC_3_WB	236	153	-83	6.0	✓	21	0	-21	6.5	✓	3	0	-3	2.4	✓	260	153	-107	7.4	✗
4	Lovers Lane	NB	ATC_4_NB	196	185	-11	0.8	✓	16	3	-13	4.2	✓	4	1	-3	1.9	✓	216	189	-27	1.9	✓
		SB	ATC_4_SB	32	30	-2	0.4	✓	4	0	-4	2.8	✓	4	1	-3	1.9	✓	40	31	-9	1.5	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	208	206	-2	0.1	✓	21	25	4	0.8	✓	7	4	-3	1.3	✓	236	235	-1	0.1	✓
		SB	ATC_7_SB	191	197	6	0.4	✓	25	31	6	1.1	✓	9	5	-4	1.5	✓	225	233	8	0.5	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	123	119	-4	0.4	✓	22	10	-12	3.0	✓	3	1	-2	1.4	✓	148	130	-18	1.5	✓
		SB	ATC_8_SB	122	117	-5	0.5	✓	13	7	-6	1.9	✓	2	0	-2	2.0	✓	137	124	-13	1.1	✓
13	A12 East of Farnham	EB	ATC_13_EB	800	758	-42	1.5	✓	83	74	-9	1.0	✓	32	30	-2	0.4	✓	915	862	-53	1.8	✓
		WB	ATC_13_WB	701	692	-9	0.3	✓	83	91	8	0.9	✓	37	38	1	0.2	✓	821	821	0	0.0	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	125	122	-3	0.3	✓	15	18	3	0.7	✓	6	5	-1	0.4	✓	146	145	-1	0.1	✓
		WB	ATC_14_WB	102	101	-1	0.1	✓	15	26	11	2.4	✓	7	8	1	0.4	✓	124	135	11	1.0	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	136	134	-2	0.2	✓	22	9	-13	3.3	✓	12	9	-3	0.9	✓	170	152	-18	1.4	✓
		SB	ATC_16_SB	75	76	1	0.1	✓	24	11	-13	3.1	✓	10	11	1	0.3	✓	109	98	-11	1.1	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	436	440	4	0.2	✓	43	38	-5	0.8	✓	23	21	-2	0.4	✓	502	499	-3	0.1	✓
		SB	ATC_17_SB	252	256	4	0.3	✓	29	38	9	1.6	✓	13	14	1	0.3	✓	294	308	14	0.8	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	286	271	-15	0.9	✓	26	17	-9	1.9	✓	11	8	-3	1.0	✓	323	296	-27	1.5	✓
		WB	ATC_81_WB	197	200	3	0.2	✓	21	19	-2	0.4	✓	11	12	1	0.3	✓	229	231	2	0.1	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	1082	818	-264	8.6	✗	78	91	13	1.4	✓	60	30	-30	4.5	✓	1220	939	-281	8.6	✗
		SB	ATC_82-1_SB	835	768	-67	2.4	✓	115	103	-12	1.1	✓	35	39	4	0.7	✓	985	910	-75	2.4	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	621	637	16	0.6	✓	47	65	18	2.4	✓	30	43	13	2.2	✓	698	745	47	1.7	✓
		WB	ATC_82-2_WB	690	771	81	3.0	✓	79	109	30	3.1	✓	34	70	36	5.0	✓	803	950	147	5.0	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	409	413	4	0.2	✓	35	40	5	0.8	✓	20	12	-8	2.0	✓	464	465	1	0.0	✓
		WB	ATC_84_WB	303	325	22	1.2	✓	60	62	2	0.3	✓	33	33	0	0.0	✓	396	420	24	1.2	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	124	126	2	0.2	✓	14	12	-2	0.6	✓	5	1	-4	2.3	✓	143	139	-4	0.3	✓
		WB	ATC_87_WB	61	65	4	0.5	✓	12	13	1	0.3	✓	2	0	-2	2.0	✓	75	78	3	0.3	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	443	485	42	1.9	✓	66	82	16	1.9	✓	12	20	8	2.0	✓	521	587	66	2.8	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	444	507	63	2.9	✓	82	106	24	2.5	✓	26	23	-3	0.6	✓	552	636	84	3.4	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	437	381	-56	2.8	✓	40	16	-24	4.5	✓	24	13	-11	2.6	✓	501	410	-91	4.3	✓
		SB	ATC_101-4_SB	477	423	-54	2.5	✓	77	44	-33	4.2	✓	18	15	-3	0.7	✓	572	482	-90	3.9	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	957	942	-15	0.5	✓	196	142	-54	4.2	✓	81	80	-1	0.1	✓	1234	1164	-70	2.0	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	1121	1061	-60	1.8	✓	181	121	-60	4.9	✓	70	64	-6	0.7	✓	1372	1246	-126	3.5	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	382	409	27	1.4	✓	48	25	-23	3.8	✓	11	6	-5	1.7	✓	441	440	-1	0.0	✓
		WB	ATC_102-1_WB	557	444	-113	5.1	✗	135	91	-44	4.1	✓	22	16	-6	1.4	✓	714	551	-163	6.5	✗
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1529	1436	-93	2.4	✓	257	215	-42	2.7	✓	95	87	-8	0.8	✓	1881	1738	-143	3.4	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1541	1513	-28	0.7	✓	118	138	20	1.8	✓	86	70	-16	1.8	✓	1745	1721	-24	0.6	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	189	197	8	0.6	✓	41	52	11	1.6	✓	17	12	-5	1.3	✓	247	261	14	0.9	✓
		WB	ATC_102-4_WB	198	209	11	0.8	✓	42	67	25	3.4	✓	19	19	0	0.0	✓	259	295	36	2.2	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	111	111	0	0.0	✓	34	28	-6	1.1	✓	5	0	-5	3.2	✓	150	139	-11	0.9	✓
		WB	ATC_103-1_WB	156	103	-53	4.7	✓	54	30	-24	3.7	✓	8	0	-8	4.0	✓	218	133	-85	6.4	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	779	733	-46	1.7	✓	94	102	8	0.8	✓	23	23	0	0.0	✓	896	858	-38	1.3	✓
		WB	ATC_103-4_WB	882	1090	208	6.6	✗	80	92	12	1.3	✓	22	20	-2	0.4	✓	984	1202	218	6.6	✗
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1372	1413	41	1.1	✓	235	137	-98	7.2	✓	74	70	-4	0.5	✓	1681	1620	-61	1.5	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1395	1157	-238	6.7	✗	239	201	-38	2.6	✓	112	93	-19	1.9	✓	1746	1451	-295	7.4	✗
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	38	38	0	0.0	✓	0	0	0	0.0	✓	1	0	-1	1.4	✓	39	38	-1	0.2	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	98	98	0	0.0	✓	14	14	0	0.0	✓	8	4	-4	1.6	✓	120	116	-4	0.4	✓
		WB	ATC_105-1_WB	168	169	1	0.1	✓	24	26	2	0.4	✓	10	5	-5	1.8	✓	202	200	-2	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	663	623	-40	1.6	✓	86	81	-5	0.5	✓	36	34	-2	0.3	✓	785	738	-47	1.7	✓
		SB	ATC_105-2_SB	487	463	-24	1.1	✓	78	70	-8	0.9	✓	22	24	2	0.4	✓	587	557	-30	1.3	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	147	148	1	0.1	✓	34	34	0	0.0	✓	7	4	-3	1.3	✓	188	186	-2	0.1	✓
		SB	ATC_202-1_SB	119	118	-1	0.1	✓	24	28	4	0.8	✓	12	9	-3	0.9	✓	155	155	0	0.0	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	594	566	-28	1.2	✓	95	79	-16	1.7	✓	38	31	-7	1.2	✓	727	676	-51	1.9	✓
		WB	ATC_202-2_WB	487	477	-10	0.5	✓	97	79	-18	1.9	✓	25	22	-3	0.6	✓	609	578	-31	1.3	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	509	502	-7	0.3	✓	60	55	-5	0.7	✓	27	23	-4	0.8	✓	596	580	-16	0.7	✓
		SB	ATC_202-3_SB	374	382	8	0.4	✓	52	50	-2	0.3	✓	18	19	1	0.2	✓	444	451	7	0.3	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	190	183	-7	0.5	✓	16	11	-5	1.4	✓	2	2	0	0.0	✓	208	196	-12	0.8	✓
		WB	ATC_204_WB	146	146	0	0.0	✓	54	28	-26	4.1	✓	9	6	-3	1.1	✓	209	180	-29	2.1	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	114	109	-5	0.5	✓	25	20	-5	1.1	✓	7	6	-1	0.4	✓	146	135	-11	0.9	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	181	187	6	0.4	✓	26	27	1	0.2	✓	6	5	-1	0.4	✓	213	219	6	0.4	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	227	221	-6	0.4	✓	30	23	-7	1.4	✓	10	4	-6	2.3	✓	267	248	-19	1.2	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	132	121	-11	1.0	✓	15	11	-4	1.1	✓	6	4	-2	0.9	✓	153	136	-17	1.4	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	145	132	-13	1.1	✓	21	11	-10	2.5	✓	8	5	-3	1.2	✓	174	148	-26	2.0	✓
		SB	SCC_A3489_SB	119	109	-10	0.9	✓	17	9	-8	2.2	✓	6	5	-1	0.4	✓	142	123	-19	1.7	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	48	49	1	0.1	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	58	51	-7	0.9	✓
		SB	SCC_A3527_SB	46	51	5	0.7	✓	7	2	-5	2.4	✓	2	0	-2	2.0	✓	55	53	-2	0.3	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	241	239	-2	0.1	✓	35	34	-1	0.2	✓	13	15	2	0.5	✓	289	288	-1	0.1	✓
		SB	SCC_M017_SB	165	160	-5	0.4	✓	24	15	-9	2.0	✓	9	8	-1	0.3	✓	198	183	-15	1.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	53	91	38	4.5	✓	8	9	1	0.3	✓	3	1	-2	1.4	✓	64	101	37	4.1	✓
		SB	SCC_M055_SB	63	69	6	0.7	✓	9	9	0	0.0	✓	3	2	-1	0.6	✓	75	80	5	0.6	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	572	741	169	6.6	✗	84	75	-9	1.0	✓	30	30	0	0.0	✓	686	846	160	5.8	✗
		SB	SCC_Y151_SB	662	607	-55	2.2	✓	97	164	67	5.9	✓	35	65	30	4.2	✓	794	836	42	1.5	✓
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	668	431	-237	10.1	✗	97	61	-36	4.1	✓	35	19	-16	3.1	✓	800	511	-289	11.3	✗
		WB	SCC_Y189_WB	797	499	-298	11.7	✗	116	83	-33	3.3	✓	42	32	-10	1.6	✓	955	614	-341	12.2	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	327	319	-8	0.4	✓	66	44	-22	3.0	✓	6	7	1	0.4	✓	399	370	-29	1.5	✓
		EB	MCC_302_B_EB	334	314	-20	1.1	✓	53	35	-18	2.7	✓	4	4	0	0.0	✓	391	353	-38	2.0	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	170	167	-3	0.2	✓	51	27	-24	3.8	✓	5	2	-3	1.6	✓	226	196	-30	2.1	✓
		SB	MCC_302_C_SB	205	197	-8	0.6	✓	28	16	-12	2.6	✓	2	1	-1	0.8	✓	235	214	-21	1.4	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	303	291	-12	0.7	✓	32	34	2	0.3	✓	2	5	3	1.6	✓	337	330	-7	0.4	✓
		WB	MCC_302_D_WB	267	266	-1	0.1	✓	59	54	-5	0.7	✓	6	8	2	0.8	✓	332	328	-4	0.2	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	239	271	32	2.0	✓	37	34	-3	0.5	✓	4	3	-1	0.5	✓	280	308	28	1.6	✓
		SB	MCC_303_A_SB	238	222	-16	1.1	✓	46	27	-19	3.1	✓	4	2	-2	1.2	✓	288	251	-37	2.3	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	172	169	-3	0.2	✓	25	19	-6	1.3	✓	0	4	4	2.8	✓	197	192	-5	0.4	✓
		WB	MCC_303_B_WB	148	155	7	0.6	✓	25	19	-6	1.3	✓	0	6	6	3.5	✓	173	180	7	0.5	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	240	237	-3	0.2	✓	39	29	-10	1.7	✓	3	4	1	0.5	✓	282	270	-12	0.7	✓
		NB	MCC_303_C_NB	256	250	-6	0.4	✓	41	32	-9	1.5	✓	7	5	-2	0.8	✓	304	287	-17	1.0	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	195	129	-66	5.2	✓	34	7	-27	6.0	✓	6	4	-2	0.9	✓	235	140	-95	6.9	✓
		EB	MCC_303_D_EB	204	179	-25	1.8	✓	23	10	-13	3.2	✓	2	2	0	0.0	✓	229	191	-38	2.6	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	98	98	0	0.0	✓	15	8	-7	2.1	✓	0	2	2	2.0	✓	113	108	-5	0.5	✓
		NB	MCC_304_A_NB	125	89	-36	3.5	✓	19	1	-18	5.7	✓	0	4	4	2.8	✓	144	94	-50	4.6	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	260	281	21	1.3	✓	29	20	-9	1.8	✓	2	3	1	0.6	✓	291	304	13	0.8	✓
		EB	MCC_304_B_EB	175	185	10	0.7	✓	33	21	-12	2.3	✓	3	2	-1	0.6	✓	211	208	-3	0.2	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	111	98	-13	1.3	✓	24	5	-19	5.0	✓	0	2	2	2.0	✓	135	105	-30	2.7	✓
		SB	MCC_304_C_SB	94	86	-8	0.8	✓	12	2	-10	3.8	✓	1	1	0	0.0	✓	107	89	-18	1.8	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	102	95	-7	0.7	✓	22	11	-11	2.7	✓	4	0	-4	2.8	✓	128	106	-22	2.0	✓
		WB	MCC_304_D_WB	177	211	34	2.4	✓	26	20	-6	1.3	✓	2	0	-2	2.0	✓	205	231	26	1.8	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	696	584	-112	4.4	✓	34	21	-13	2.5	✓	26	22	-4	0.8	✓	756	627	-129	4.9	✓
30013377		SB	30013377	879	859	-20	0.7	✓	37	33	-4	0.7	✓	29	31	2	0.4	✓	945	923	-22	0.7	✓
30013396	A14 - J56 Through	EB	30013396	1603	1449	-154	3.9	✓	145	112	-33	2.9	✓	423	377	-46	2.3	✓	2171	1938	-233	5.1	✓
30013397	A14 - J56 EXIT	EB	30013397	425	358	-67	3.4	✓	26	25	-1	0.2	✓	32	33	1	0.2	✓	483	416	-67	3.2	✓
30013398	A14 - J57 Through	EB	30013398	1348	1268	-80	2.2	✓	101	112	11	1.1	✓	365	326	-39	2.1	✓	1814	1706	-108	2.6	✓
30013399	A14 - J57 EXIT	EB	30013399	713	645	-68	2.6	✓	88	45	-43	5.3	✓	139	83	-56	5.3	✓	940	773	-167	5.7	×
30013402	A14 - J57 Through	WB	30013402	1469	1538	69	1.8	✓	122	145	23	2.0	✓	282	297	15	0.9	✓	1873	1980	107	2.4	✓
30013403	A14 - J57 EXIT	WB	30013403	196	207	11	0.8	✓	17	34	17	3.4	✓	43	28	-15	2.5	✓	256	269	13	0.8	✓
30013406	A14 - J55 Through	WB	30013406	1126	1053	-73	2.2	✓	94	60	-34	3.9	✓	254	230	-24	1.5	✓	1474	1343	-131	3.5	✓
30013407	A14 - J55 EXIT	WB	30013407	1066	1184	118	3.5	✓	75	88	13	1.4	✓	152	130	-22	1.9	✓	1293	1402	109	3.0	✓
30013408	A14 - J55 Through	EB	30013408	971	929	-42	1.4	✓	79	50	-29	3.6	✓	249	225	-24	1.6	✓	1299	1204	-95	2.7	✓
30013410	A14 - J53 Through	NB	30013410	1620	1259	-361	9.5	×	139	108	-31	2.8	✓	397	324	-73	3.8	✓	2156	1691	-465	10.6	×
30013411	A14 - J53 EXIT	NB	30013411	374	303	-71	3.9	✓	39	8	-31	6.4	✓	28	3	-25	6.4	✓	441	314	-127	6.5	×
30013415	A14 - J51 EXIT	NB	30013415	720	632	-88	3.4	✓	70	74	4	0.5	✓	104	91	-13	1.3	✓	894	797	-97	3.3	✓
30013417	A14 - J51 EXIT	SB	30013417	229	216	-13	0.9	✓	26	44	18	3.0	✓	27	27	0	0.0	✓	282	287	5	0.3	✓
30013418	A14 - between J51 and J50	NB	30013418	1533	1416	-117	3.0	✓	125	129	4	0.4	✓	331	302	-29	1.6	✓	1989	1847	-142	3.2	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	2	104	93%
LGV	114	0	107	100%
HGV	114	0	112	100%
Total Vehs	114	3	99	90%

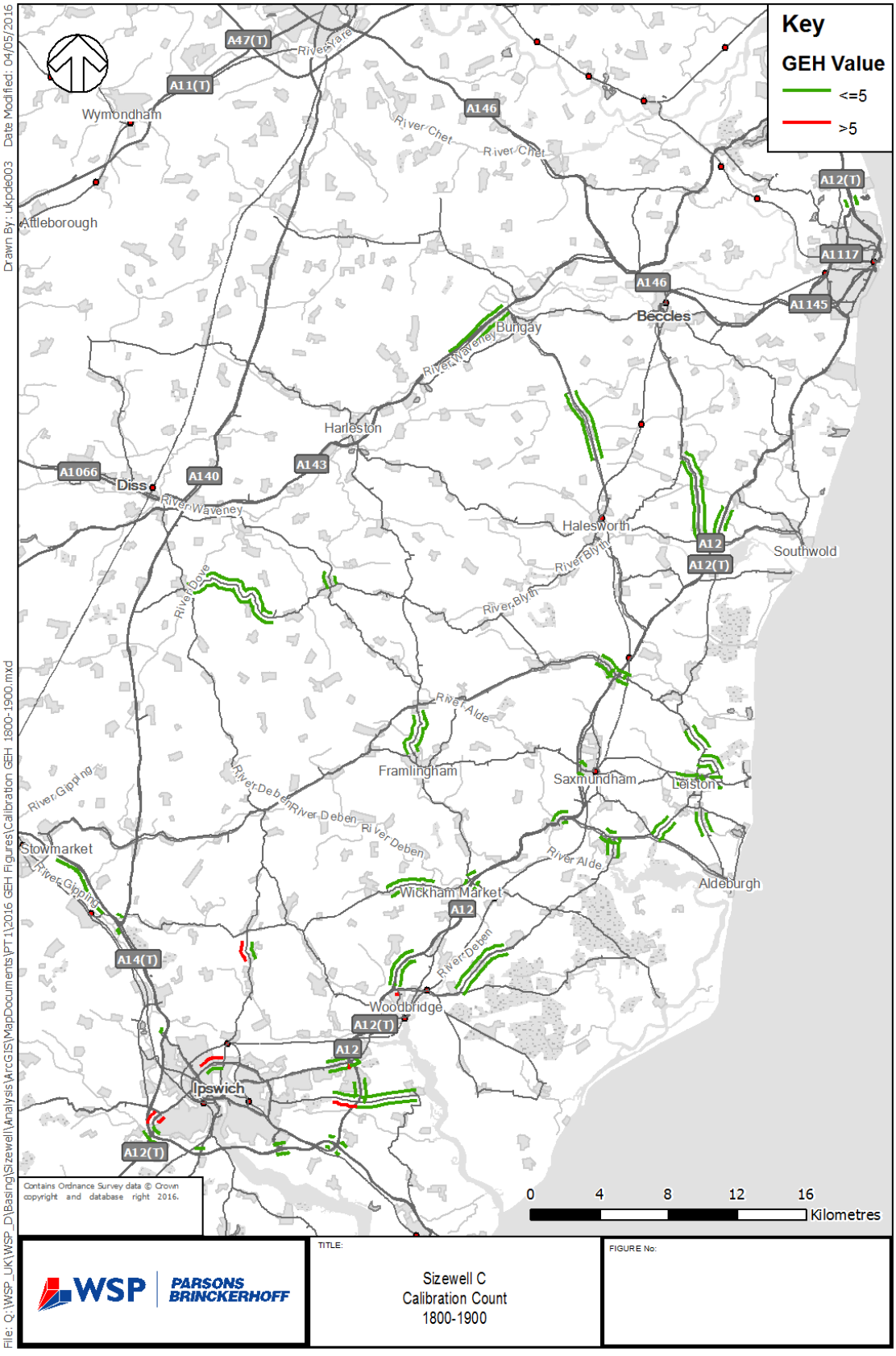


Figure D.4: Traffic Flow Calibration (18:00-19:00)

Table D.7: Traffic Flow Calibration – Screenlines (18:00-19:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	31	36	5	0.9	4	1	-3	1.9	1	0	-1	1.4	36	37	1	0.2
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	78	65	-13	1.5	9	2	-7	3.0	2	2	0	0.0	89	69	-20	2.3
SCC_M017_NB	M017 (A144 Ilketshall)	NB	126	128	2	0.2	15	7	-8	2.4	4	6	2	0.9	145	141	-4	0.3
ATC_16_NB	A145 North of Blythburgh and B1123	NB	79	81	2	0.2	13	2	-11	4.0	2	3	1	0.6	94	86	-8	0.8
ATC_17_NB	A12 North of Blythburgh and A1095	NB	252	259	7	0.4	19	21	2	0.4	9	9	0	0.0	280	289	9	0.5
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	44	50	6	0.9	5	1	-4	2.3	1	0	-1	1.4	50	51	1	0.1
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	93	79	-14	1.5	11	3	-8	3.0	3	3	0	0.0	107	85	-22	2.2
SCC_M017_SB	M017 (A144 Ilketshall)	SB	116	114	-2	0.2	14	5	-9	2.9	4	3	-1	0.5	134	122	-12	1.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	53	55	2	0.3	14	4	-10	3.3	3	6	3	1.4	70	65	-5	0.6
ATC_17_SB	A12 North of Blythburgh and A1095	SB	176	186	10	0.7	27	25	-2	0.4	8	8	0	0.0	211	219	8	0.5
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	624	576	-48	2.0	28	45	17	2.8	46	44	-2	0.3	698	665	-33	1.3
SCC_M055_NB	M055 (B1077 Swilland)	NB	17	54	37	6.2	2	5	3	1.6	1	1	0	0.0	20	60	40	6.3
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	826	669	-157	5.7	45	80	35	4.4	48	19	-29	5.0	919	768	-151	5.2
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	233	227	-6	0.4	14	8	-6	1.8	7	6	-1	0.4	254	241	-13	0.8
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	29	42	13	2.2	3	5	2	1.0	1	1	0	0.0	33	48	15	2.4
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	544	480	-64	2.8	58	52	-6	0.8	15	18	3	0.7	617	550	-67	2.8
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	153	156	3	0.2	19	11	-8	2.1	2	5	3	1.6	174	172	-2	0.2
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	92	99	7	0.7	13	9	-4	1.2	2	2	0	0.0	107	110	3	0.3
ATC_14_EB	B1078 West of Wickham Market	EB	91	106	15	1.5	12	10	-2	0.6	4	2	-2	1.2	107	118	11	1.0
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	665	740	75	2.8	70	76	6	0.7	16	18	2	0.5	751	834	83	2.9
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	274	253	-21	1.3	31	8	-23	5.2	5	3	-2	1.0	310	264	-46	2.7
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	965	886	-79	2.6	80	77	-3	0.3	35	43	8	1.3	1080	1006	-74	2.3
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	95	99	4	0.4	14	10	-4	1.2	2	1	-1	0.8	111	110	-1	0.1
ATC_14_WB	B1078 West of Wickham Market	WB	60	73	13	1.6	8	12	4	1.3	1	2	1	0.8	69	87	18	2.0
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	872	963	91	3.0	80	87	7	0.8	12	11	-1	0.3	964	1061	97	3.0
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	360	296	-64	3.5	94	34	-60	7.5	16	5	-11	3.4	470	335	-135	6.7
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	606	619	13	0.5	55	61	6	0.8	23	35	12	2.2	684	715	31	1.2

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	91	89	-2	0.2	6	3	-3	1.4	3	1	-2	1.4	100	93	-7	0.7
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	127	125	-2	0.2	5	7	2	0.8	2	2	0	0.0	134	134	0	0.0
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	543	570	27	1.1	29	50	21	3.3	6	30	24	5.7	578	650	72	2.9
ATC_103-1_EB	Road to Martlesham	EB	99	186	87	7.3	36	21	-15	2.8	2	0	-2	2.0	137	207	70	5.3
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	144	156	12	1.0	23	34	11	2.1	7	5	-2	0.8	174	195	21	1.5
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	457	508	51	2.3	21	56	35	5.6	6	11	5	1.7	484	575	91	4.0
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	77	80	3	0.3	3	4	1	0.5	2	1	-1	0.8	82	85	3	0.3
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	103	107	4	0.4	11	4	-7	2.6	2	1	-1	0.8	116	112	-4	0.4
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	428	696	268	11.3	19	66	47	7.2	4	28	24	6.0	451	790	339	13.6
ATC_103-1_WB	Road to Martlesham	WB	123	192	69	5.5	49	18	-31	5.4	3	0	-3	2.4	175	210	35	2.5
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	123	140	17	1.5	27	43	16	2.7	5	8	3	1.2	155	191	36	2.7
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	470	487	17	0.8	29	66	37	5.4	11	8	-3	1.0	510	561	51	2.2
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	28	33	5	0.9	1	0	-1	1.4	1	0	-1	1.4	30	33	3	0.5
MCC_303_B_EB	B1119 / B1122 / B1069 (B1119 West)	EB	117	120	3	0.3	13	9	-4	1.2	0	3	3	2.4	130	132	2	0.2
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	157	163	6	0.5	11	15	4	1.1	3	2	-1	0.6	171	180	9	0.7
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	88	85	-3	0.3	8	2	-6	2.7	2	0	-2	2.0	98	87	-11	1.1
Outbound																		
ATC_4_NB	Lovers Lane	NB	37	39	2	0.3	4	0	-4	2.8	1	0	-1	1.4	42	39	-3	0.5
MCC_303_B_WB	B1119 / B1122 / B1069 (B1119 West)	WB	111	117	6	0.6	10	5	-5	1.8	0	2	2	2.0	121	124	3	0.3
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	122	127	5	0.4	9	8	-1	0.3	3	2	-1	0.6	134	137	3	0.3
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	97	92	-5	0.5	6	2	-4	2.0	1	0	-1	1.4	104	94	-10	1.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	566	569	3	0.1	60	33	-27	4.0	18	20	2	0.5	644	622	-22	0.9
	Southbound	482	484	2	0.1	71	38	-33	4.5	19	20	1	0.2	572	542	-30	1.3
Northern	Northbound	1700	1526	-174	4.3	89	138	49	4.6	102	70	-32	3.5	1891	1734	-157	3.7
	Southbound	726	678	-48	1.8	80	68	-12	1.4	18	24	6	1.3	824	770	-54	1.9
West of A12	Eastbound	2087	2084	-3	0.1	206	180	-26	1.9	62	68	6	0.7	2355	2332	-23	0.5
	Westbound	1993	2050	57	1.3	251	204	-47	3.1	54	54	0	0.0	2298	2308	10	0.2
East of A12	Eastbound	1461	1634	173	4.4	120	171	51	4.2	26	49	23	3.8	1607	1854	247	5.9
	Westbound	1324	1702	378	9.7	138	201	63	4.8	27	46	19	3.1	1489	1949	460	11.1
Leiston	Inbound	390	401	11	0.6	33	26	-7	1.3	6	5	-1	0.4	429	432	3	0.1
	Outbound	367	375	8	0.4	29	15	-14	3.0	5	4	-1	0.5	401	394	-7	0.4

Table D.8: Traffic Flow Calibration – All Counts (18:00-19:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	98	109	11	1.1	✓	14	4	-10	3.3	✓	2	0	-2	2.0	✓	114	113	-1	0.1	✓
		SB	ATC_2_SB	118	117	-1	0.1	✓	8	3	-5	2.1	✓	3	1	-2	1.4	✓	129	121	-8	0.7	✓
3	King Georges Avenue	EB	ATC_3_EB	75	82	7	0.8	✓	4	0	-4	2.8	✓	0	0	0	0.0	✓	79	82	3	0.3	✓
		WB	ATC_3_WB	92	86	-6	0.6	✓	13	0	-13	5.1	✓	1	0	-1	1.4	✓	106	86	-20	2.0	✓
4	Lovers Lane	NB	ATC_4_NB	37	39	2	0.3	✓	4	0	-4	2.8	✓	1	0	-1	1.4	✓	42	39	-3	0.5	✓
		SB	ATC_4_SB	28	33	5	0.9	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	30	33	3	0.5	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	157	163	6	0.5	✓	11	15	4	1.1	✓	3	2	-1	0.6	✓	171	180	9	0.7	✓
		SB	ATC_7_SB	122	127	5	0.4	✓	9	8	-1	0.3	✓	3	2	-1	0.6	✓	134	137	3	0.3	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	88	85	-3	0.3	✓	8	2	-6	2.7	✓	2	0	-2	2.0	✓	98	87	-11	1.1	✓
		SB	ATC_8_SB	97	92	-5	0.5	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	104	94	-10	1.0	✓
13	A12 East of Farnham	EB	ATC_13_EB	623	617	-6	0.2	✓	53	60	7	0.9	✓	17	19	2	0.5	✓	693	696	3	0.1	✓
		WB	ATC_13_WB	409	412	3	0.1	✓	31	39	8	1.4	✓	10	17	7	1.9	✓	450	468	18	0.8	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	91	106	15	1.5	✓	12	10	-2	0.6	✓	4	2	-2	1.2	✓	107	118	11	1.0	✓
		WB	ATC_14_WB	60	73	13	1.6	✓	8	12	4	1.3	✓	1	2	1	0.8	✓	69	87	18	2.0	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	79	81	2	0.2	✓	13	2	-11	4.0	✓	2	3	1	0.6	✓	94	86	-8	0.8	✓
		SB	ATC_16_SB	53	55	2	0.3	✓	14	4	-10	3.3	✓	3	6	3	1.4	✓	70	65	-5	0.6	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	252	259	7	0.4	✓	19	21	2	0.4	✓	9	9	0	0.0	✓	280	289	9	0.5	✓
		SB	ATC_17_SB	176	186	10	0.7	✓	27	25	-2	0.4	✓	8	8	0	0.0	✓	211	219	8	0.5	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	233	227	-6	0.4	✓	14	8	-6	1.8	✓	7	6	-1	0.4	✓	254	241	-13	0.8	✓
		WB	ATC_81_WB	153	156	3	0.2	✓	19	11	-8	2.1	✓	2	5	3	1.6	✓	174	172	-2	0.2	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	826	669	-157	5.7	✗	45	80	35	4.4	✓	48	19	-29	5.0	✓	919	768	-151	5.2	✗
		SB	ATC_82-1_SB	544	480	-64	2.8	✓	58	52	-6	0.8	✓	15	18	3	0.7	✓	617	550	-67	2.8	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	543	570	27	1.1	✓	29	50	21	3.3	✓	6	30	24	5.7	✓	578	650	72	2.9	✓
		WB	ATC_82-2_WB	428	696	268	11.3	✗	19	66	47	7.2	✓	4	28	24	6.0	✓	451	790	339	13.6	✗
84	A143 North of Beccles to Diss	EB	ATC_84_EB	396	396	0	0.0	✓	23	25	2	0.4	✓	14	4	-10	3.3	✓	433	425	-8	0.4	✓
		WB	ATC_84_WB	179	187	8	0.6	✓	30	33	3	0.5	✓	9	14	5	1.5	✓	218	234	16	1.1	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	82	87	5	0.5	✓	9	5	-4	1.5	✓	2	0	-2	2.0	✓	93	92	-1	0.1	✓
		WB	ATC_87_WB	49	58	9	1.2	✓	7	6	-1	0.4	✓	1	0	-1	1.4	✓	57	64	7	0.9	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	457	508	51	2.3	✓	21	56	35	5.6	✓	6	11	5	1.7	✓	484	575	91	4.0	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	470	487	17	0.8	✓	29	66	37	5.4	✓	11	8	-3	1.0	✓	510	561	51	2.2	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	406	397	-9	0.4	✓	19	5	-14	4.0	✓	4	5	1	0.5	✓	429	407	-22	1.1	✓
		SB	ATC_101-4_SB	385	351	-34	1.8	✓	30	5	-25	6.0	✓	6	4	-2	0.9	✓	421	360	-61	3.1	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	606	619	13	0.5	✓	55	61	6	0.8	✓	23	35	12	2.2	✓	684	715	31	1.2	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	965	886	-79	2.6	✓	80	77	-3	0.3	✓	35	43	8	1.3	✓	1080	1006	-74	2.3	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	274	253	-21	1.3	✓	31	8	-23	5.2	✓	5	3	-2	1.0	✓	310	264	-46	2.7	✓
		WB	ATC_102-1_WB	360	296	-64	3.5	✓	94	34	-60	7.5	✓	16	5	-11	3.4	✓	470	335	-135	6.7	✗
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1002	990	-12	0.4	✓	156	133	-23	1.9	✓	39	40	1	0.2	✓	1197	1163	-34	1.0	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1368	1224	-144	4.0	✓	80	143	63	6.0	✓	50	45	-5	0.7	✓	1498	1412	-86	2.3	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	144	156	12	1.0	✓	23	34	11	2.1	✓	7	5	-2	0.8	✓	174	195	21	1.5	✓
		WB	ATC_102-4_WB	123	140	17	1.5	✓	27	43	16	2.7	✓	5	8	3	1.2	✓	155	191	36	2.7	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	99	186	87	7.3	✓	36	21	-15	2.8	✓	2	0	-2	2.0	✓	137	207	70	5.3	✓
		WB	ATC_103-1_WB	123	192	69	5.5	✓	49	18	-31	5.4	✓	3	0	-3	2.4	✓	175	210	35	2.5	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	665	740	75	2.8	✓	70	76	6	0.7	✓	16	18	2	0.5	✓	751	834	83	2.9	✓
		WB	ATC_103-4_WB	872	963	91	3.0	✓	80	87	7	0.8	✓	12	11	-1	0.3	✓	964	1061	97	3.0	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1355	1148	-207	5.9	✗	247	143	-104	7.4	✗	49	47	-2	0.3	✓	1651	1338	-313	8.1	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	951	852	-99	3.3	✓	146	126	-20	1.7	✓	46	41	-5	0.8	✓	1143	1019	-124	3.8	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	17	17	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	17	17	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	4	4	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	4	4	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	91	89	-2	0.2	✓	6	3	-3	1.4	✓	3	1	-2	1.4	✓	100	93	-7	0.7	✓
		WB	ATC_105-1_WB	77	80	3	0.3	✓	3	4	1	0.5	✓	2	1	-1	0.8	✓	82	85	3	0.3	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	416	413	-3	0.1	✓	31	31	0	0.0	✓	13	13	0	0.0	✓	460	457	-3	0.1	✓
		SB	ATC_105-2_SB	299	294	-5	0.3	✓	44	34	-10	1.6	✓	13	13	0	0.0	✓	356	341	-15	0.8	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	95	99	4	0.4	✓	14	10	-4	1.2	✓	2	1	-1	0.8	✓	111	110	-1	0.1	✓
		SB	ATC_202-1_SB	92	99	7	0.7	✓	13	9	-4	1.2	✓	2	2	0	0.0	✓	107	110	3	0.3	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	437	429	-8	0.4	✓	43	30	-13	2.2	✓	15	13	-2	0.5	✓	495	472	-23	1.0	✓
		WB	ATC_202-2_WB	307	301	-6	0.3	✓	54	36	-18	2.7	✓	15	12	-3	0.8	✓	376	349	-27	1.4	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	367	370	3	0.2	✓	22	23	1	0.2	✓	11	11	0	0.0	✓	400	404	4	0.2	✓
		SB	ATC_202-3_SB	234	241	7	0.5	✓	32	27	-5	0.9	✓	12	11	-1	0.3	✓	278	279	1	0.1	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	127	125	-2	0.2	✓	5	7	2	0.8	✓	2	2	0	0.0	✓	134	134	0	0.0	✓
		WB	ATC_204_WB	103	107	4	0.4	✓	11	4	-7	2.6	✓	2	1	-1	0.8	✓	116	112	-4	0.4	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	60	62	2	0.3	✓	7	7	0	0.0	✓	2	2	0	0.0	✓	69	71	2	0.2	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	129	138	9	0.8	✓	9	13	4	1.2	✓	3	2	-1	0.6	✓	141	153	12	1.0	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	178	179	1	0.1	✓	19	14	-5	1.2	✓	1	1	0	0.0	✓	198	194	-4	0.3	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	98	103	5	0.5	✓	11	5	-6	2.1	✓	5	2	-3	1.6	✓	114	110	-4	0.4	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	78	65	-13	1.5	✓	9	2	-7	3.0	✓	2	2	0	0.0	✓	89	69	-20	2.3	✓
		SB	SCC_A3489_SB	93	79	-14	1.5	✓	11	3	-8	3.0	✓	3	3	0	0.0	✓	107	85	-22	2.2	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	31	36	5	0.9	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	36	37	1	0.2	✓
		SB	SCC_A3527_SB	44	50	6	0.9	✓	5	1	-4	2.3	✓	1	0	-1	1.4	✓	50	51	1	0.1	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	126	128	2	0.2	✓	15	7	-8	2.4	✓	4	6	2	0.9	✓	145	141	-4	0.3	✓
		SB	SCC_M017_SB	116	114	-2	0.2	✓	14	5	-9	2.9	✓	4	3	-1	0.5	✓	134	122	-12	1.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	17	54	37	6.2	✓	2	5	3	1.6	✓	1	1	0	0.0	✓	20	60	40	6.3	✓
		SB	SCC_M055_SB	29	42	13	2.2	✓	3	5	2	1.0	✓	1	1	0	0.0	✓	33	48	15	2.4	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	564	722	158	6.2	✗	66	64	-2	0.2	✓	17	24	7	1.5	✓	647	810	163	6.0	✗
		SB	SCC_Y151_SB	495	761	266	10.6	✗	58	99	41	4.6	✓	15	43	28	5.2	✓	568	903	335	12.4	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	660	526	-134	5.5	✗	77	40	-37	4.8	✓	20	13	-7	1.7	✓	757	579	-178	6.9	✗
		WB	SCC_Y189_WB	640	637	-3	0.1	✓	75	51	-24	3.0	✓	20	14	-6	1.5	✓	735	702	-33	1.2	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	211	204	-7	0.5	✓	18	10	-8	2.1	✓	1	3	2	1.4	✓	230	217	-13	0.9	✓
		EB	MCC_302_B_EB	301	291	-10	0.6	✓	24	21	-3	0.6	✓	1	3	2	1.4	✓	326	315	-11	0.6	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	138	135	-3	0.3	✓	11	2	-9	3.5	✓	0	0	0	0.0	✓	149	137	-12	1.0	✓
		SB	MCC_302_C_SB	131	129	-2	0.2	✓	9	3	-6	2.4	✓	1	1	0	0.0	✓	141	133	-8	0.7	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	264	260	-4	0.2	✓	20	22	2	0.4	✓	1	4	3	1.9	✓	285	286	1	0.1	✓
		WB	MCC_302_D_WB	176	179	3	0.2	✓	15	11	-4	1.1	✓	0	3	3	2.4	✓	191	193	2	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	180	207	27	1.9	✓	13	6	-7	2.3	✓	1	1	0	0.0	✓	194	214	20	1.4	✓
		SB	MCC_303_A_SB	159	150	-9	0.7	✓	20	5	-15	4.2	✓	4	1	-3	1.9	✓	183	156	-27	2.1	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	117	120	3	0.3	✓	13	9	-4	1.2	✓	0	3	3	2.4	✓	130	132	2	0.2	✓
		WB	MCC_303_B_WB	111	117	6	0.6	✓	10	5	-5	1.8	✓	0	2	2	2.0	✓	121	124	3	0.3	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	163	162	-1	0.1	✓	18	6	-12	3.5	✓	4	2	-2	1.2	✓	185	170	-15	1.1	✓
		NB	MCC_303_C_NB	205	199	-6	0.4	✓	18	10	-8	2.1	✓	1	1	0	0.0	✓	224	210	-14	1.0	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	140	82	-58	5.5	✓	15	1	-14	4.9	✓	0	1	1	1.4	✓	155	84	-71	6.5	✓
		EB	MCC_303_D_EB	125	106	-19	1.8	✓	11	3	-8	3.0	✓	0	2	2	2.0	✓	136	111	-25	2.2	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	90	86	-4	0.4	✓	8	1	-7	3.3	✓	0	2	2	2.0	✓	98	89	-9	0.9	✓
		NB	MCC_304_A_NB	103	63	-40	4.4	✓	13	0	-13	5.1	✓	0	1	1	1.4	✓	116	64	-52	5.5	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	166	182	16	1.2	✓	23	6	-17	4.5	✓	0	1	1	1.4	✓	189	189	0	0.0	✓
		EB	MCC_304_B_EB	150	163	13	1.0	✓	14	6	-8	2.5	✓	0	1	1	1.4	✓	164	170	6	0.5	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	92	74	-18	2.0	✓	10	1	-9	3.8	✓	0	0	0	0.0	✓	102	75	-27	2.9	✓
		SB	MCC_304_C_SB	87	71	-16	1.8	✓	9	1	-8	3.6	✓	0	1	1	1.4	✓	96	73	-23	2.5	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	86	81	-5	0.5	✓	9	5	-4	1.5	✓	0	0	0	0.0	✓	95	86	-9	0.9	✓
		WB	MCC_304_D_WB	94	125	31	3.0	✓	14	5	-9	2.9	✓	0	0	0	0.0	✓	108	130	22	2.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	565	500	-65	2.8	✓	12	7	-5	1.6	✓	13	11	-2	0.6	✓	590	518	-72	3.1	✓
30013377		SB	30013377	555	552	-3	0.1	✓	19	16	-3	0.7	✓	11	16	5	1.4	✓	585	584	-1	0.0	✓
30013396	A14 - J56 Through	EB	30013396	1397	1296	-101	2.8	✓	64	75	11	1.3	✓	257	234	-23	1.5	✓	1718	1605	-113	2.8	✓
30013397	A14 - J56 EXIT	EB	30013397	359	283	-76	4.2	✓	13	11	-2	0.6	✓	9	16	7	2.0	✓	381	310	-71	3.8	✓
30013398	A14 - J57 Through	EB	30013398	1270	1191	-79	2.3	✓	47	79	32	4.0	✓	214	213	-1	0.1	✓	1531	1483	-48	1.2	✓
30013399	A14 - J57 EXIT	EB	30013399	539	523	-16	0.7	✓	31	18	-13	2.6	✓	60	29	-31	4.6	✓	630	570	-60	2.4	✓
30013402	A14 - J57 Through	WB	30013402	982	1056	74	2.3	✓	34	67	33	4.6	✓	211	210	-1	0.1	✓	1227	1333	106	3.0	✓
30013403	A14 - J57 EXIT	WB	30013403	226	234	8	0.5	✓	8	13	5	1.5	✓	26	4	-22	5.7	✓	260	251	-9	0.6	✓
30013406	A14 - J55 Through	WB	30013406	731	716	-15	0.6	✓	26	16	-10	2.2	✓	167	150	-17	1.4	✓	924	882	-42	1.4	✓
30013407	A14 - J55 EXIT	WB	30013407	901	838	-63	2.1	✓	28	50	22	3.5	✓	87	74	-13	1.4	✓	1016	962	-54	1.7	✓
30013408	A14 - J55 Through	EB	30013408	740	676	-64	2.4	✓	31	23	-8	1.5	✓	156	135	-21	1.7	✓	927	834	-93	3.1	✓
30013410	A14 - J53 Through	NB	30013410	1195	1014	-181	5.4	✗	50	49	-1	0.1	✓	227	205	-22	1.5	✓	1472	1268	-204	5.5	✓
30013411	A14 - J53 EXIT	NB	30013411	285	123	-162	11.3	✗	12	5	-7	2.4	✓	9	2	-7	3.0	✓	306	130	-176	11.9	✗
30013415	A14 - J51 EXIT	NB	30013415	624	576	-48	2.0	✓	28	45	17	2.8	✓	46	44	-2	0.3	✓	698	665	-33	1.3	✓
30013417	A14 - J51 EXIT	SB	30013417	164	158	-6	0.5	✓	9	28	19	4.4	✓	11	14	3	0.8	✓	184	200	16	1.2	✓
30013418	A14 - between J51 and J50	NB	30013418	1164	1135	-29	0.9	✓	44	59	15	2.1	✓	205	191	-14	1.0	✓	1413	1385	-28	0.7	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	3	102	93%
LGV	114	0	103	99%
HGV	114	0	109	100%
Total Vehs	114	3	101	93%

Appendix E
2015 Model Link Flow Validation Results

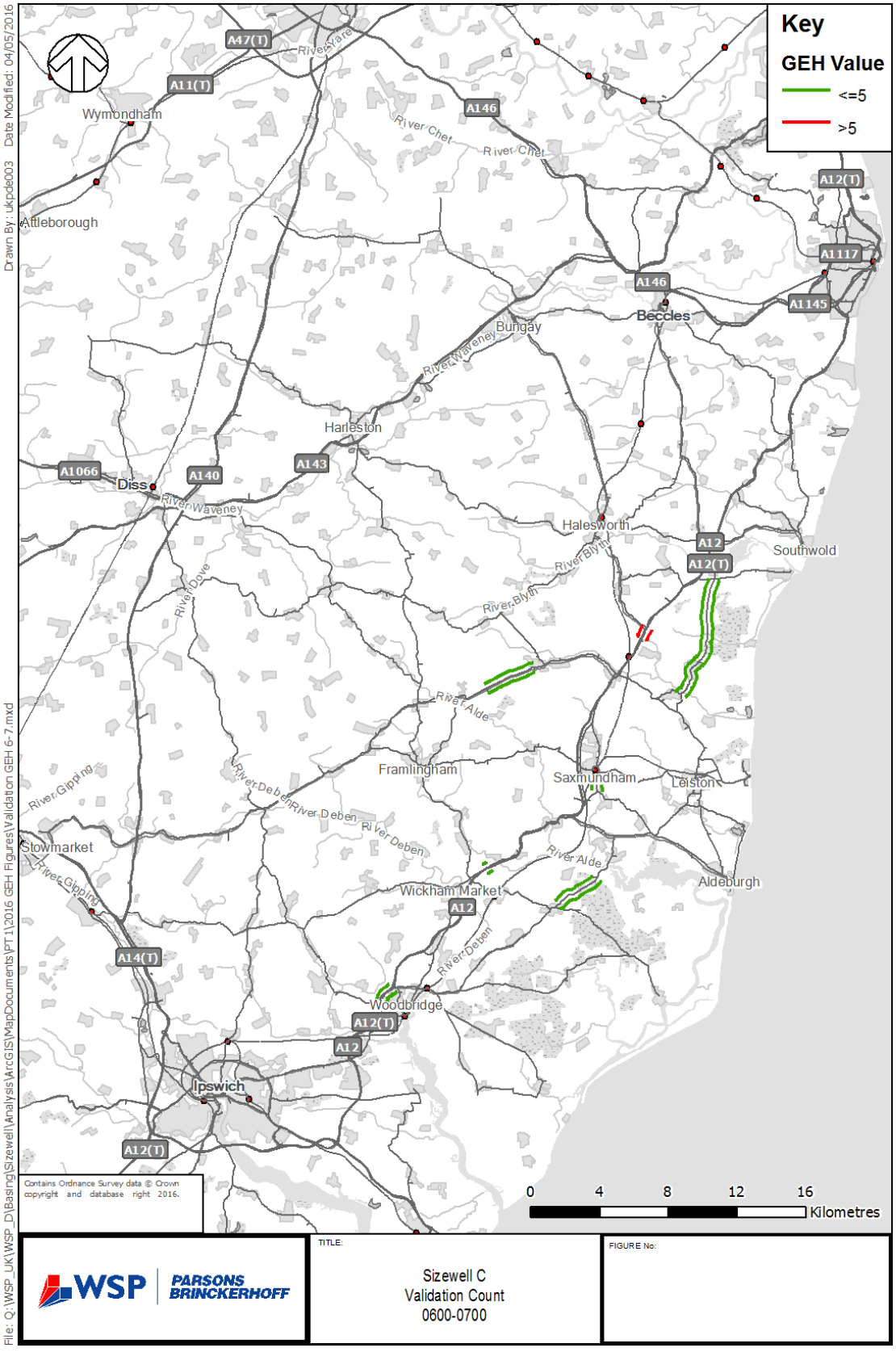


Figure E.1: Traffic Flow Validation (06:00-07:00)

Table E.1: Traffic Flow Validation – Screenlines (06:00-07:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	38	41	3	0.5	6	2	-4	2.0	1	0	-1	1.4	45	43	-2	0.3
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	99	192	93	7.7	25	42	17	2.9	24	24	0	0.0	148	258	110	7.7
ATC_10_EB	A1120 West of Peasenhall	EB	23	21	-2	0.4	4	3	-1	0.5	5	4	-1	0.5	32	28	-4	0.7
ATC_12_EB	A12 West of Marlesford	EB	215	171	-44	3.2	34	36	2	0.3	32	24	-8	1.5	281	231	-50	3.1
ATC_85_EB	B1069 between Tunstall and Snape	EB	28	31	3	0.6	4	5	1	0.5	1	1	0	0.0	33	37	4	0.7
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	18	29	11	2.3	4	1	-3	1.9	1	0	-1	1.4	23	30	7	1.4
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	210	101	-109	8.7	40	26	-14	2.4	22	24	2	0.4	272	151	-121	8.3
ATC_10_WB	A1120 West of Peasenhall	WB	23	32	9	1.7	6	7	1	0.4	3	3	0	0.0	32	42	10	1.6
ATC_12_WB	A12 West of Marlesford	WB	251	259	8	0.5	45	52	7	1.0	26	23	-3	0.6	322	334	12	0.7
ATC_85_WB	B1069 between Tunstall and Snape	WB	25	42	17	2.9	5	5	0	0.0	2	2	0	0.0	32	49	17	2.7

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	403	456	53	**2.6**	73	88	15	**1.7**	63	53	-10	**1.3**	539	597	58	**2.4**
	Outbound	527	463	-64	**2.9**	100	91	-9	**0.9**	54	52	-2	**0.3**	681	606	-75	**3.0**

Table E.2: Traffic Flow Validation – All Counts (06:00-07:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	210	101	-109	8.7	✗	40	26	-14	2.4	✓	22	24	2	0.4	✓	272	151	-121	8.3	✗
		SB	ATC_1_SB	99	192	93	7.7	✓	25	42	17	2.9	✓	24	24	0	0.0	✓	148	258	110	7.7	✗
9	B1125 South of Westleton	NB	ATC_9_NB	18	29	11	2.3	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	23	30	7	1.4	✓
		SB	ATC_9_SB	38	41	3	0.5	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	45	43	-2	0.3	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	23	21	-2	0.4	✓	4	3	-1	0.5	✓	5	4	-1	0.5	✓	32	28	-4	0.7	✓
		WB	ATC_10_WB	23	32	9	1.7	✓	6	7	1	0.4	✓	3	3	0	0.0	✓	32	42	10	1.6	✓
12	A12 West of Marlesford	EB	ATC_12_EB	215	171	-44	3.2	✓	34	36	2	0.3	✓	32	24	-8	1.5	✓	281	231	-50	3.1	✓
		WB	ATC_12_WB	251	259	8	0.5	✓	45	52	7	1.0	✓	26	23	-3	0.6	✓	322	334	12	0.7	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	457	509	52	2.4	✓	149	111	-38	3.3	✓	41	44	3	0.5	✓	647	664	17	0.7	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	347	314	-33	1.8	✓	119	87	-32	3.2	✓	54	48	-6	0.8	✓	520	449	-71	3.2	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	28	31	3	0.6	✓	4	5	1	0.5	✓	1	1	0	0.0	✓	33	37	4	0.7	✓
		WB	ATC_85_WB	25	42	17	2.9	✓	5	5	0	0.0	✓	2	2	0	0.0	✓	32	49	17	2.7	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	34	37	3	0.5	✓	4	4	0	0.0	✓	2	3	1	0.6	✓	40	44	4	0.6	✓
		SB	ATC_90_SB	37	44	7	1.1	✓	6	4	-2	0.9	✓	3	3	0	0.0	✓	46	51	5	0.7	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	20	19	-1	0.2	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	25	20	-5	1.1	✓
		SB	ATC_91_SB	35	44	9	1.4	✓	8	2	-6	2.7	✓	1	0	-1	1.4	✓	44	46	2	0.3	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	75%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

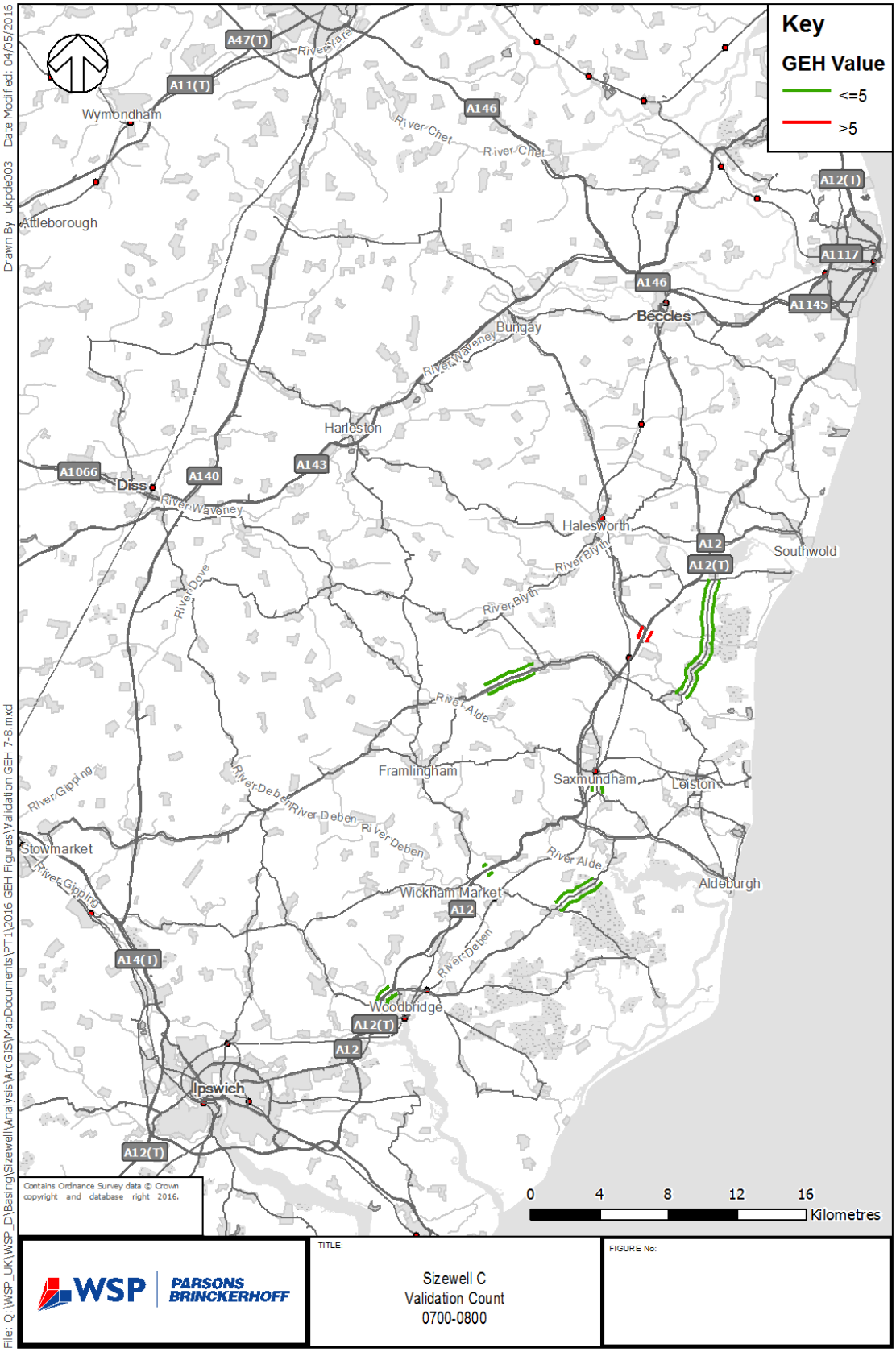


Figure E.2: Traffic Flow Validation (07:00-08:00)

Table E.3: Traffic Flow Validation – Screenlines (07:00-08:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	116	137	21	1.9	16	9	-7	2.0	2	0	-2	2.0	134	146	12	1.0
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	253	418	165	9.0	62	89	27	3.1	36	40	4	0.6	351	547	196	9.2
ATC_10_EB	A1120 West of Peasenhall	EB	79	77	-2	0.2	28	13	-15	3.3	10	8	-2	0.7	117	98	-19	1.8
ATC_12_EB	A12 West of Marlesford	EB	478	445	-33	1.5	90	102	12	1.2	45	46	1	0.1	613	593	-20	0.8
ATC_85_EB	B1069 between Tunstall and Snape	EB	96	95	-1	0.1	14	15	1	0.3	2	2	0	0.0	112	112	0	0.0
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	42	64	22	3.0	9	4	-5	2.0	2	1	-1	0.8	53	69	16	2.0
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	441	264	-177	9.4	77	69	-8	0.9	36	40	4	0.6	554	373	-181	8.4
ATC_10_WB	A1120 West of Peasenhall	WB	72	87	15	1.7	18	15	-3	0.7	7	6	-1	0.4	97	108	11	1.1
ATC_12_WB	A12 West of Marlesford	WB	552	612	60	2.5	68	79	11	1.3	29	31	2	0.4	649	722	73	2.8
ATC_85_WB	B1069 between Tunstall and Snape	WB	99	131	32	3.0	18	28	10	2.1	5	4	-1	0.5	122	163	41	3.4

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1022	1172	150	**4.5**	210	228	18	**1.2**	95	96	1	**0.1**	1327	1496	169	**4.5**
	Outbound	1206	1158	-48	**1.4**	190	195	5	**0.4**	79	82	3	**0.3**	1475	1435	-40	**1.0**

Table E.4: Traffic Flow Validation – All Counts (07:00-08:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	441	264	-177	9.4	✗	77	69	-8	0.9	✓	36	40	4	0.6	✓	554	373	-181	8.4	✗
		SB	ATC_1_SB	253	418	165	9.0	✗	62	89	27	3.1	✓	36	40	4	0.6	✓	351	547	196	9.2	✗
9	B1125 South of Westleton	NB	ATC_9_NB	42	64	22	3.0	✓	9	4	-5	2.0	✓	2	1	-1	0.8	✓	53	69	16	2.0	✓
		SB	ATC_9_SB	116	137	21	1.9	✓	16	9	-7	2.0	✓	2	0	-2	2.0	✓	134	146	12	1.0	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	79	77	-2	0.2	✓	28	13	-15	3.3	✓	10	8	-2	0.7	✓	117	98	-19	1.8	✓
		WB	ATC_10_WB	72	87	15	1.7	✓	18	15	-3	0.7	✓	7	6	-1	0.4	✓	97	108	11	1.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	478	445	-33	1.5	✓	90	102	12	1.2	✓	45	46	1	0.1	✓	613	593	-20	0.8	✓
		WB	ATC_12_WB	552	612	60	2.5	✓	68	79	11	1.3	✓	29	31	2	0.4	✓	649	722	73	2.8	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1147	1312	165	4.7	✓	294	209	-85	5.4	✓	65	75	10	1.2	✓	1506	1596	90	2.3	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	818	827	9	0.3	✓	284	213	-71	4.5	✓	121	97	-24	2.3	✓	1223	1137	-86	2.5	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	96	95	-1	0.1	✓	14	15	1	0.3	✓	2	2	0	0.0	✓	112	112	0	0.0	✓
		WB	ATC_85_WB	99	131	32	3.0	✓	18	28	10	2.1	✓	5	4	-1	0.5	✓	122	163	41	3.4	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	76	91	15	1.6	✓	15	10	-5	1.4	✓	4	5	1	0.5	✓	95	106	11	1.1	✓
		SB	ATC_90_SB	102	96	-6	0.6	✓	16	6	-10	3.0	✓	7	5	-2	0.8	✓	125	107	-18	1.7	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	33	42	9	1.5	✓	5	3	-2	1.0	✓	3	0	-3	2.4	✓	41	45	4	0.6	✓
		SB	ATC_91_SB	106	139	33	3.0	✓	15	9	-6	1.7	✓	5	0	-5	3.2	✓	126	148	22	1.9	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

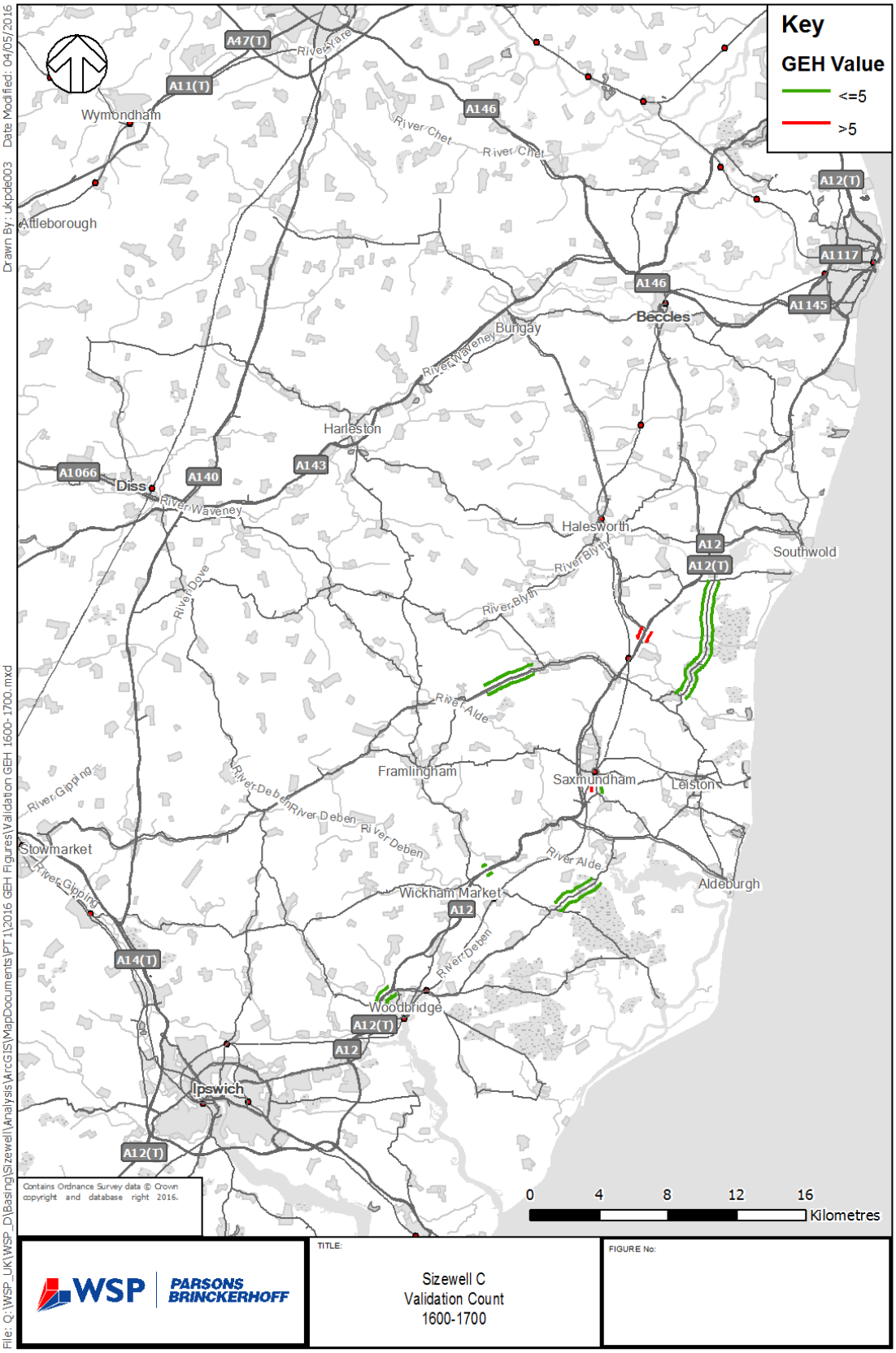


Figure E.3: Traffic Flow Validation (16:00-17:00)

Table E.5: Traffic Flow Validation – Screenlines (16:00-17:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	61	78	17	2.0	12	5	-7	2.4	3	1	-2	1.4	76	84	8	0.9
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	597	415	-182	8.1	79	69	-10	1.2	34	24	-10	1.9	710	508	-202	8.2
ATC_10_EB	A1120 West of Peasenhall	EB	120	127	7	0.6	20	19	-1	0.2	7	8	1	0.4	147	154	7	0.6
ATC_12_EB	A12 West of Marlesford	EB	828	786	-42	1.5	67	77	10	1.2	31	31	0	0.0	926	894	-32	1.1
ATC_85_EB	B1069 between Tunstall and Snape	EB	116	184	68	5.6	18	24	6	1.3	6	2	-4	2.0	140	210	70	5.3
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	133	128	-5	0.4	21	4	-17	4.8	6	1	-5	2.7	160	133	-27	2.2
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	420	611	191	8.4	60	81	21	2.5	24	34	10	1.9	504	726	222	9.0
ATC_10_WB	A1120 West of Peasenhall	WB	112	95	-17	1.7	30	20	-10	2.0	6	4	-2	0.9	148	119	-29	2.5
ATC_12_WB	A12 West of Marlesford	WB	701	707	6	0.2	85	93	8	0.8	37	39	2	0.3	823	839	16	0.6
ATC_85_WB	B1069 between Tunstall and Snape	WB	127	177	50	4.1	20	14	-6	1.5	5	2	-3	1.6	152	193	41	3.1

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1722	1590	-132	**3.2**	196	194	-2	**0.1**	81	66	-15	**1.7**	1999	1850	-149	**3.4**
	Outbound	1493	1718	225	**5.6**	216	212	-4	**0.3**	78	80	2	**0.2**	1787	2010	223	**5.1**

Table E.6: Traffic Flow Validation – All Counts (16:00-17:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	420	611	191	8.4	✗	60	81	21	2.5	✓	24	34	10	1.9	✓	504	726	222	9.0	✗
		SB	ATC_1_SB	597	415	-182	8.1	✗	79	69	-10	1.2	✓	34	24	-10	1.9	✓	710	508	-202	8.2	✗
9	B1125 South of Westleton	NB	ATC_9_NB	133	128	-5	0.4	✓	21	4	-17	4.8	✓	6	1	-5	2.7	✓	160	133	-27	2.2	✓
		SB	ATC_9_SB	61	78	17	2.0	✓	12	5	-7	2.4	✓	3	1	-2	1.4	✓	76	84	8	0.9	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	120	127	7	0.6	✓	20	19	-1	0.2	✓	7	8	1	0.4	✓	147	154	7	0.6	✓
		WB	ATC_10_WB	112	95	-17	1.7	✓	30	20	-10	2.0	✓	6	4	-2	0.9	✓	148	119	-29	2.5	✓
12	A12 West of Marlesford	EB	ATC_12_EB	828	786	-42	1.5	✓	67	77	10	1.2	✓	31	31	0	0.0	✓	926	894	-32	1.1	✓
		WB	ATC_12_WB	701	707	6	0.2	✓	85	93	8	0.8	✓	37	39	2	0.3	✓	823	839	16	0.6	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1213	1395	182	5.0	✗	323	207	-116	7.1	✗	79	106	27	2.8	✓	1615	1708	93	2.3	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1390	1312	-78	2.1	✓	253	152	-101	7.1	✗	100	72	-28	3.0	✓	1743	1536	-207	5.1	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	116	184	68	5.6	✓	18	24	6	1.3	✓	6	2	-4	2.0	✓	140	210	70	5.3	✓
		WB	ATC_85_WB	127	177	50	4.1	✓	20	14	-6	1.5	✓	5	2	-3	1.6	✓	152	193	41	3.1	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	236	124	-112	8.3	✗	29	13	-16	3.5	✓	9	5	-4	1.5	✓	274	142	-132	9.2	✗
		SB	ATC_90_SB	217	163	-54	3.9	✓	20	9	-11	2.9	✓	6	7	1	0.4	✓	243	179	-64	4.4	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	103	129	26	2.4	✓	11	3	-8	3.0	✓	3	0	-3	2.4	✓	117	132	15	1.3	✓
		SB	ATC_91_SB	39	55	16	2.3	✓	6	3	-3	1.4	✓	0	0	0	0.0	✓	45	58	13	1.8	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

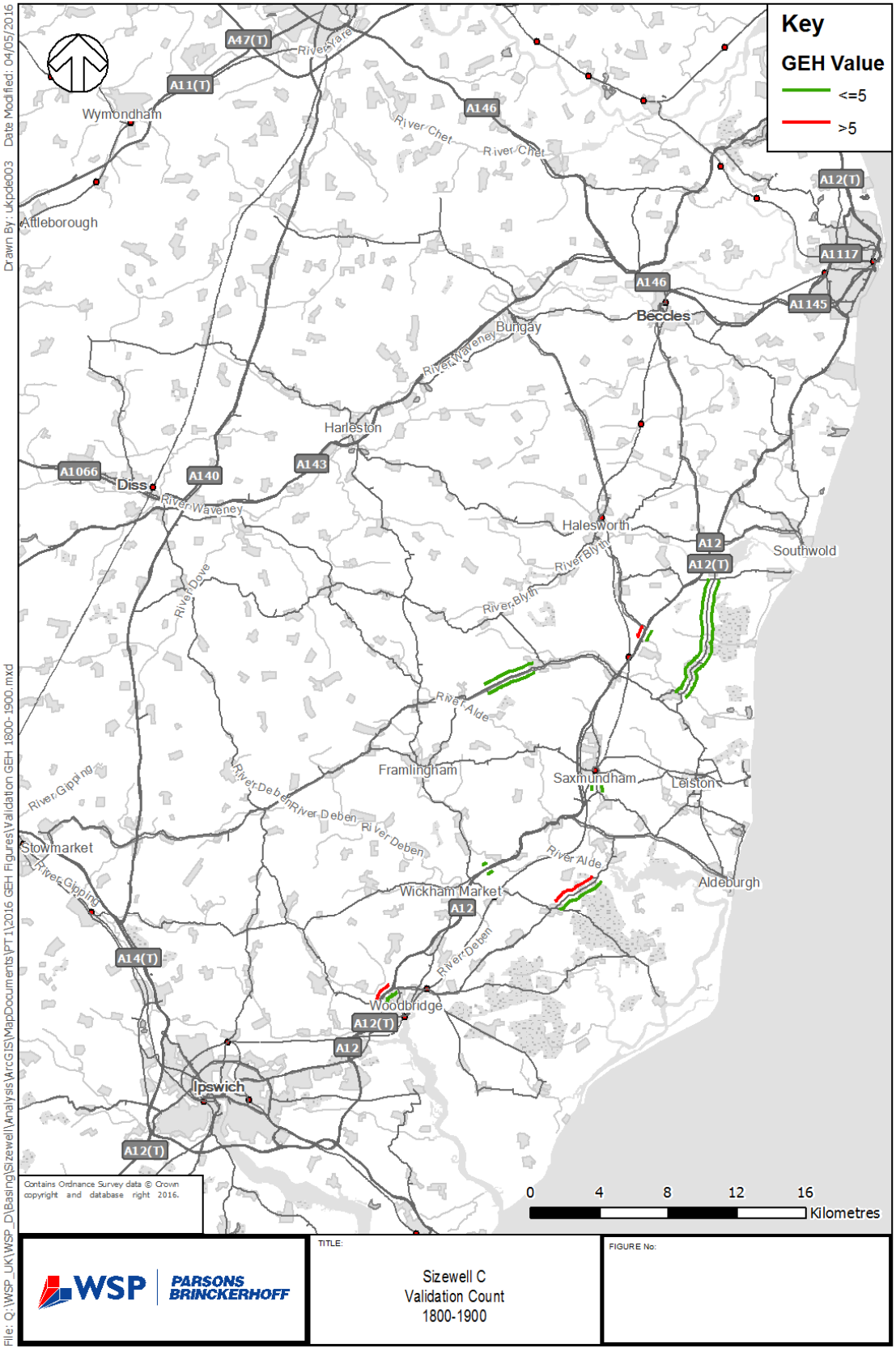


Figure E.4: Traffic Flow Validation (18:00-19:00)

Table E.7: Traffic Flow Validation – Screenlines (18:00-19:00)

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	53	63	10	1.3	5	1	-4	2.3	1	0	-1	1.4	59	64	5	0.6
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	372	269	-103	5.8	37	34	-3	0.5	12	13	1	0.3	421	316	-105	5.5
ATC_10_EB	A1120 West of Peasenhall	EB	71	90	19	2.1	9	7	-2	0.7	2	2	0	0.0	82	99	17	1.8
ATC_12_EB	A12 West of Marlesford	EB	585	642	57	2.3	40	64	24	3.3	18	20	2	0.5	643	726	83	3.2
ATC_85_EB	B1069 between Tunstall and Snape	EB	73	141	68	6.6	6	4	-2	0.9	2	1	-1	0.8	81	146	65	6.1
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	45	60	15	2.1	10	1	-9	3.8	1	0	-1	1.4	56	61	5	0.7
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	282	395	113	6.1	29	30	1	0.2	11	13	2	0.6	322	438	116	6.0
ATC_10_WB	A1120 West of Peasenhall	WB	71	74	3	0.4	14	8	-6	1.8	2	1	-1	0.8	87	83	-4	0.4
ATC_12_WB	A12 West of Marlesford	WB	398	423	25	1.2	35	41	6	1.0	10	17	7	1.9	443	481	38	1.8
ATC_85_WB	B1069 between Tunstall and Snape	WB	78	125	47	4.7	8	3	-5	2.1	1	1	0	0.0	87	129	42	4.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1154	1205	51	1.5	97	110	13	1.3	35	36	1	0.2	1286	1351	65	1.8
	Outbound	874	1077	203	6.5	96	83	-13	1.4	25	32	7	1.3	995	1192	197	6.0

Table E.8: Traffic Flow Validation – All Counts (18:00-19:00)

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	282	395	113	6.1	✗	29	30	1	0.2	✓	11	13	2	0.6	✓	322	438	116	6.0	✗
		SB	ATC_1_SB	372	269	-103	5.8	✗	37	34	-3	0.5	✓	12	13	1	0.3	✓	421	316	-105	5.5	✗
9	B1125 South of Westleton	NB	ATC_9_NB	45	60	15	2.1	✓	10	1	-9	3.8	✓	1	0	-1	1.4	✓	56	61	5	0.7	✓
		SB	ATC_9_SB	53	63	10	1.3	✓	5	1	-4	2.3	✓	1	0	-1	1.4	✓	59	64	5	0.6	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	71	90	19	2.1	✓	9	7	-2	0.7	✓	2	2	0	0.0	✓	82	99	17	1.8	✓
		WB	ATC_10_WB	71	74	3	0.4	✓	14	8	-6	1.8	✓	2	1	-1	0.8	✓	87	83	-4	0.4	✓
12	A12 West of Marlesford	EB	ATC_12_EB	585	642	57	2.3	✓	40	64	24	3.3	✓	18	20	2	0.5	✓	643	726	83	3.2	✓
		WB	ATC_12_WB	398	423	25	1.2	✓	35	41	6	1.0	✓	10	17	7	1.9	✓	443	481	38	1.8	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	864	1070	206	6.6	✗	260	116	-144	10.5	✗	26	45	19	3.2	✓	1150	1231	81	2.3	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1262	1133	-129	3.7	✓	257	129	-128	9.2	✗	61	48	-13	1.8	✓	1580	1310	-270	7.1	✗
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	73	141	68	6.6	✓	6	4	-2	0.9	✓	2	1	-1	0.8	✓	81	146	65	6.1	✓
		WB	ATC_85_WB	78	125	47	4.7	✓	8	3	-5	2.1	✓	1	1	0	0.0	✓	87	129	42	4.0	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	131	101	-30	2.8	✓	8	11	3	1.0	✓	3	3	0	0.0	✓	142	115	-27	2.4	✓
		SB	ATC_90_SB	132	108	-24	2.2	✓	13	4	-9	3.1	✓	3	3	0	0.0	✓	148	115	-33	2.9	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	26	51	25	4.0	✓	6	1	-5	2.7	✓	1	0	-1	1.4	✓	33	52	19	2.9	✓
		SB	ATC_91_SB	21	48	27	4.6	✓	6	1	-5	2.7	✓	0	0	0	0.0	✓	27	49	22	3.6	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Appendix F
2015 Model Journey Time Validation Results

Journey time validation graphs (06:00–07:00)

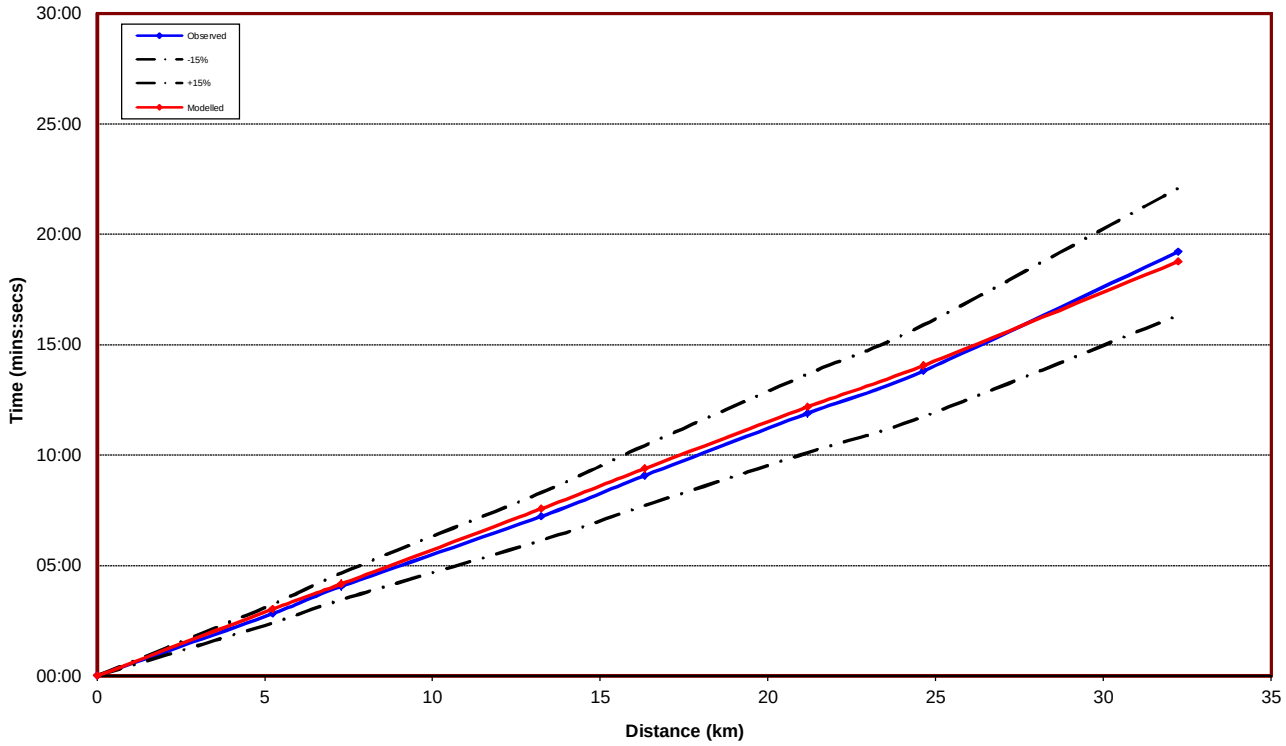


Figure F.1: Journey time – Route 1 Eastbound (06:00-07:00)

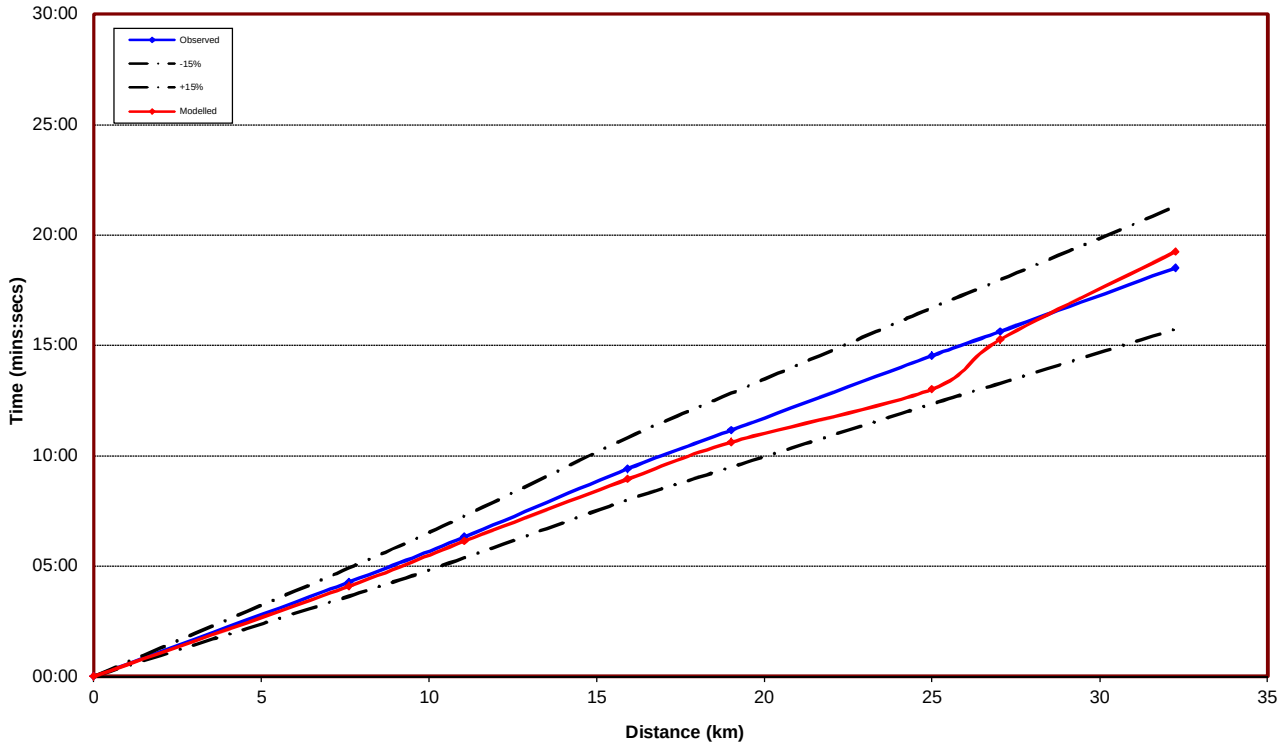


Figure F.2: Journey time – Route 1 Westbound (06:00-07:00)

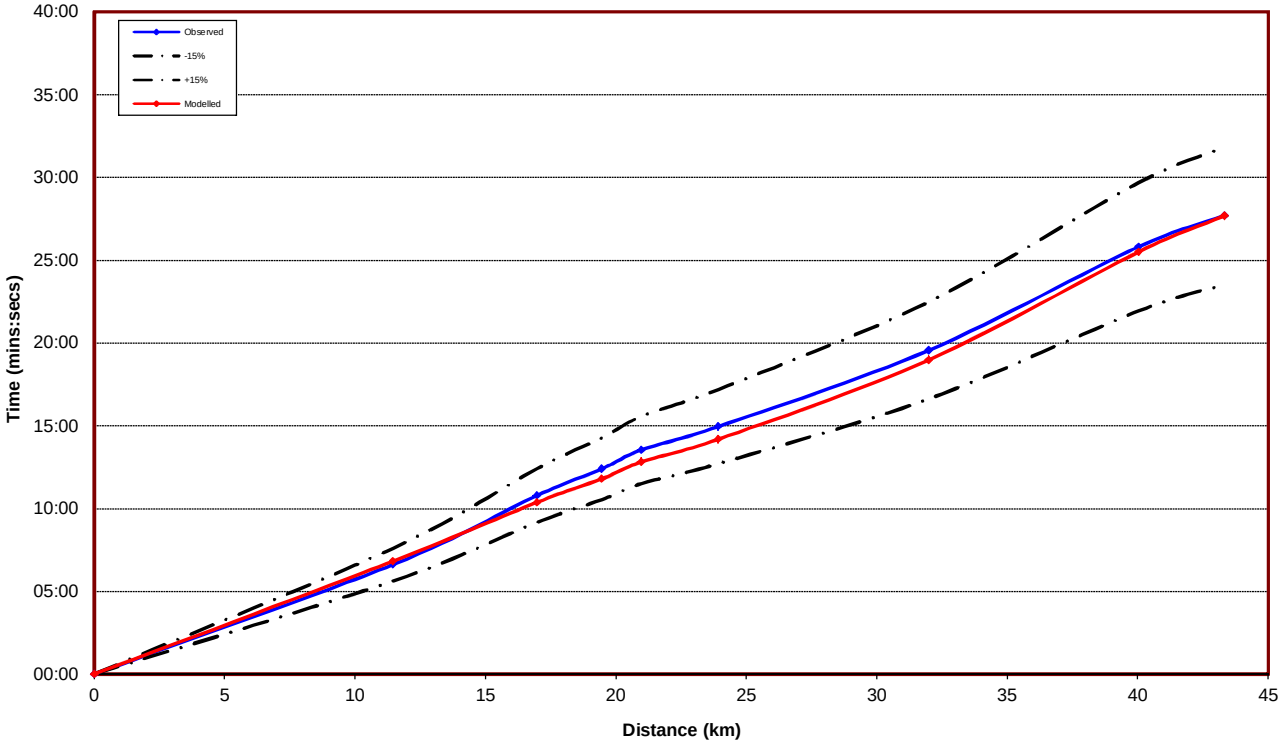


Figure F.3: Journey time – Route 2 Northbound (06:00-07:00)

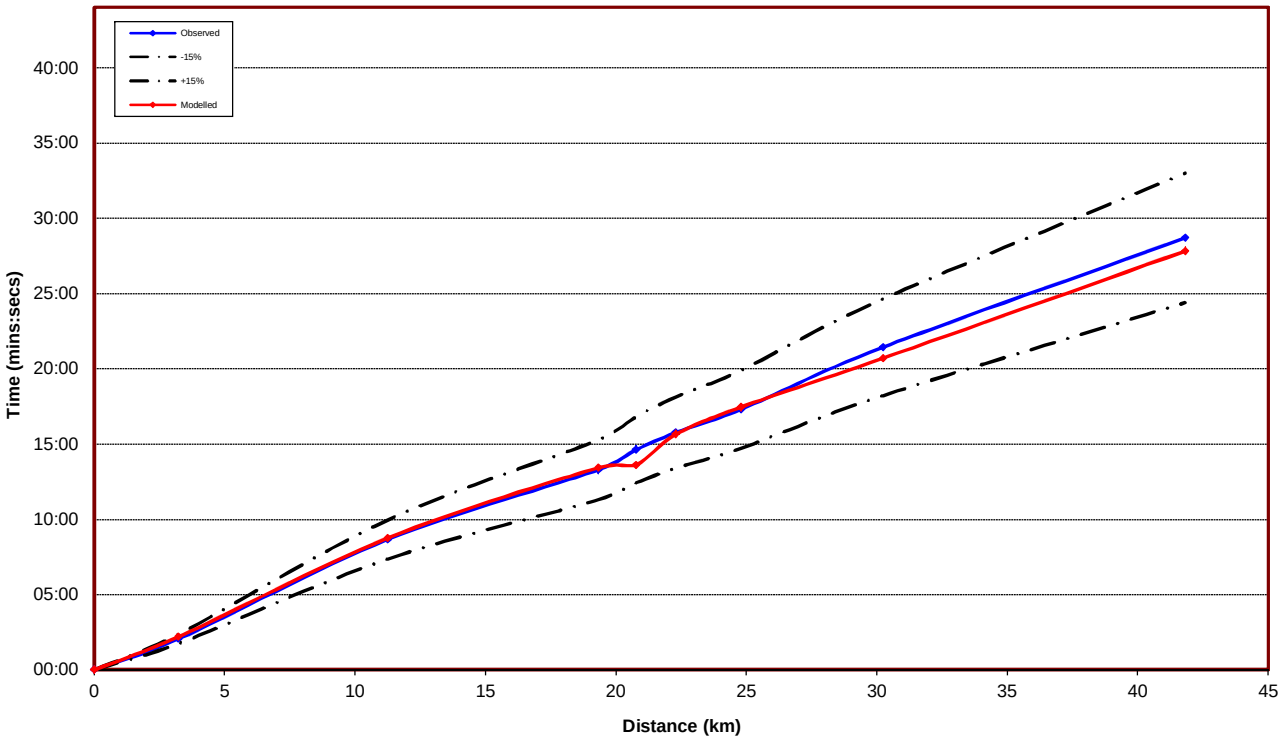


Figure F.4: Journey time – Route 2 Southbound (06:00-07:00)

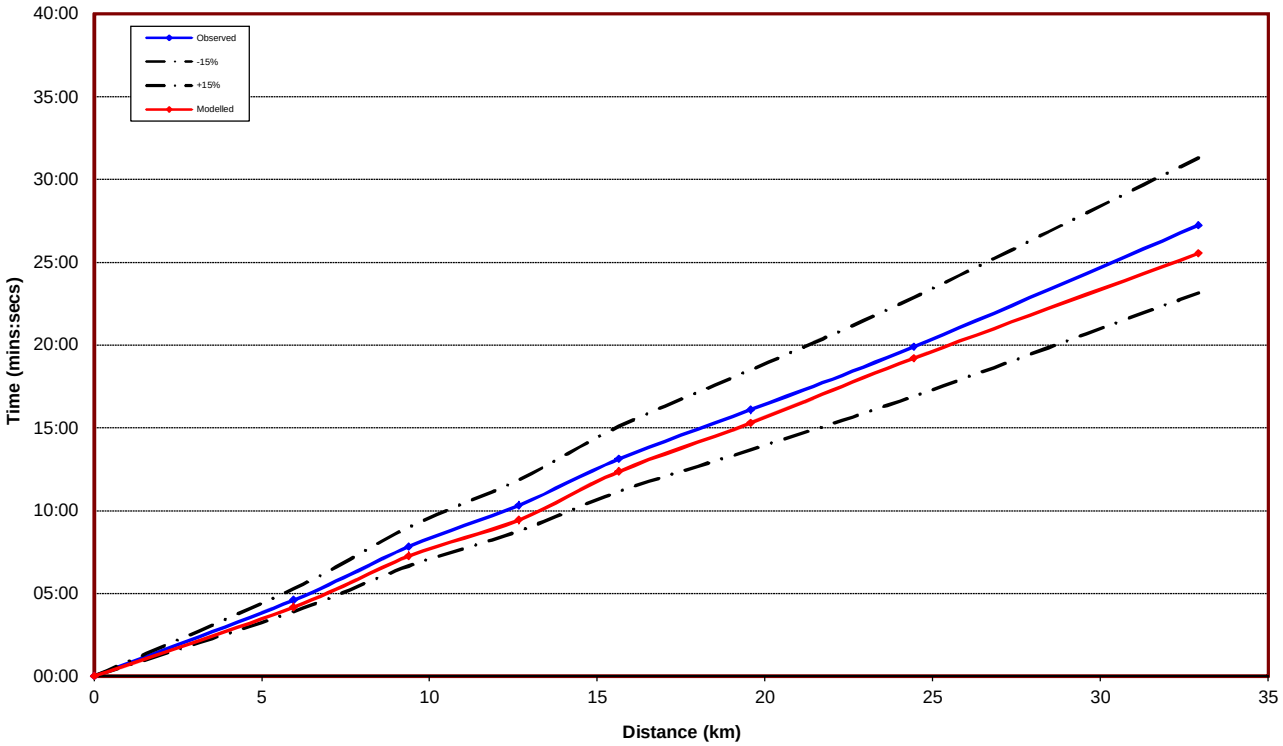


Figure F.5: Journey time – Route 3 Northbound (06:00-07:00)

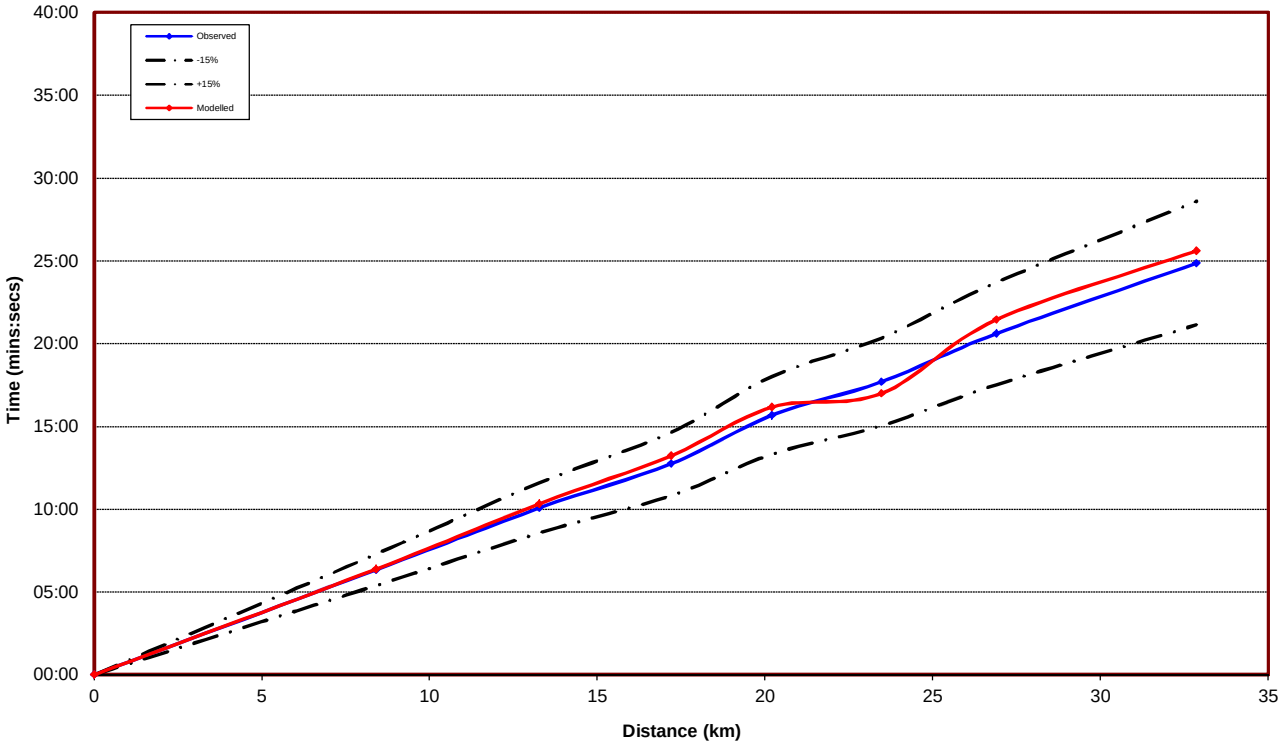


Figure F.6: Journey time – Route 3 Southbound (06:00-07:00)

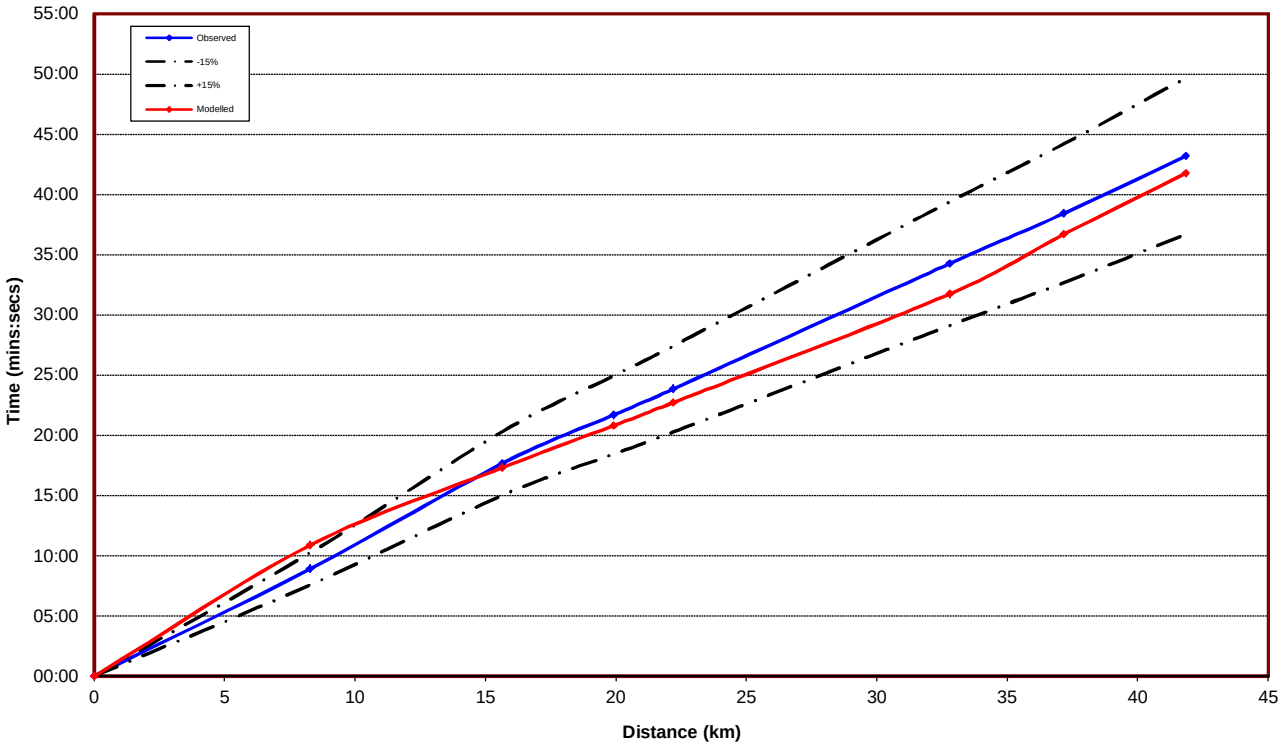


Figure F.7: Journey time – Route 4 Eastbound (06:00-07:00)

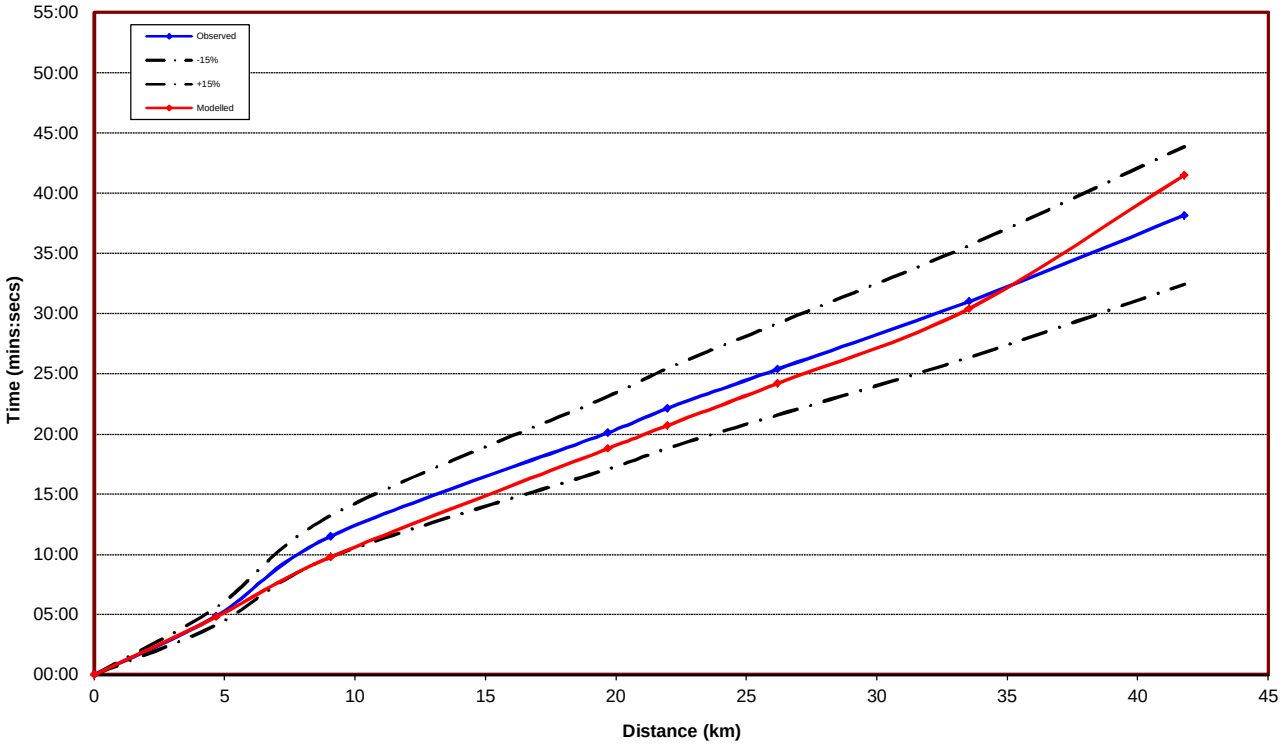


Figure F.8: Journey time – Route 4 Westbound (06:00-07:00)

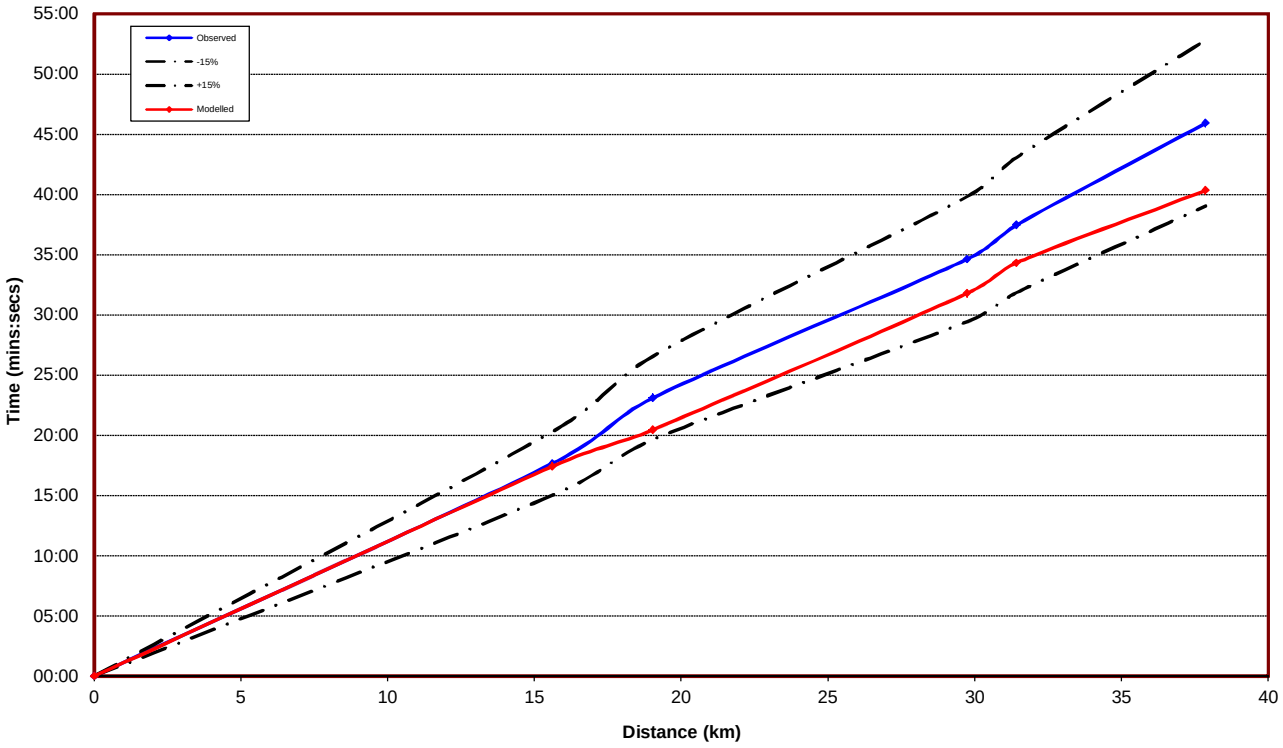


Figure F.9: Journey time – Route 5 Eastbound (06:00-07:00)

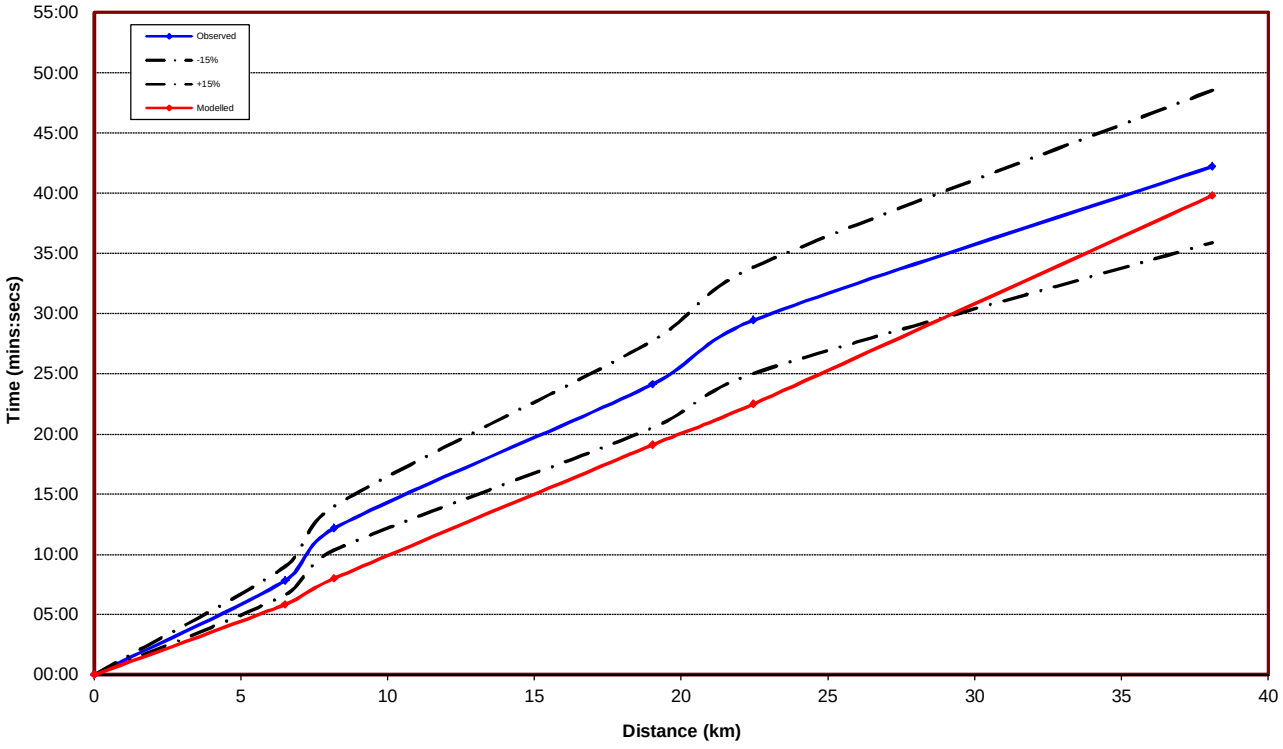


Figure F.10: Journey time – Route 5 Westbound (06:00-07:00)

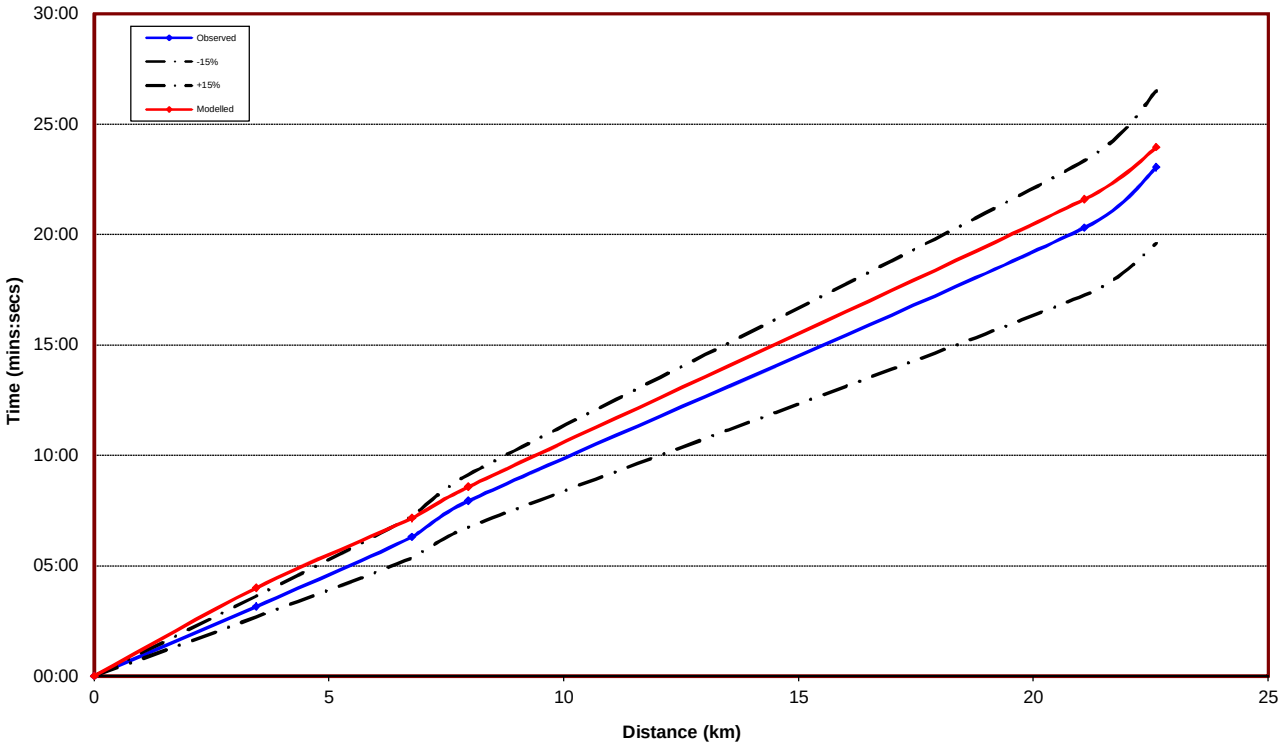


Figure F.11: Journey time – Route 6 Northbound (06:00-07:00)

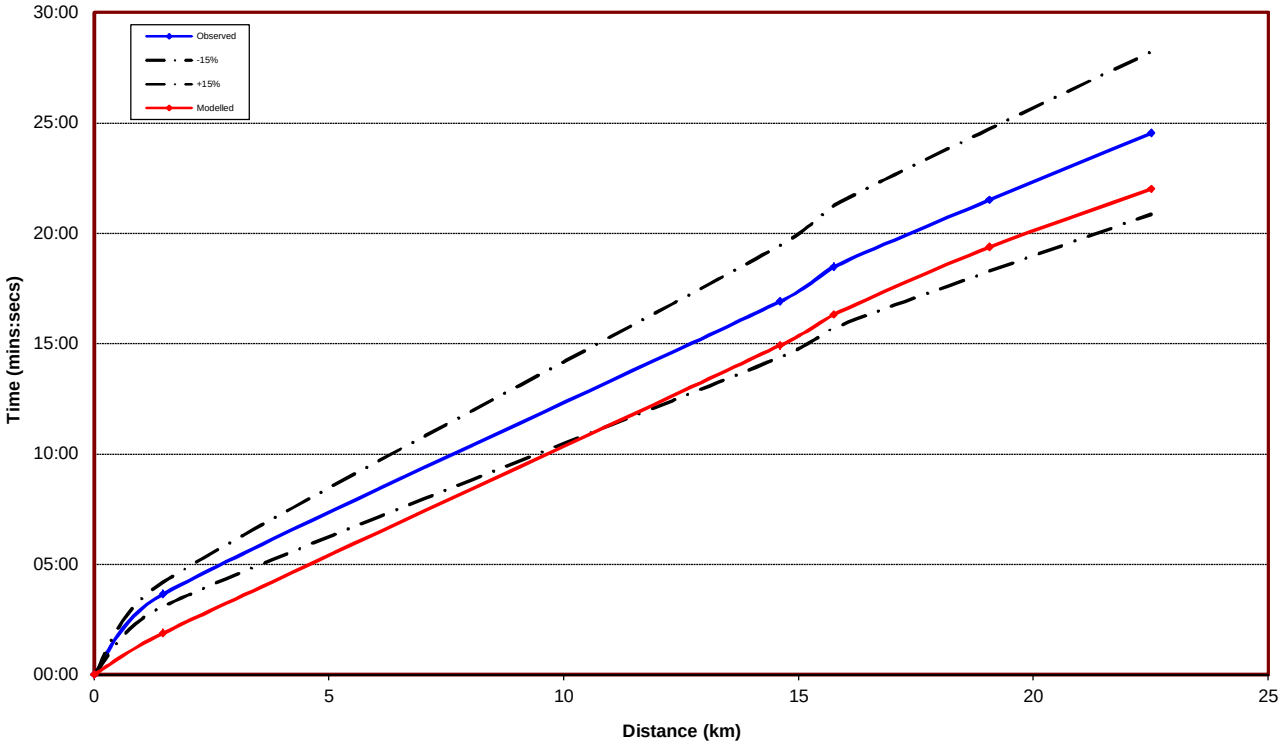


Figure F.12: Journey time – Route 6 Southbound (06:00-07:00)

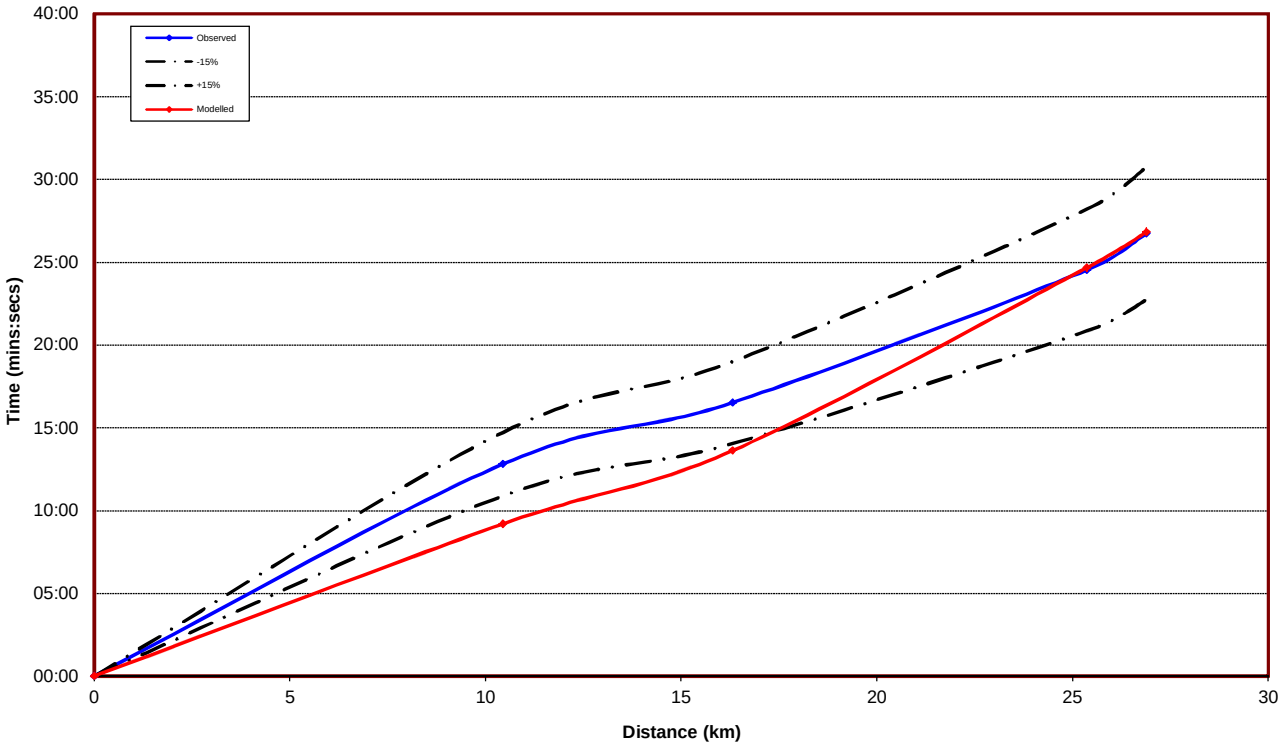


Figure F.13: Journey time - Route 7 Northbound (06:00-07:00)

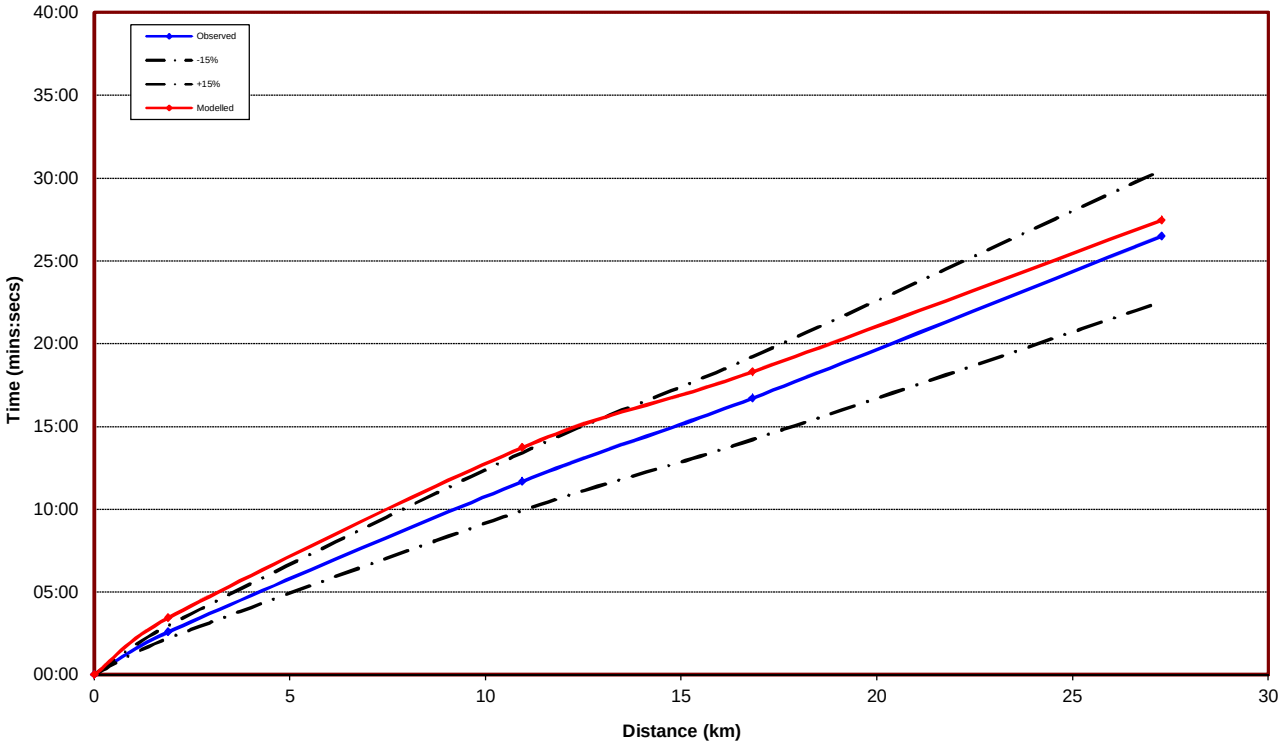


Figure F.14: Journey time - Route 7 Southbound (06:00-07:00)

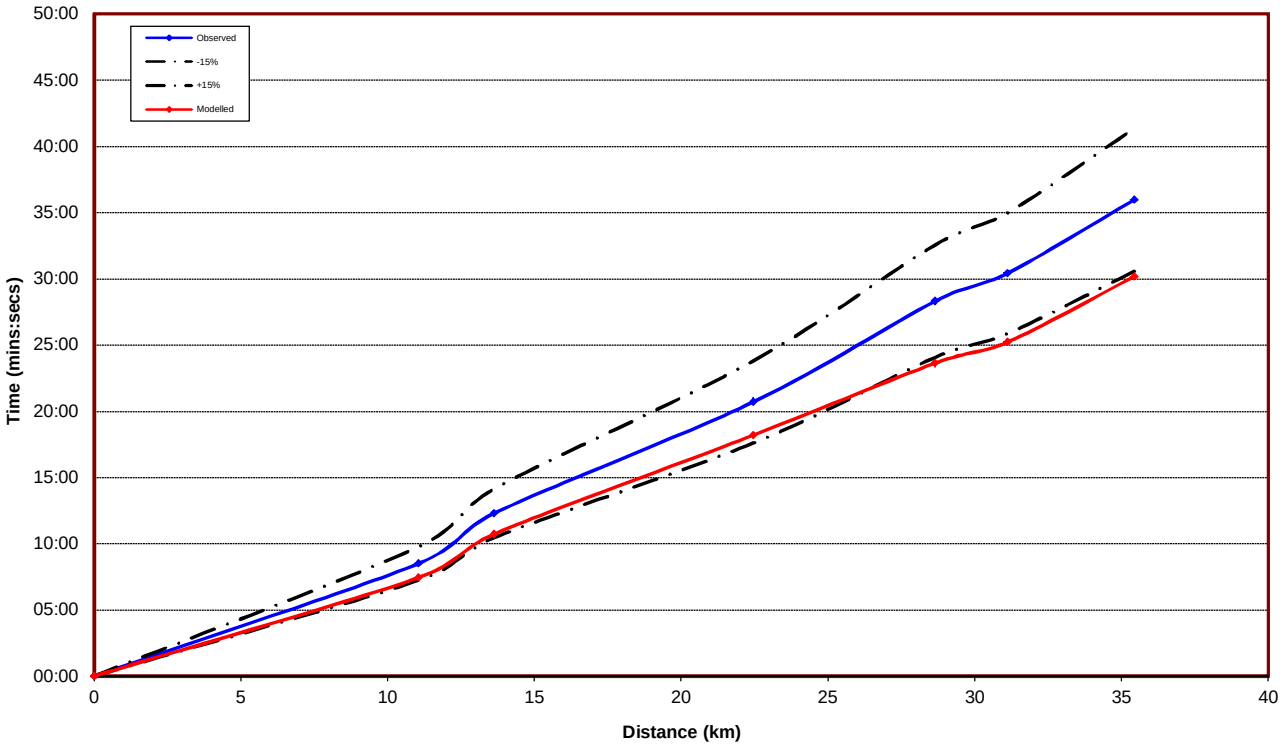


Figure F.15: Journey time - Route 8 Northbound (06:00-07:00)

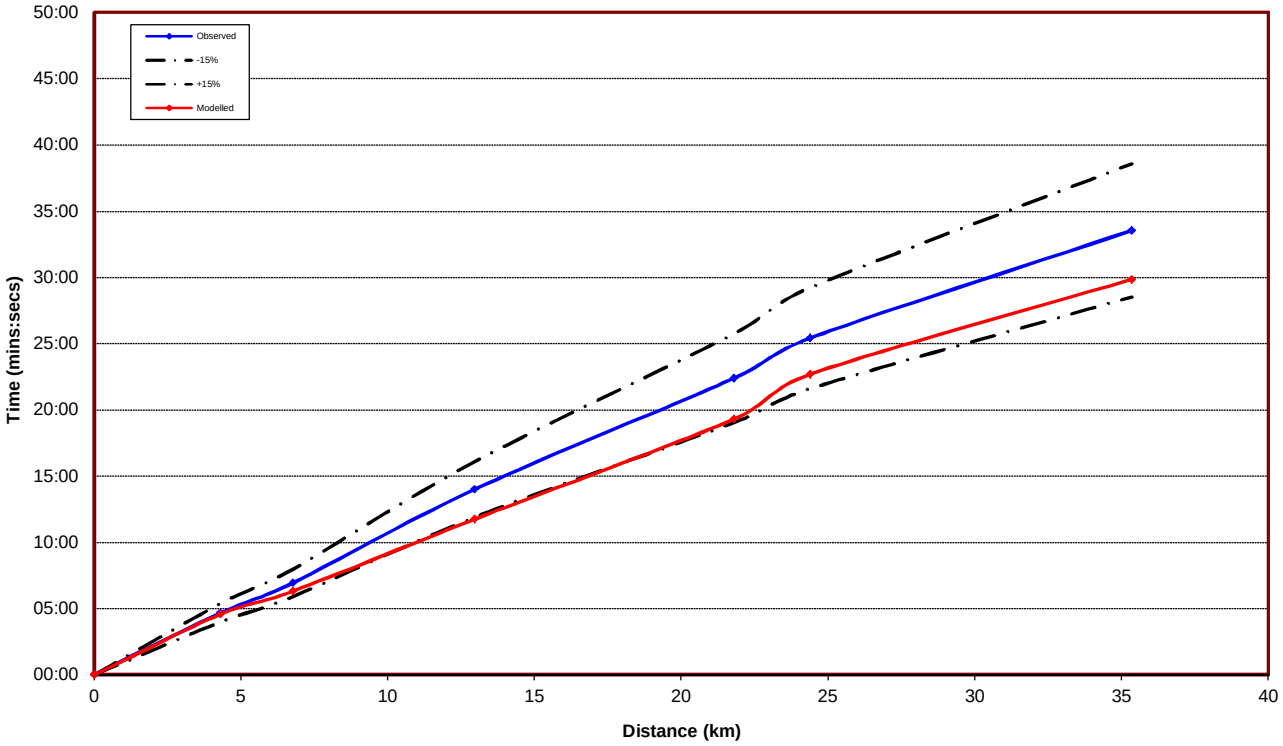


Figure F.16: Journey time – Route 8 Southbound (06:00-07:00)

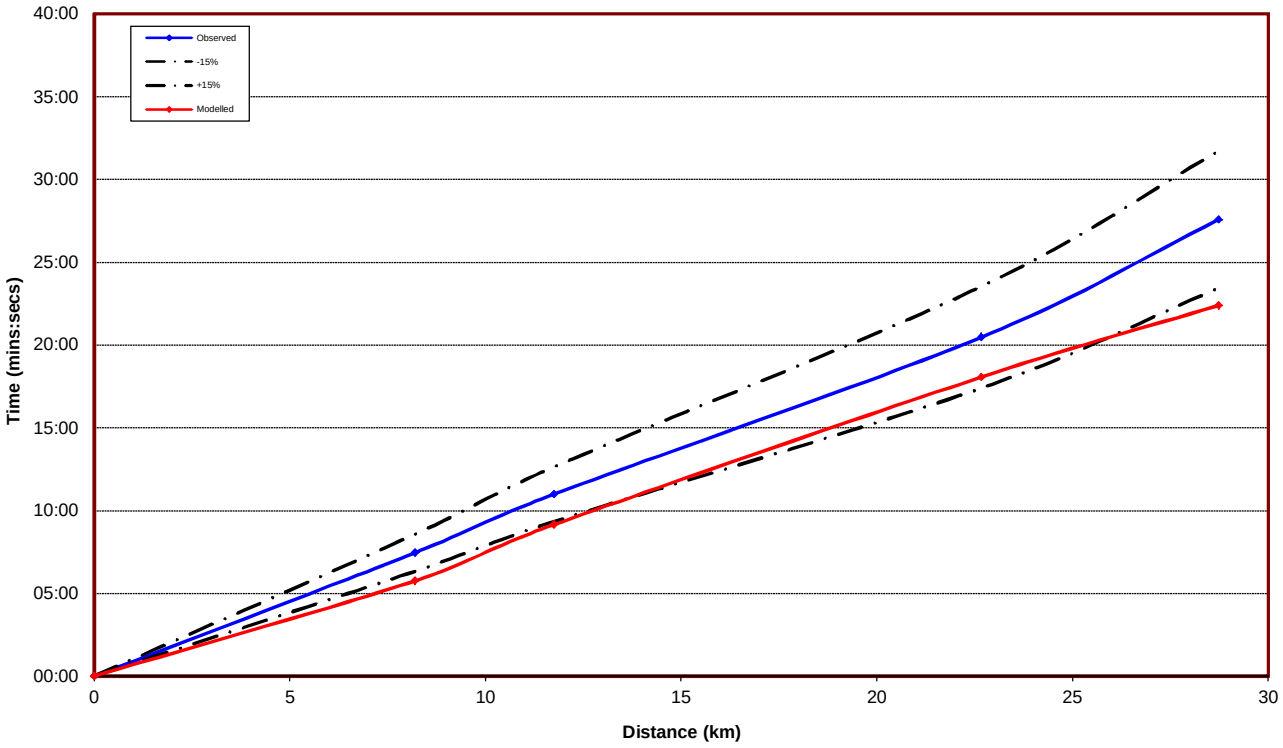


Figure F.17: Journey time – Route 9 Eastbound (06:00-07:00)

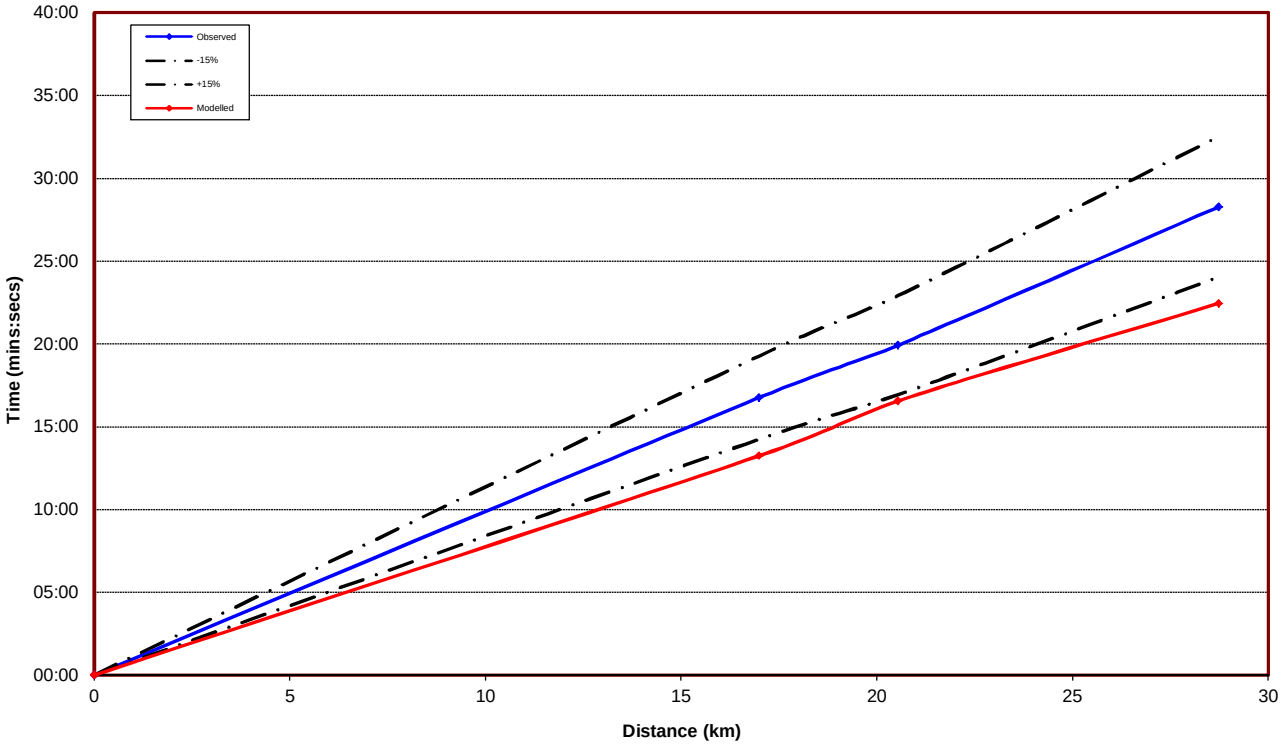


Figure F.18: Journey time – Route 9 Westbound (06:00-07:00)

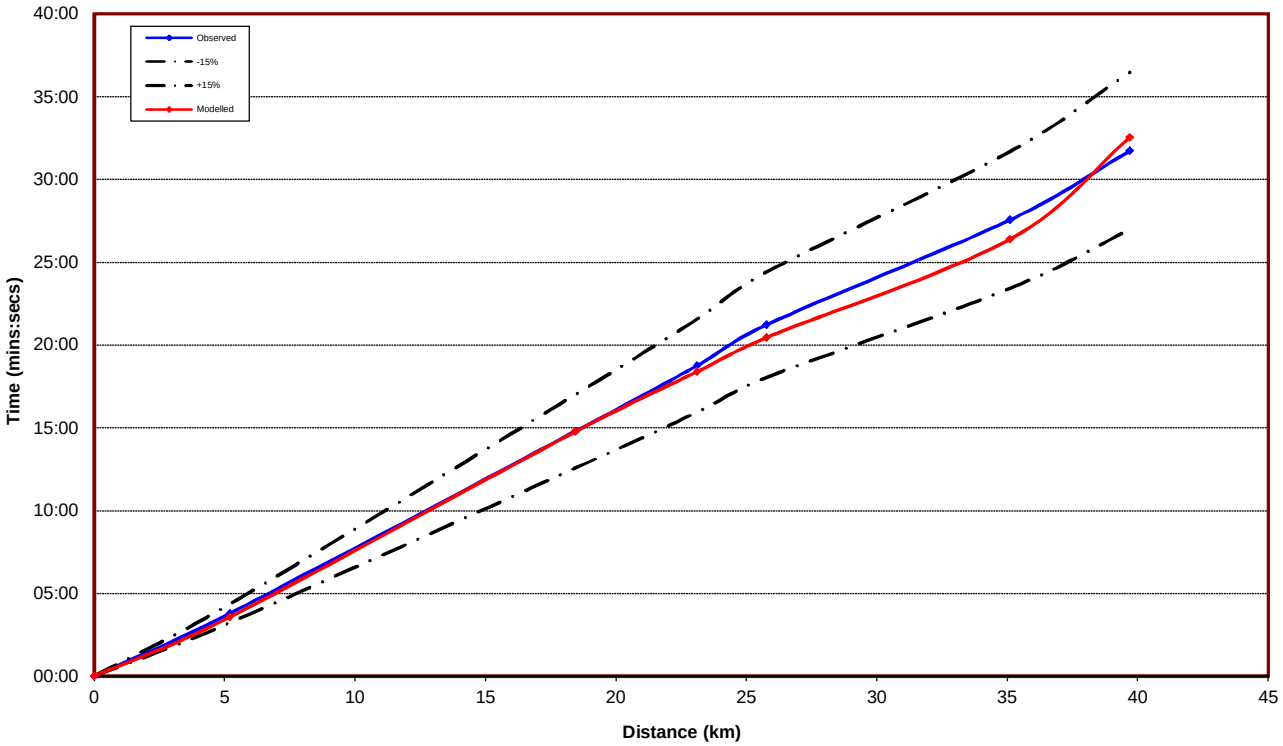


Figure F.19: Journey time – Route 10 Northbound (06:00-07:00)

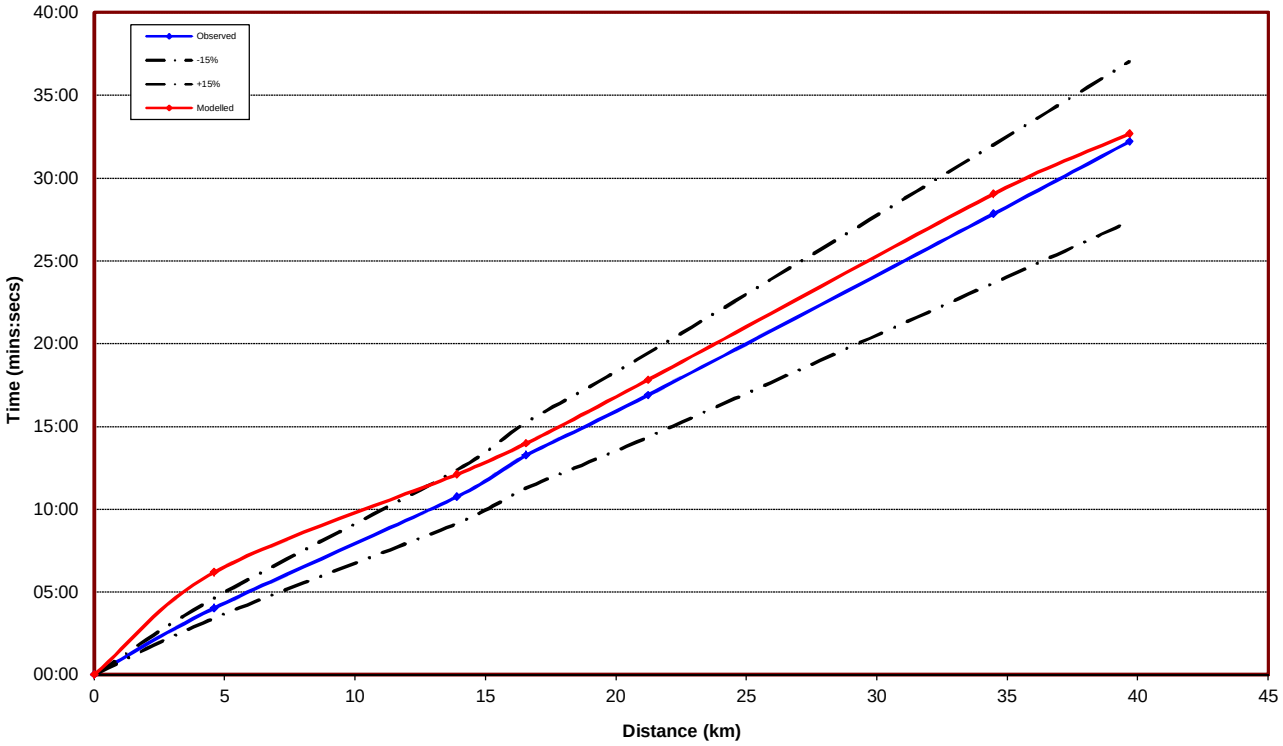


Figure F.20: Journey time – Route 10 Southbound (06:00-07:00)

Journey time validation graphs (07:00-08:00)

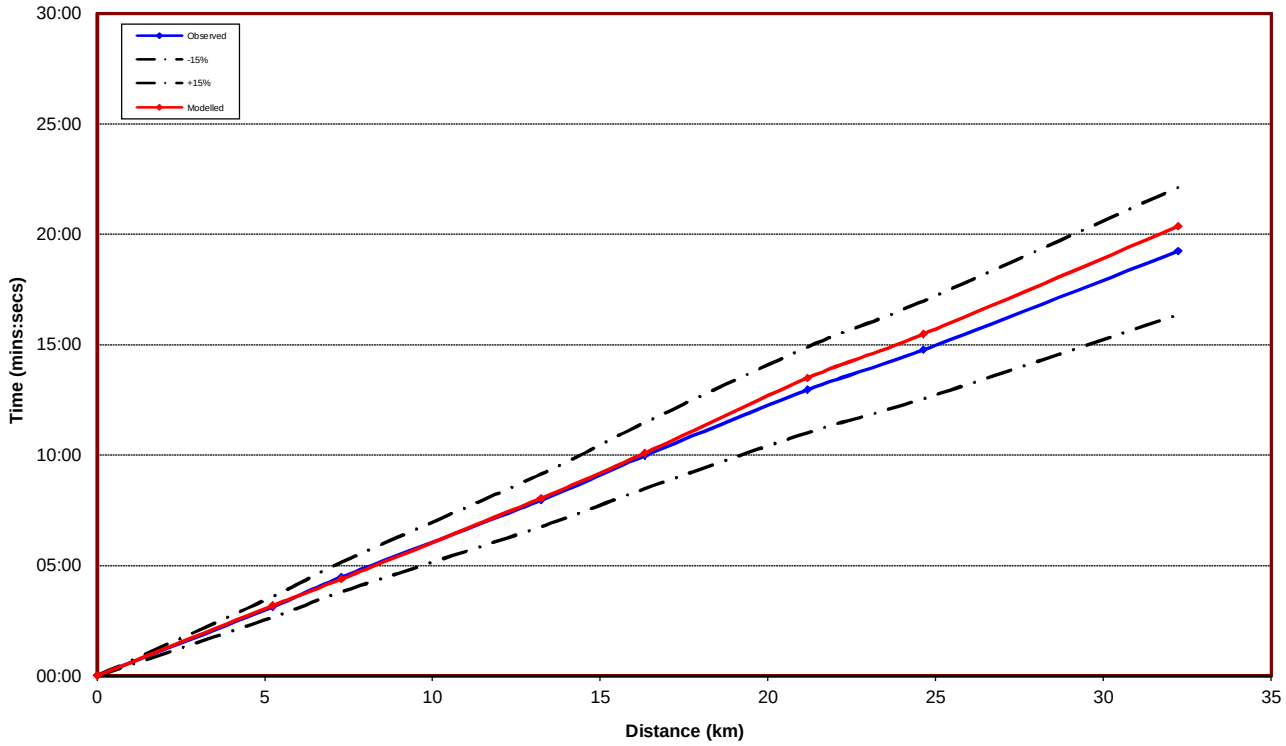


Figure F.21: Journey time – Route 1 Eastbound (07:00-08:00)

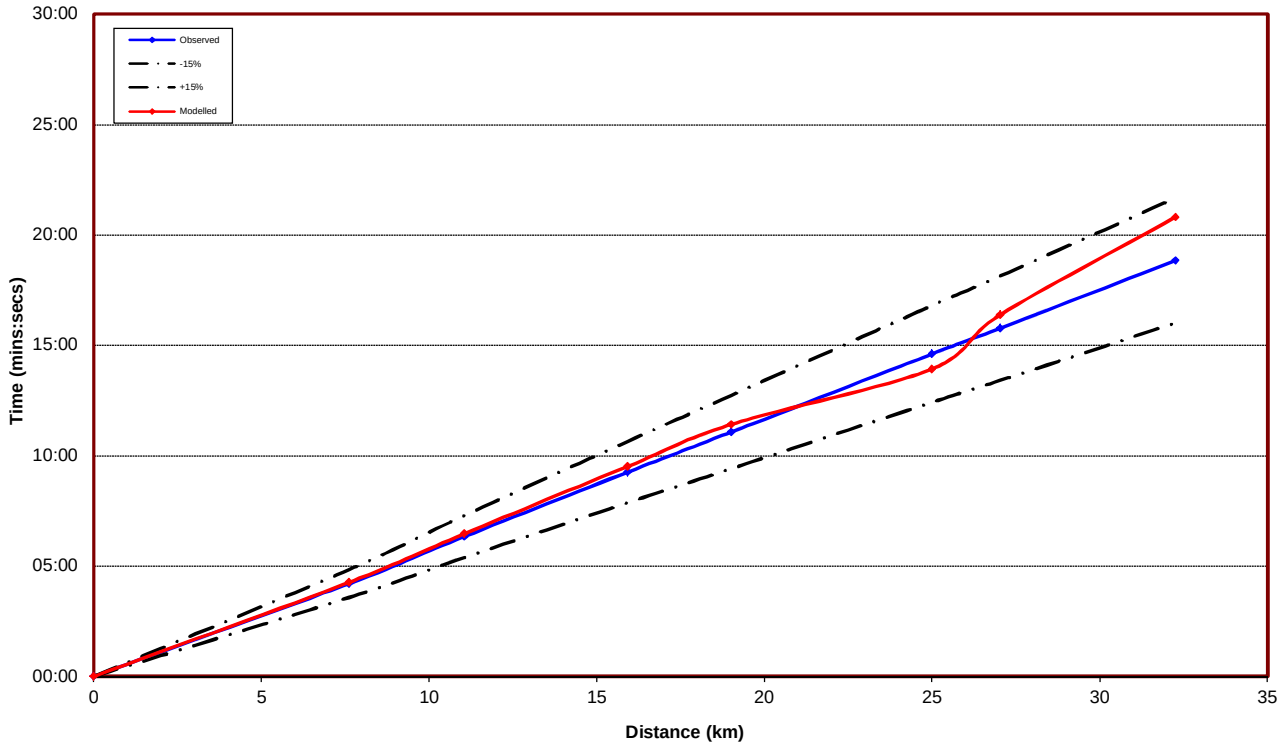


Figure F.22: Journey time – Route 1 Westbound (07:00-08:00)

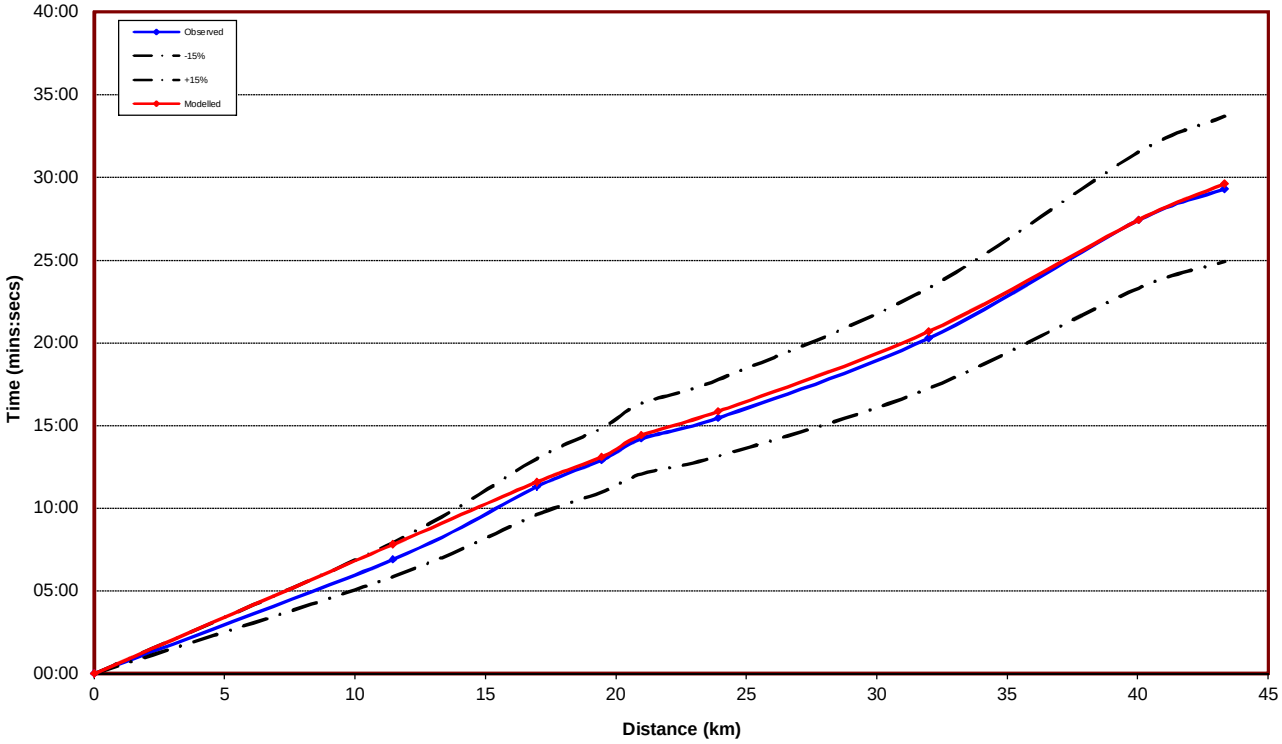


Figure F.23: Journey time – Route 2 Northbound (07:00-08:00)

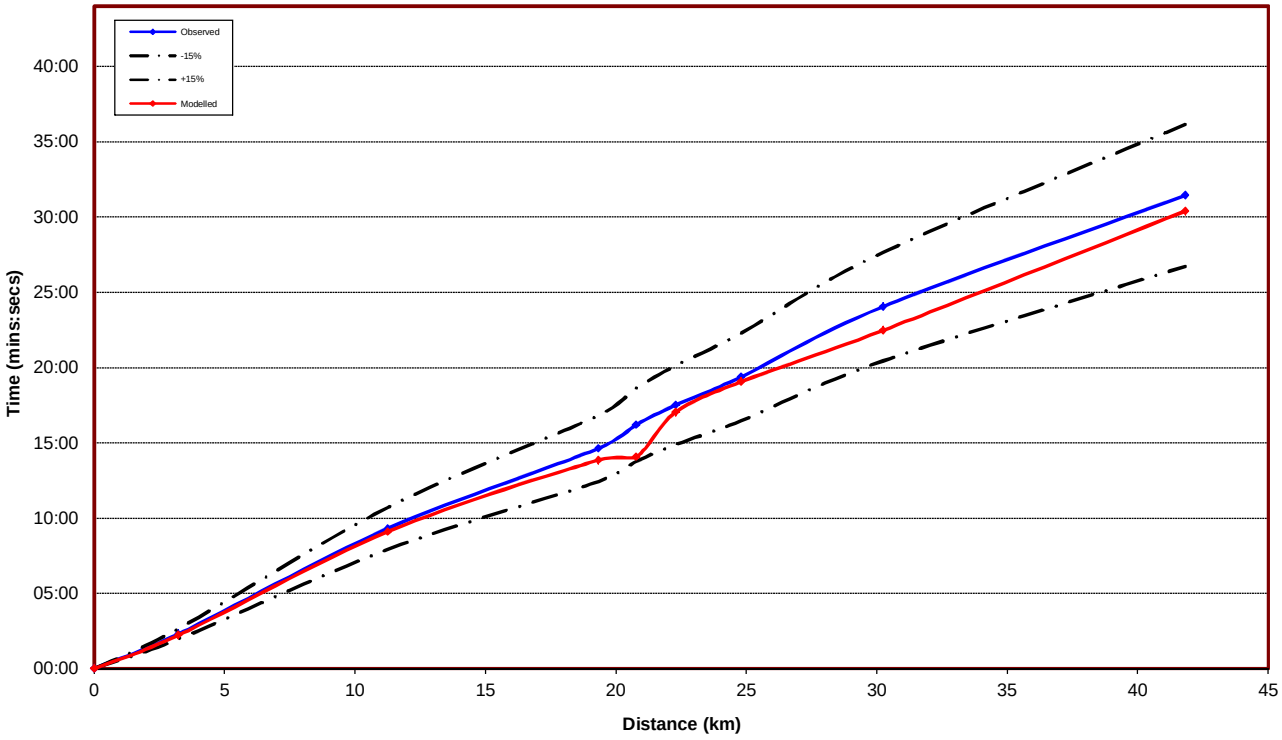


Figure F.24: Journey time – Route 2 Southbound (07:00-08:00)

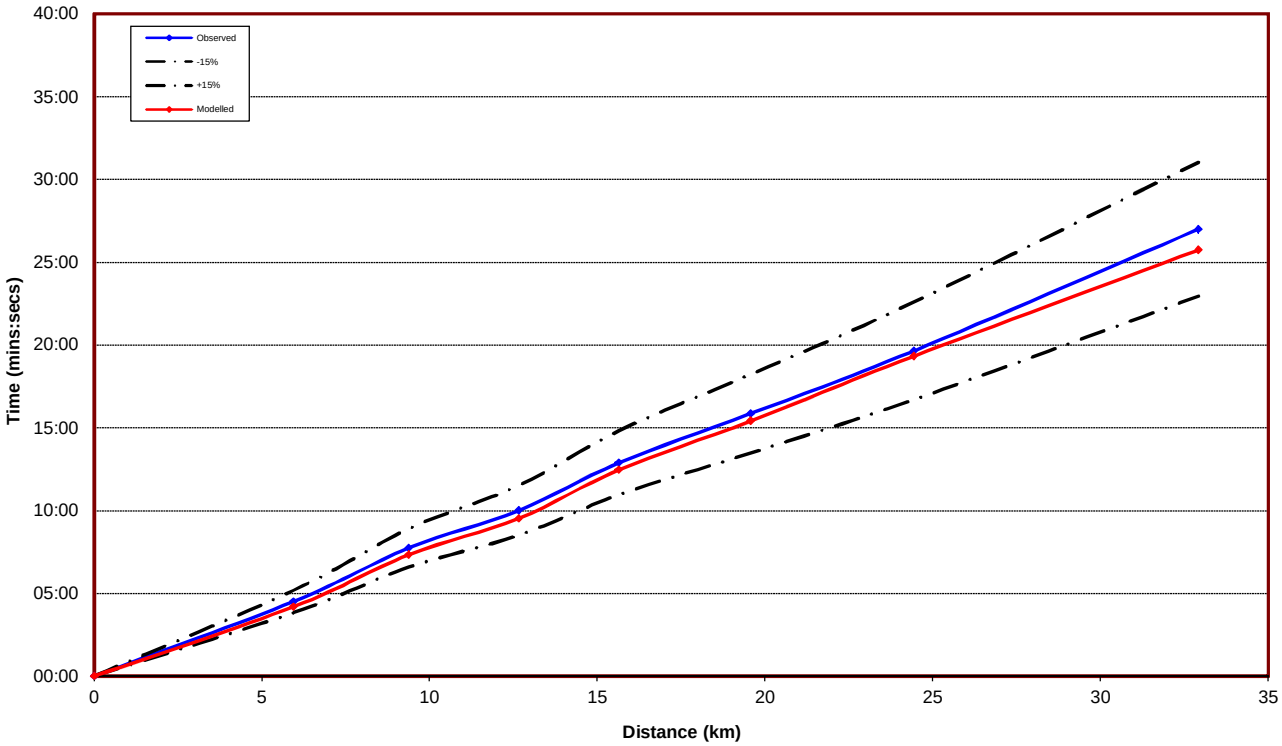


Figure F.25: Journey time – Route 3 Northbound (07:00-08:00)

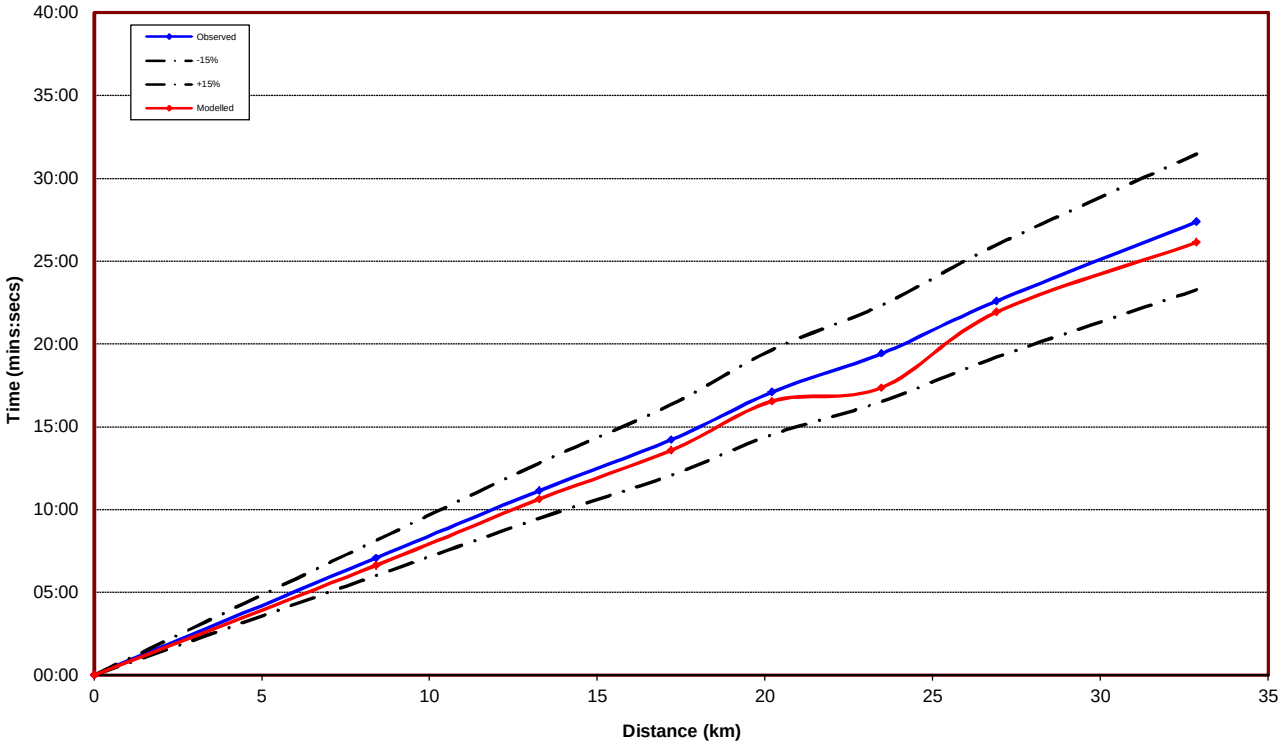


Figure F.26: Journey time – Route 3 Southbound (07:00-08:00)

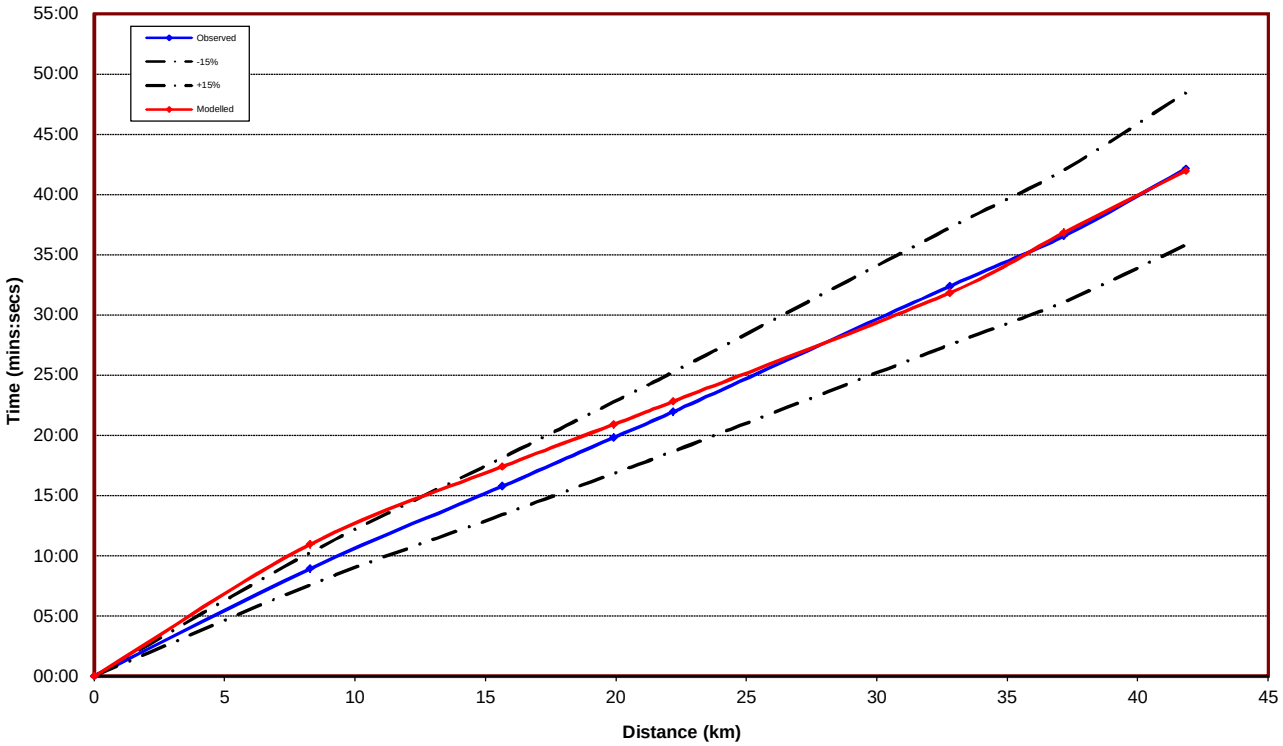


Figure F.27: Journey time – Route 4 Eastbound (07:00-08:00)

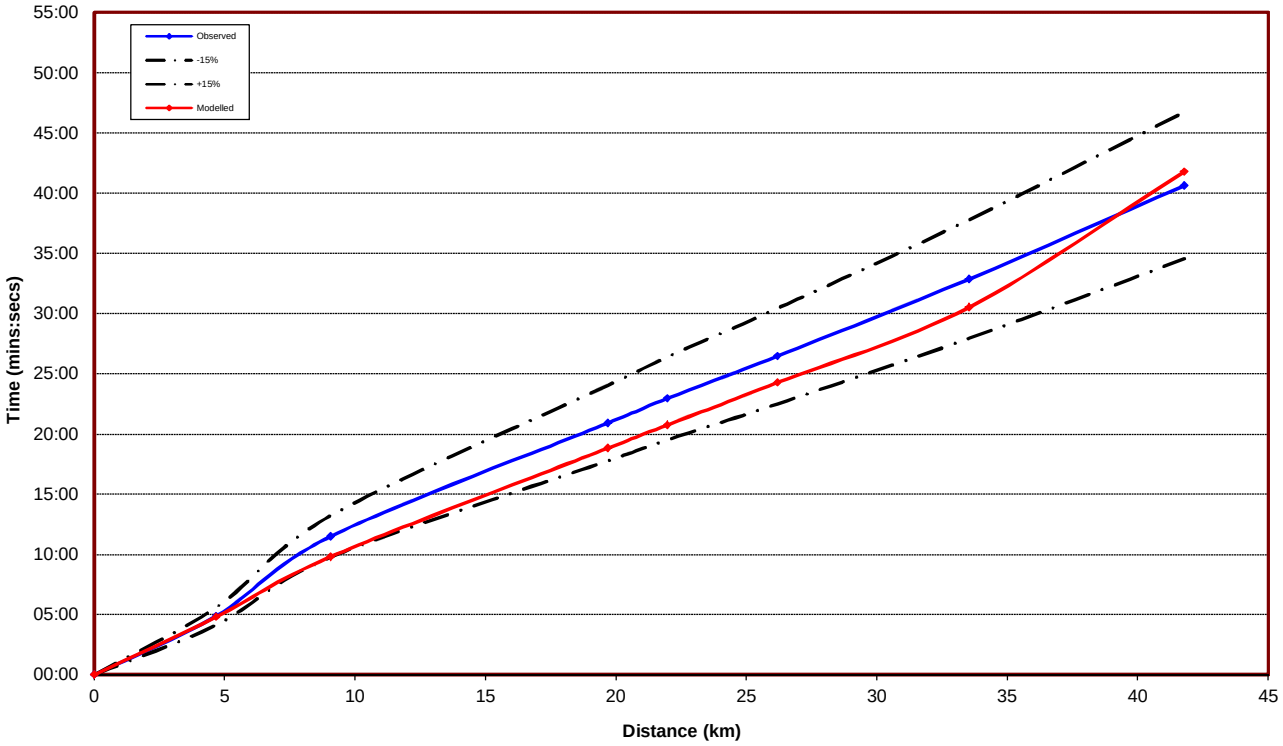


Figure F.28: Journey time – Route 4 Westbound (07:00-08:00)

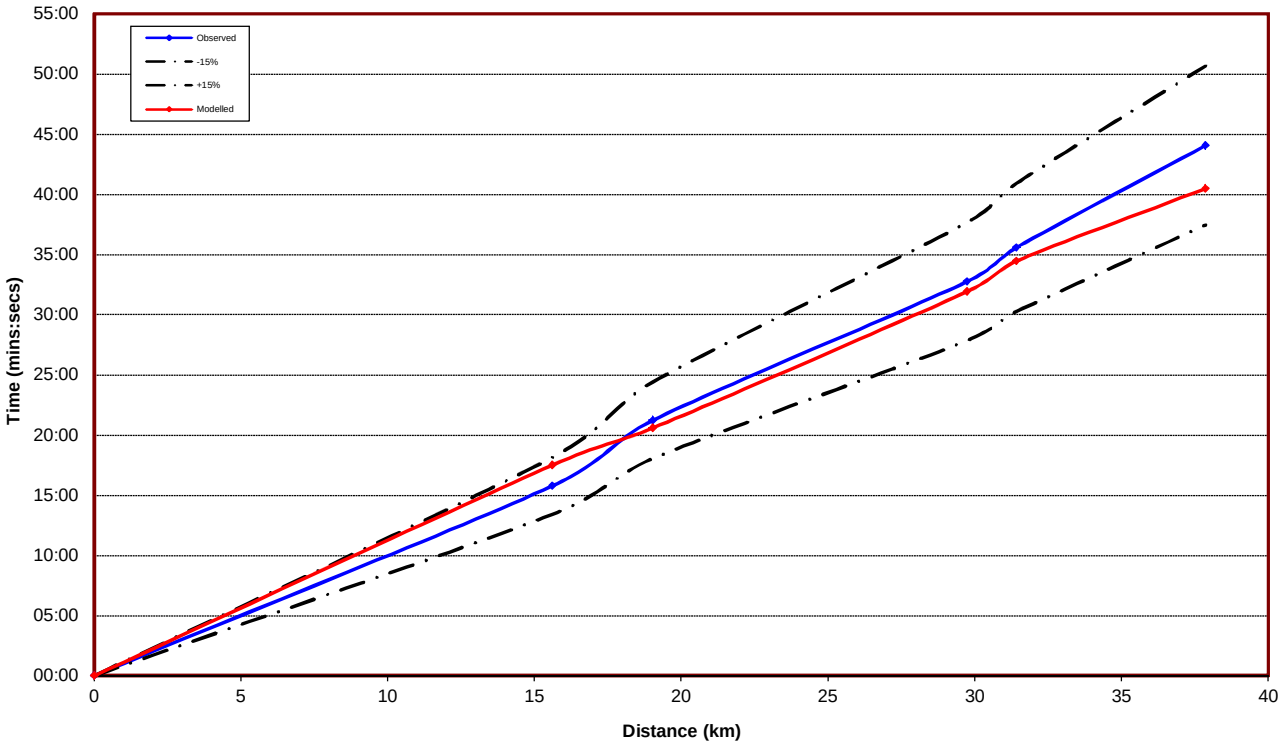


Figure F.29: Journey time – Route 5 Eastbound (07:00-08:00)

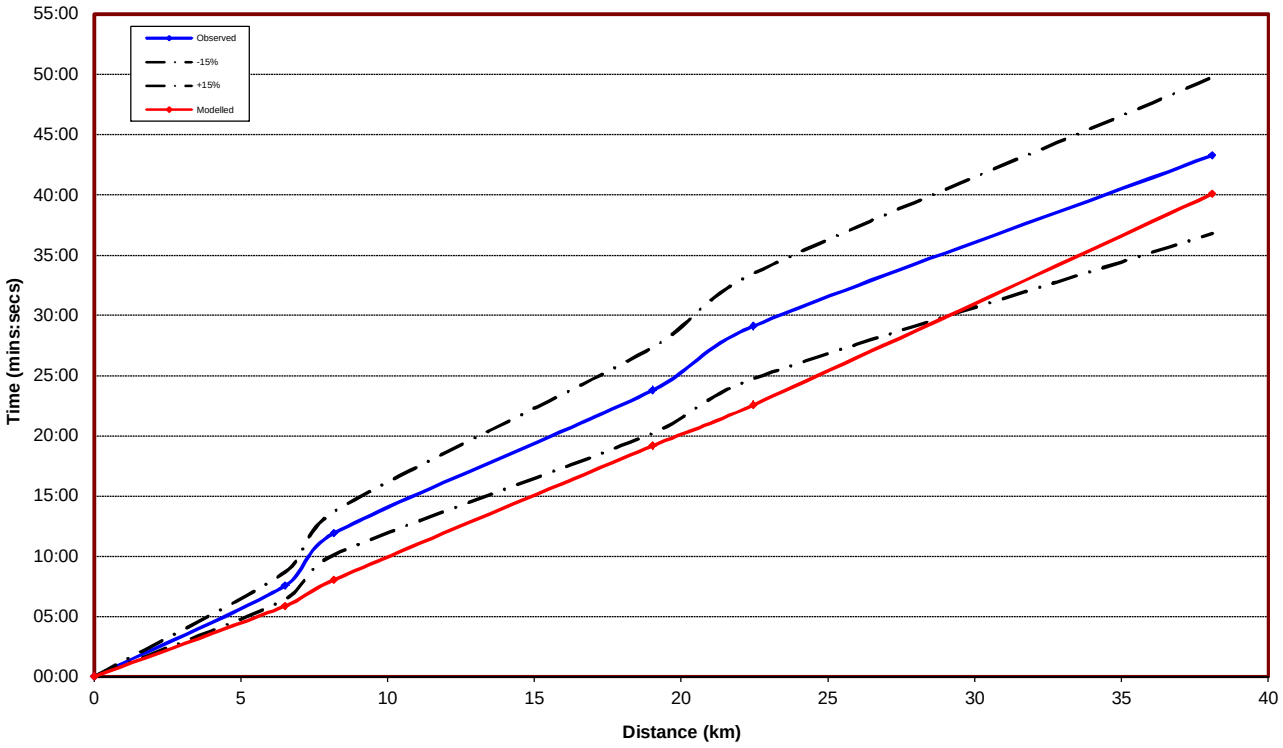


Figure F.30: Journey time – Route 5 Westbound (07:00-08:00)

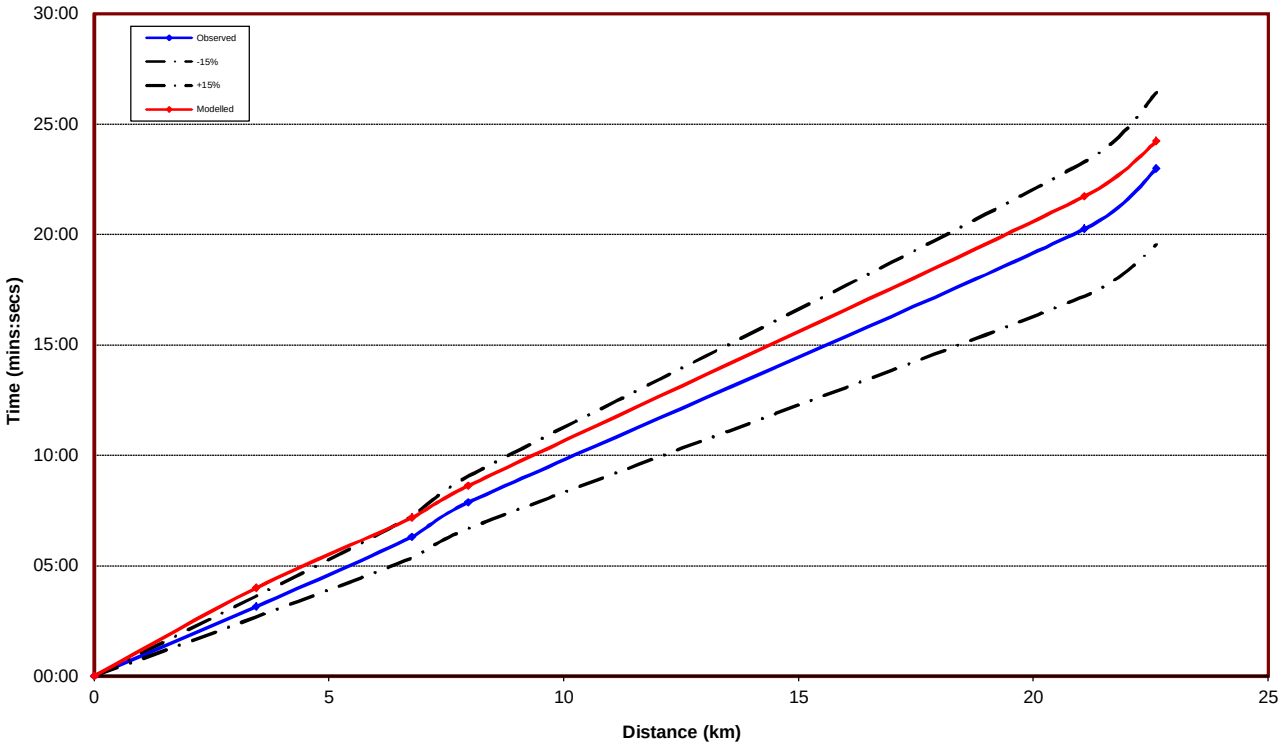


Figure F.31: Journey time – Route 6 Northbound (07:00-08:00)

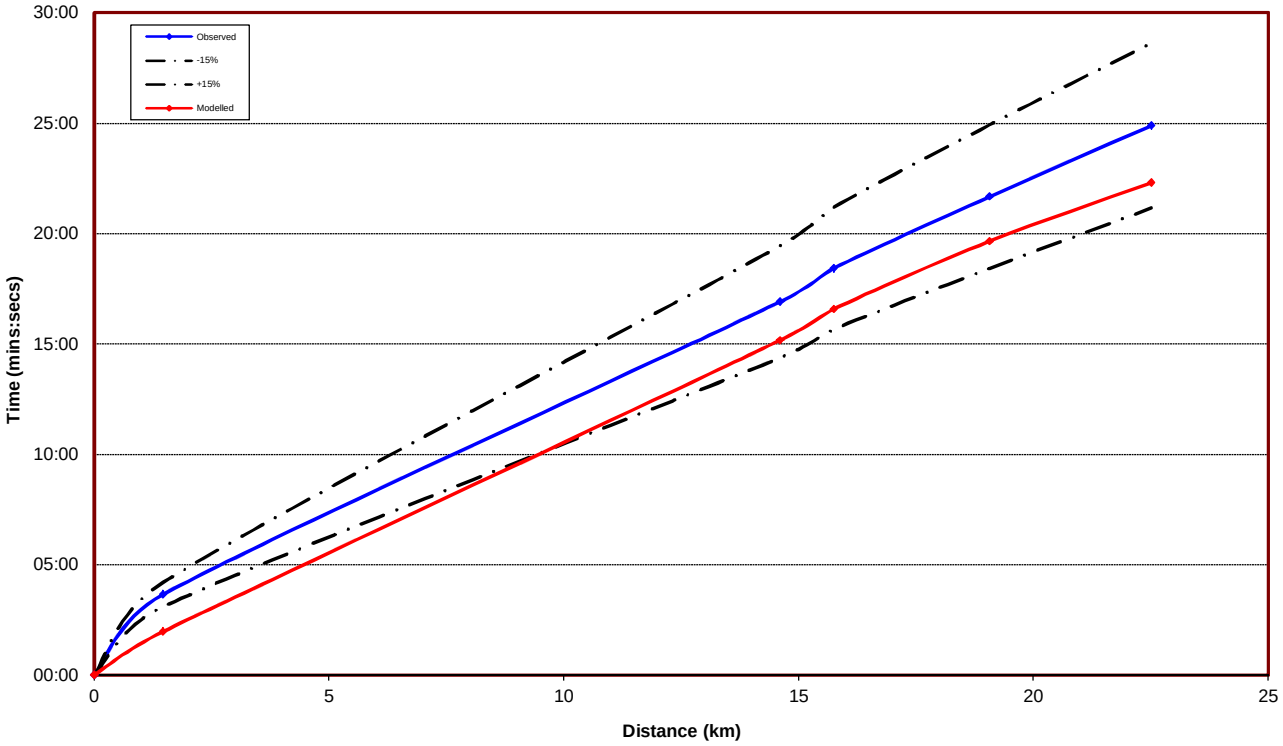


Figure F.32: Journey time – Route 6 Southbound (07:00-08:00)

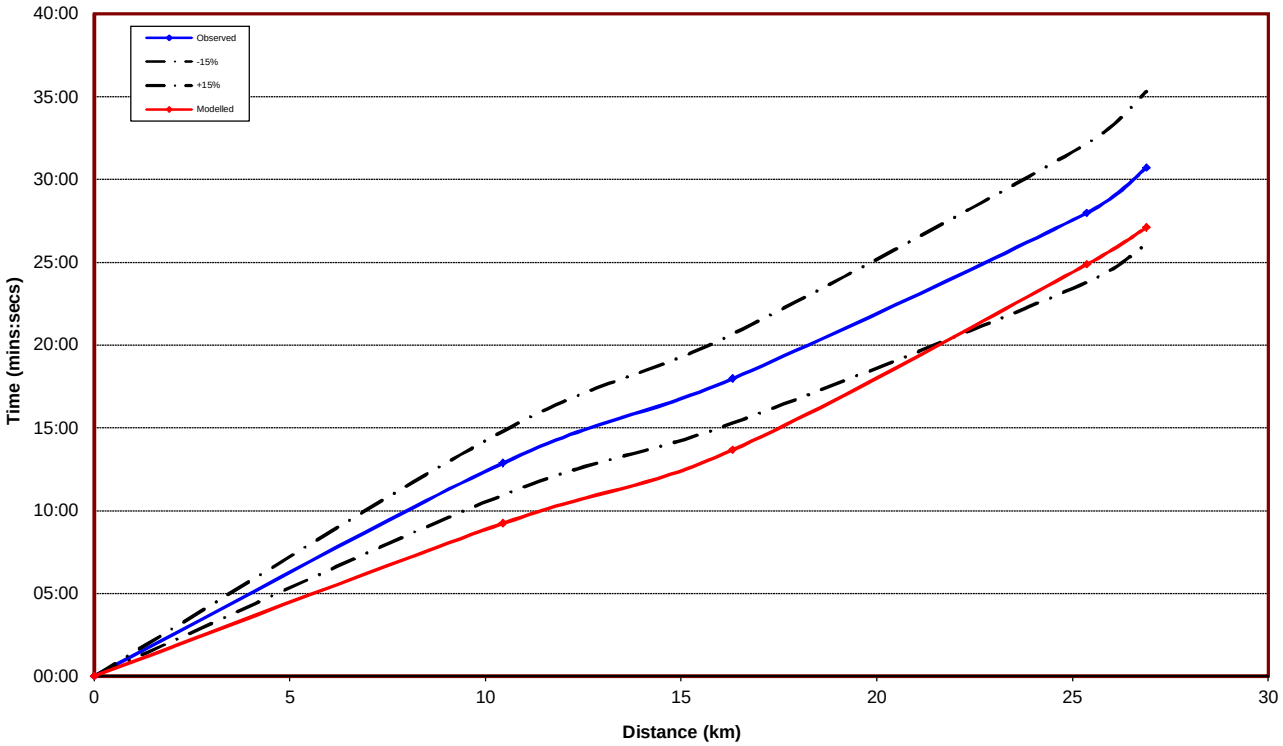


Figure F.33: Journey time – Route 7 Northbound (07:00-08:00)

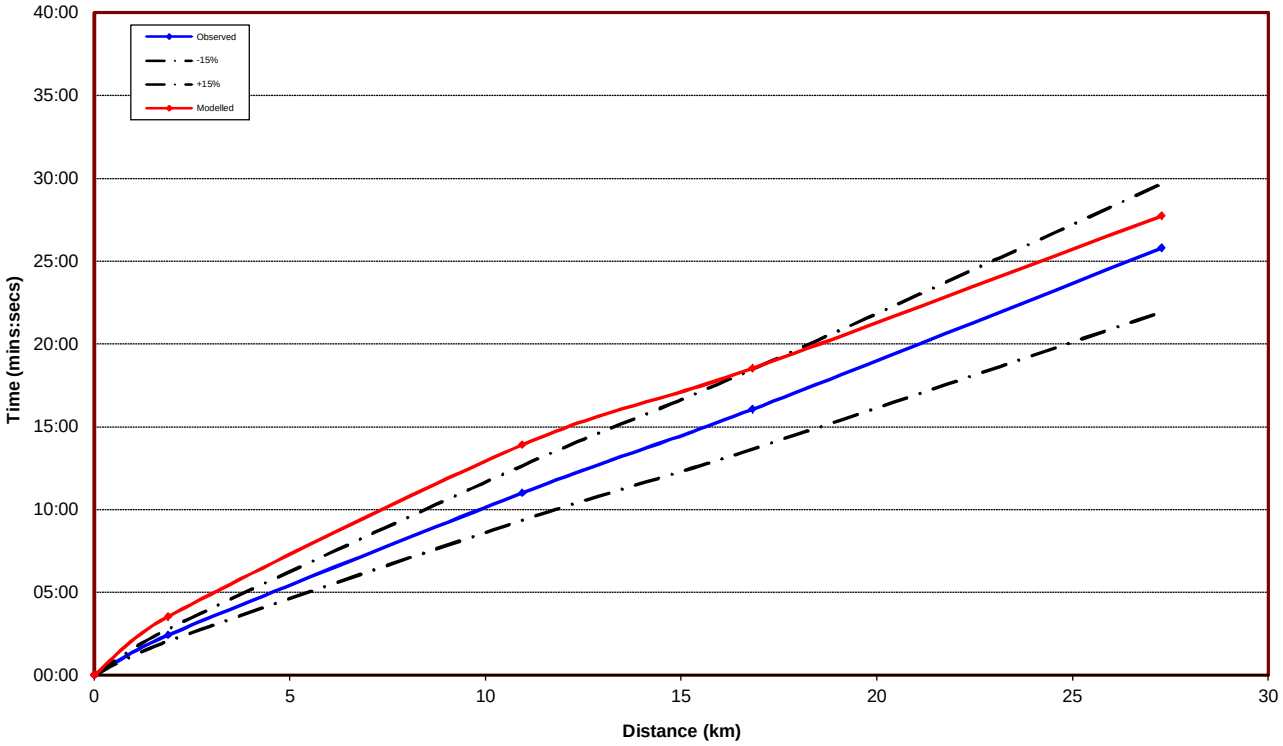


Figure F.34: Journey time – Route 7 Southbound (07:00-08:00)

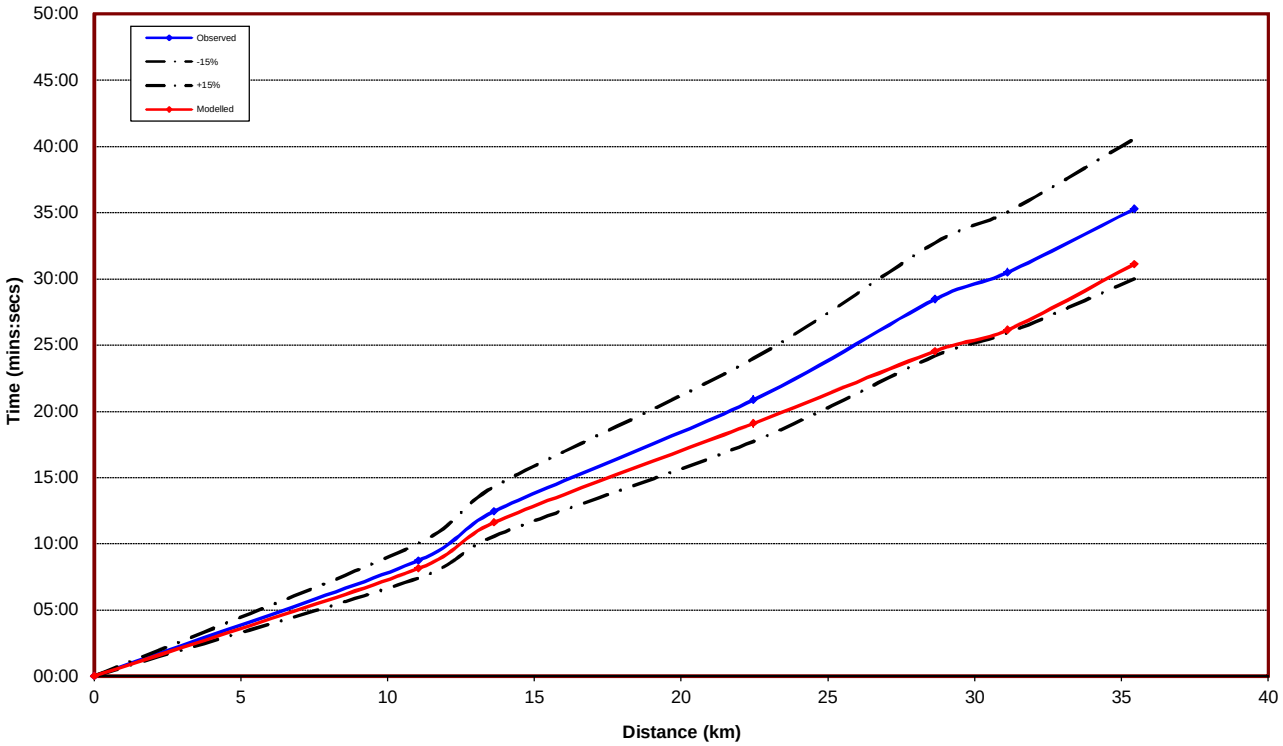


Figure F.35: Journey time – Route 8 Northbound (07:00-08:00)

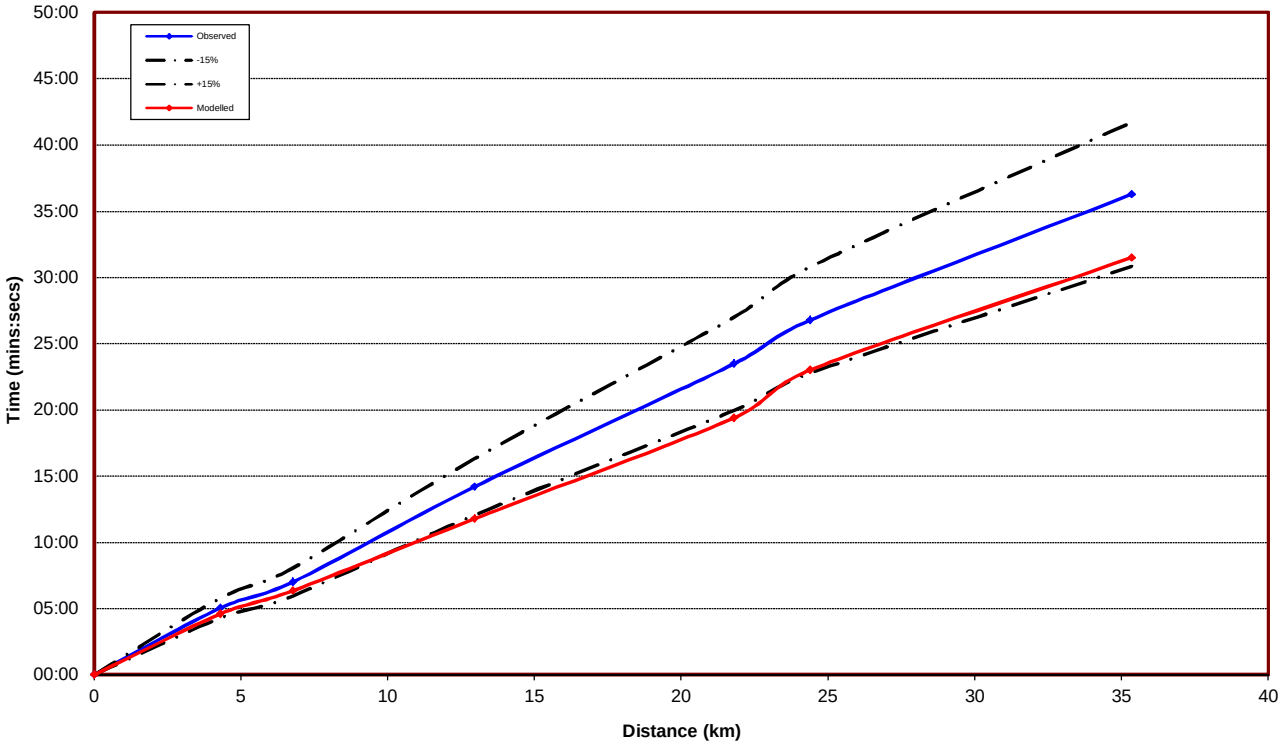


Figure F.36: Journey time – Route 8 Southbound (07:00-08:00)

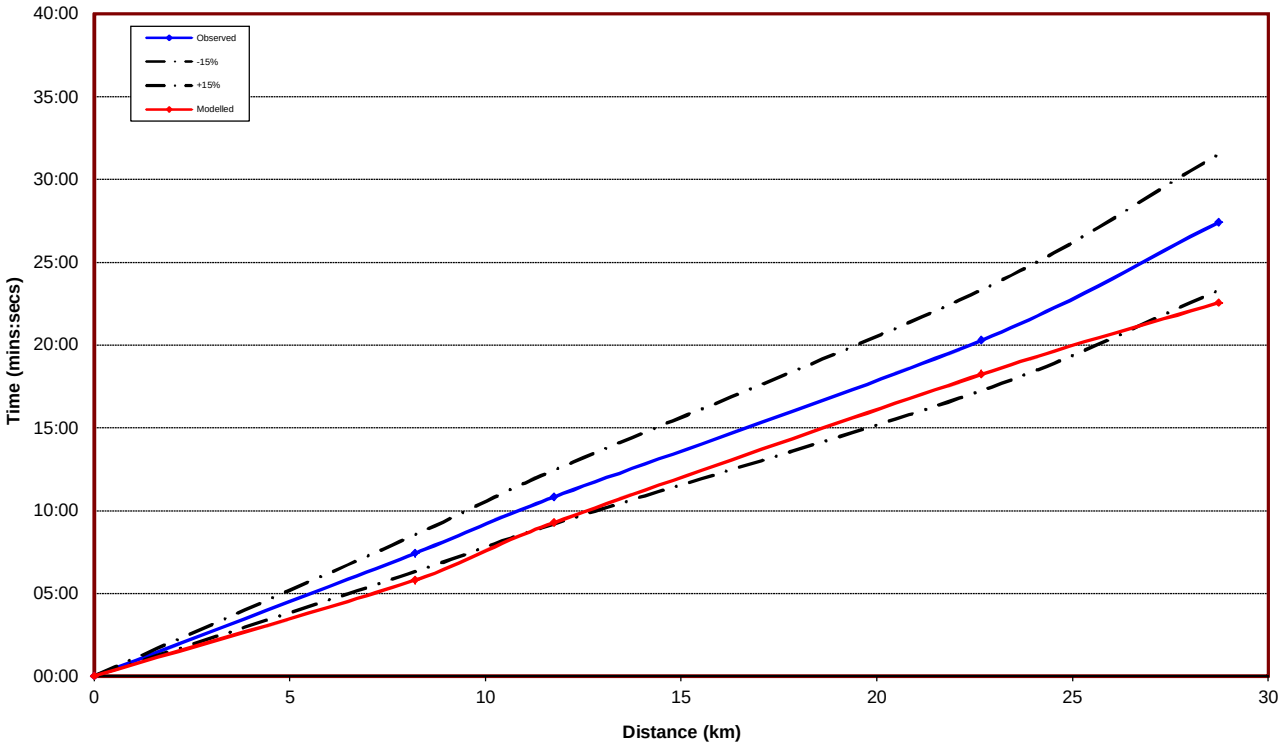


Figure F.37: Journey time – Route 9 Eastbound (07:00-08:00)

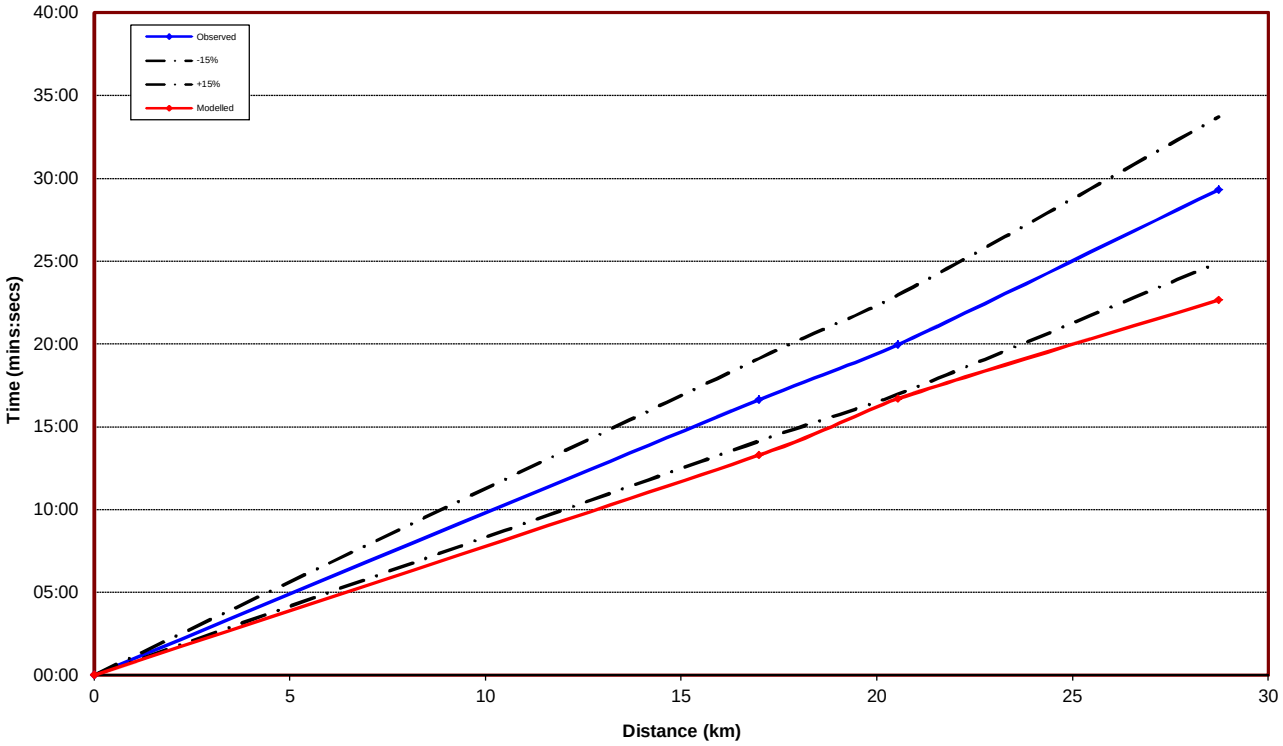


Figure F.38: Journey time – Route 9 Westbound (07:00-08:00)

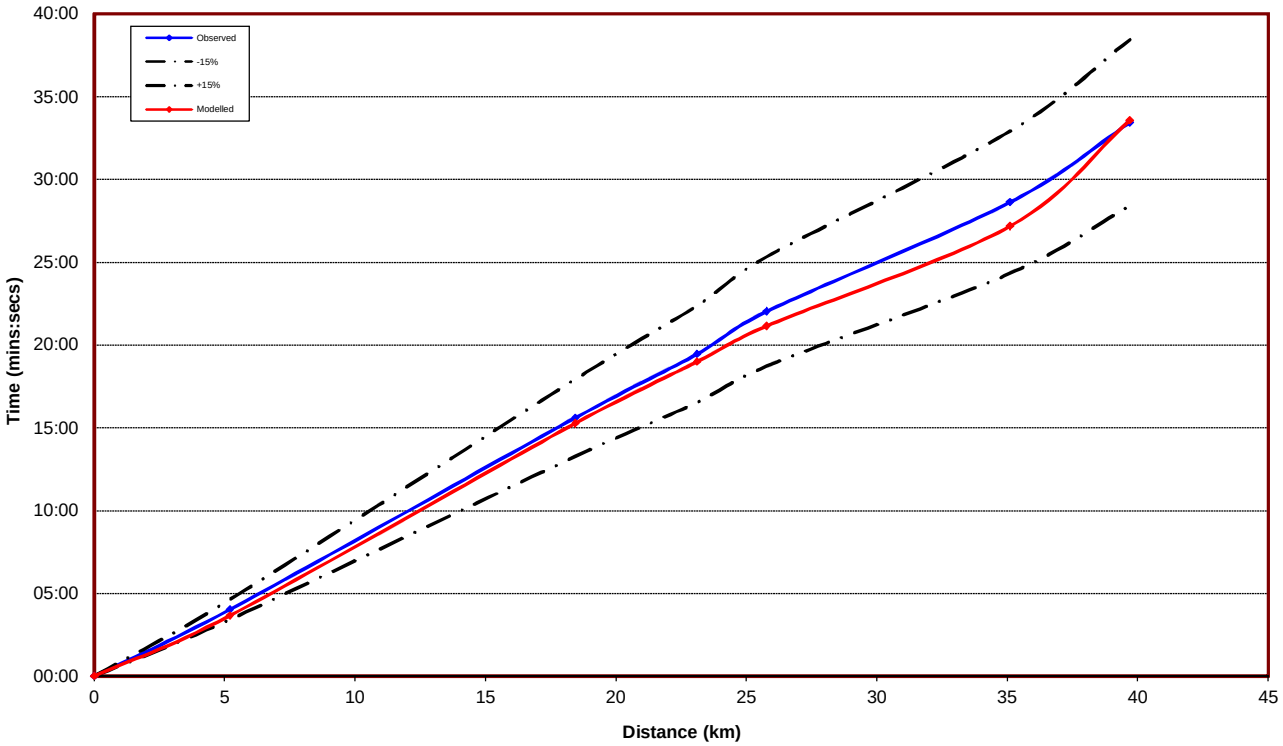


Figure F.39: Journey time – Route 10 Northbound (07:00-08:00)

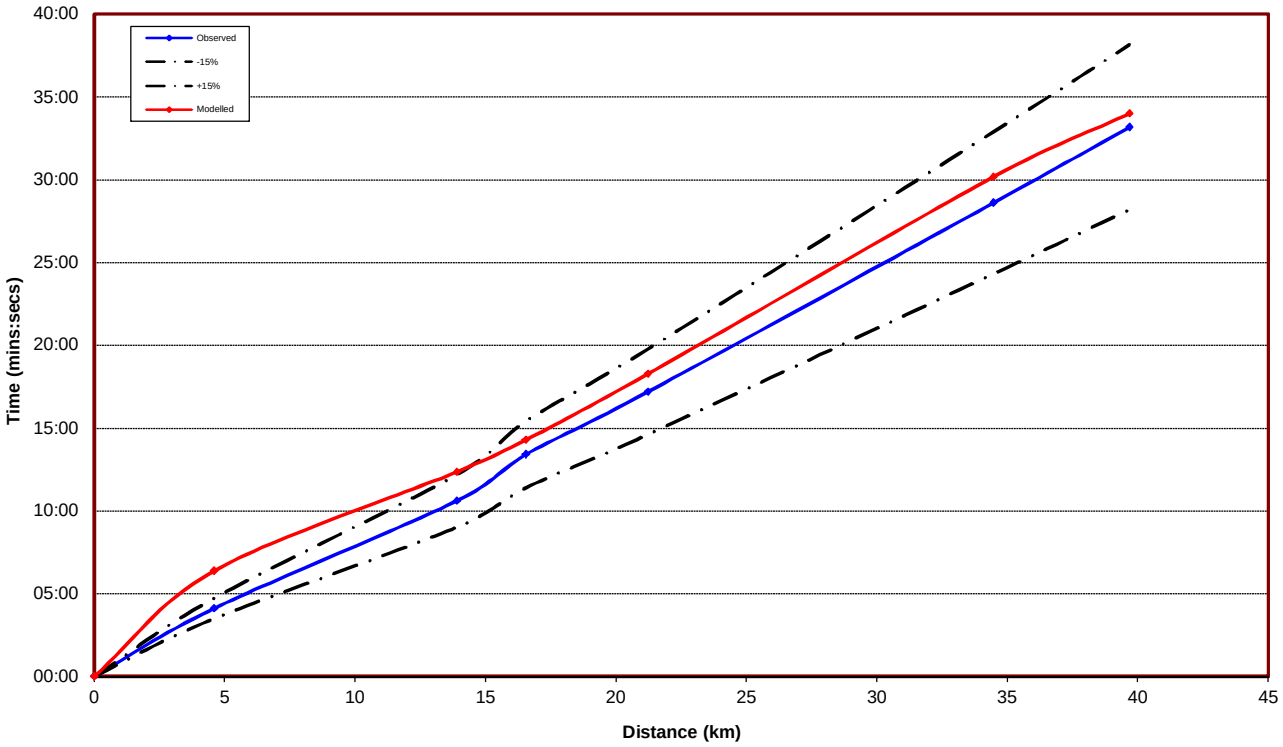


Figure F.40: Journey time – Route 10 Southbound (07:00-08:00)

Journey time validation graphs (16:00-17:00)

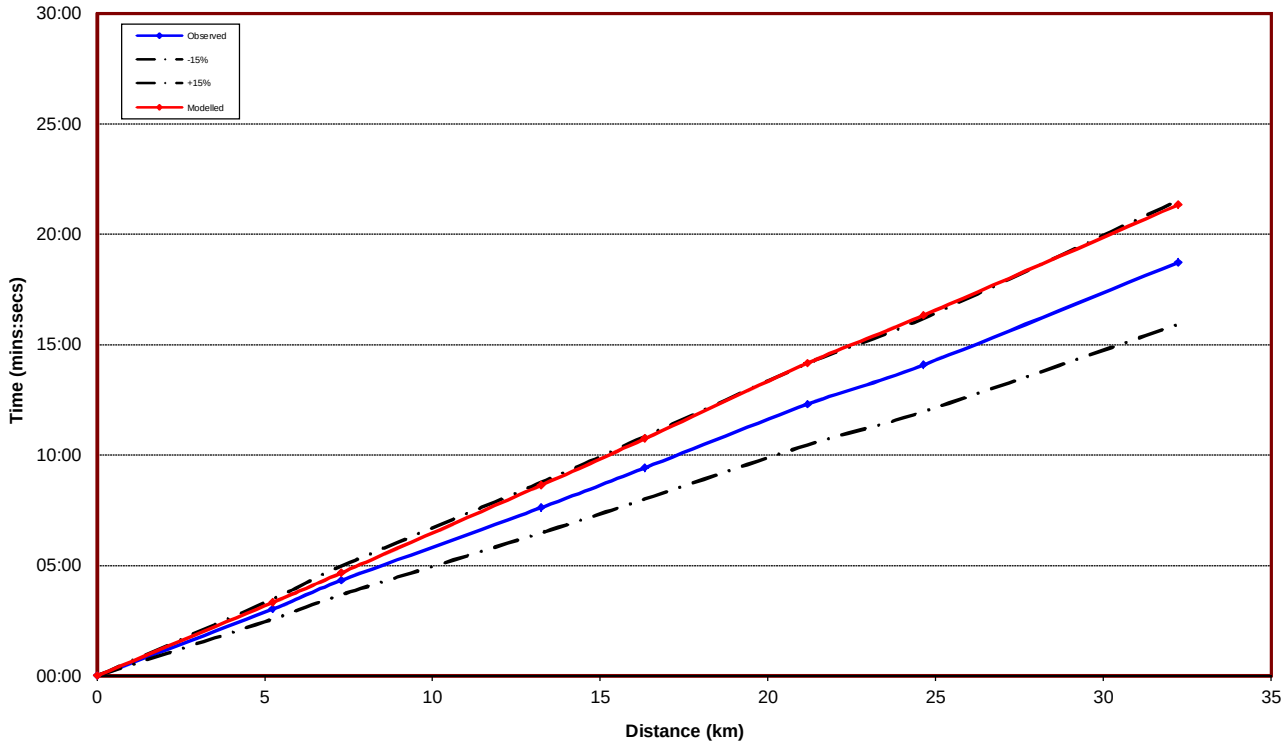


Figure F.41: Journey time – Route 1 Eastbound (16:00-17:00)

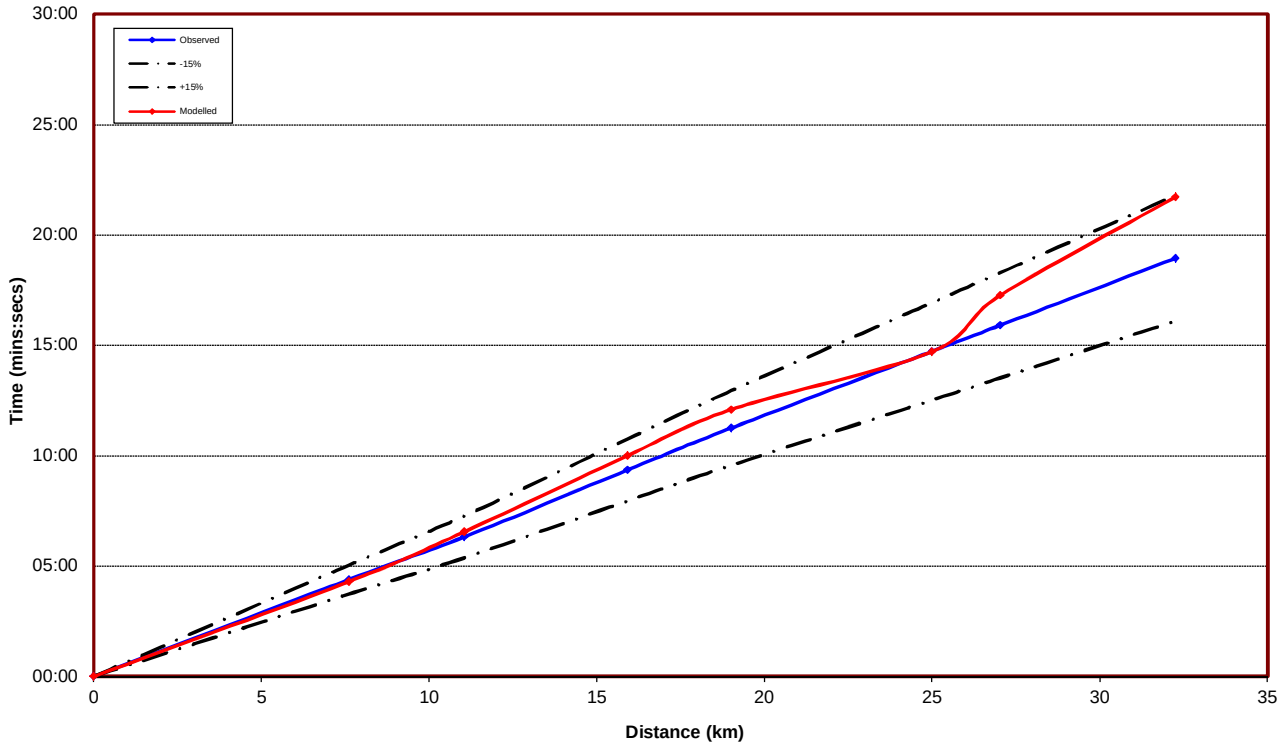


Figure F.42: Journey time – Route 1 Westbound (16:00-17:00)

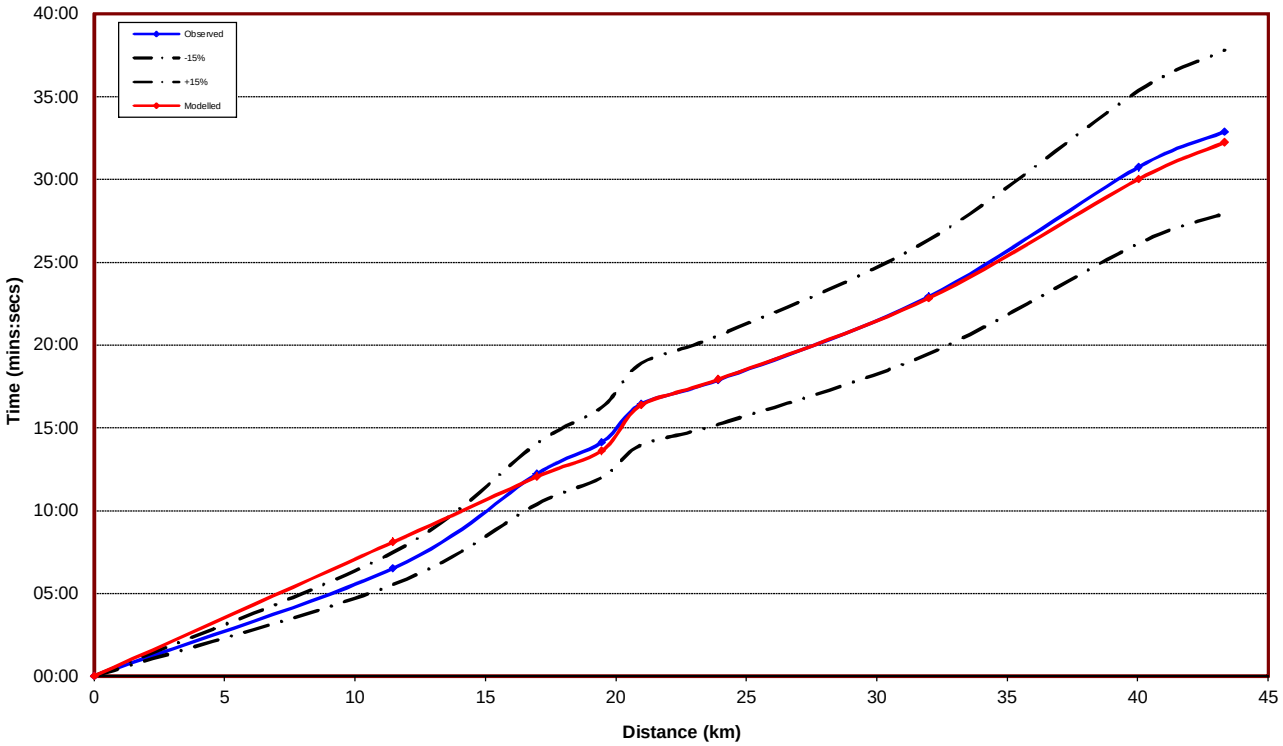


Figure F.43: Journey time – Route 2 Northbound (16:00-17:00)

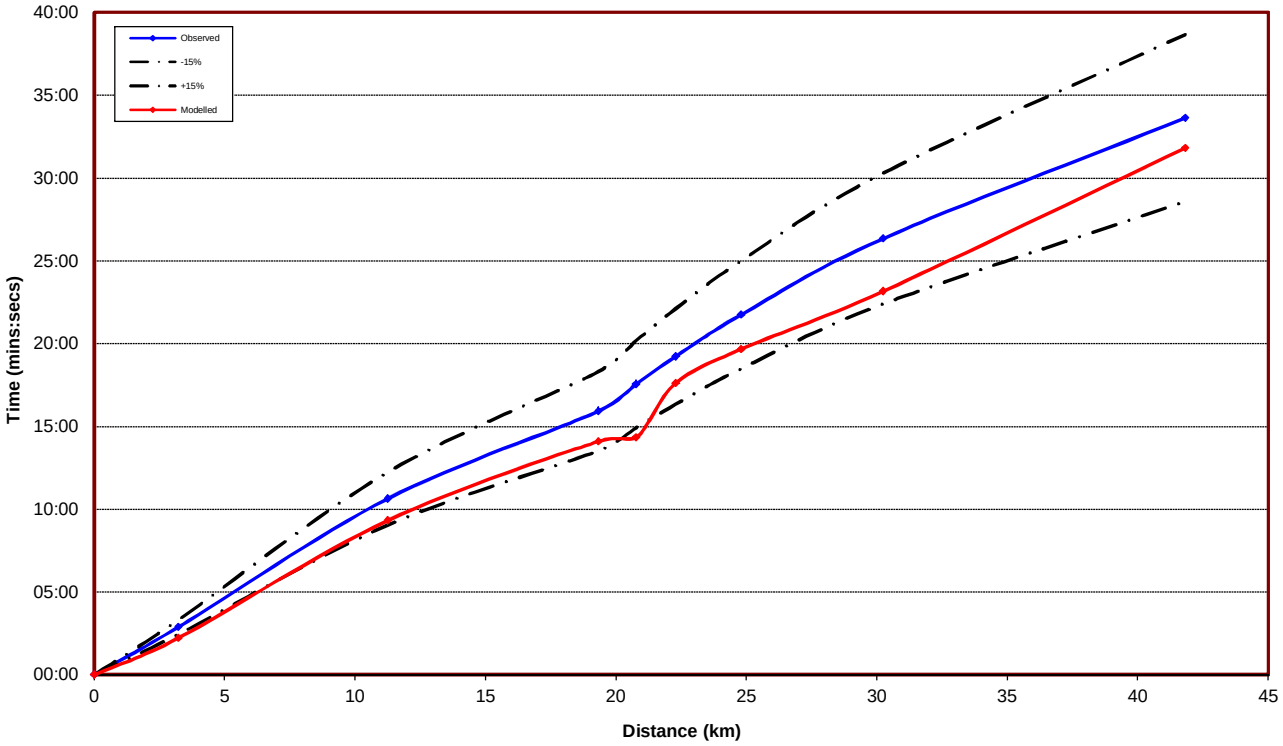


Figure F.44: Journey time – Route 2 Southbound (16:00-17:00)

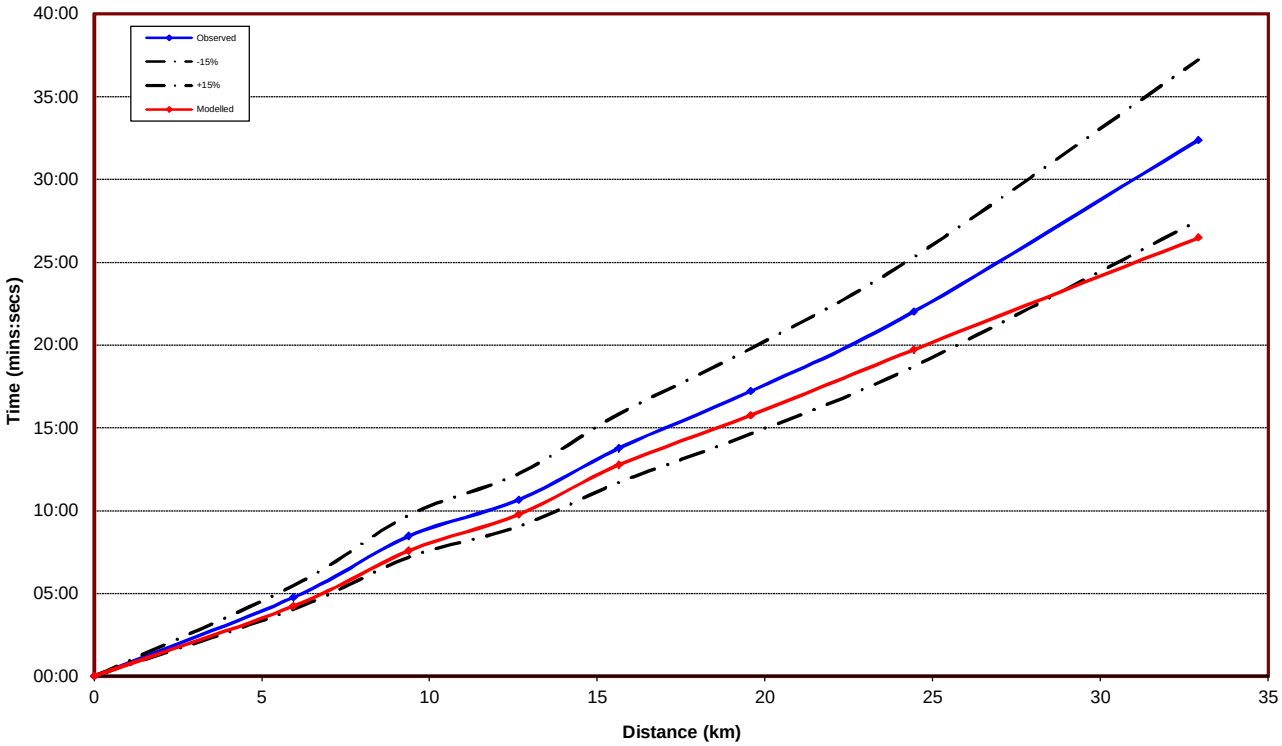


Figure F.45: Journey time – Route 3 Northbound (16:00-17:00)

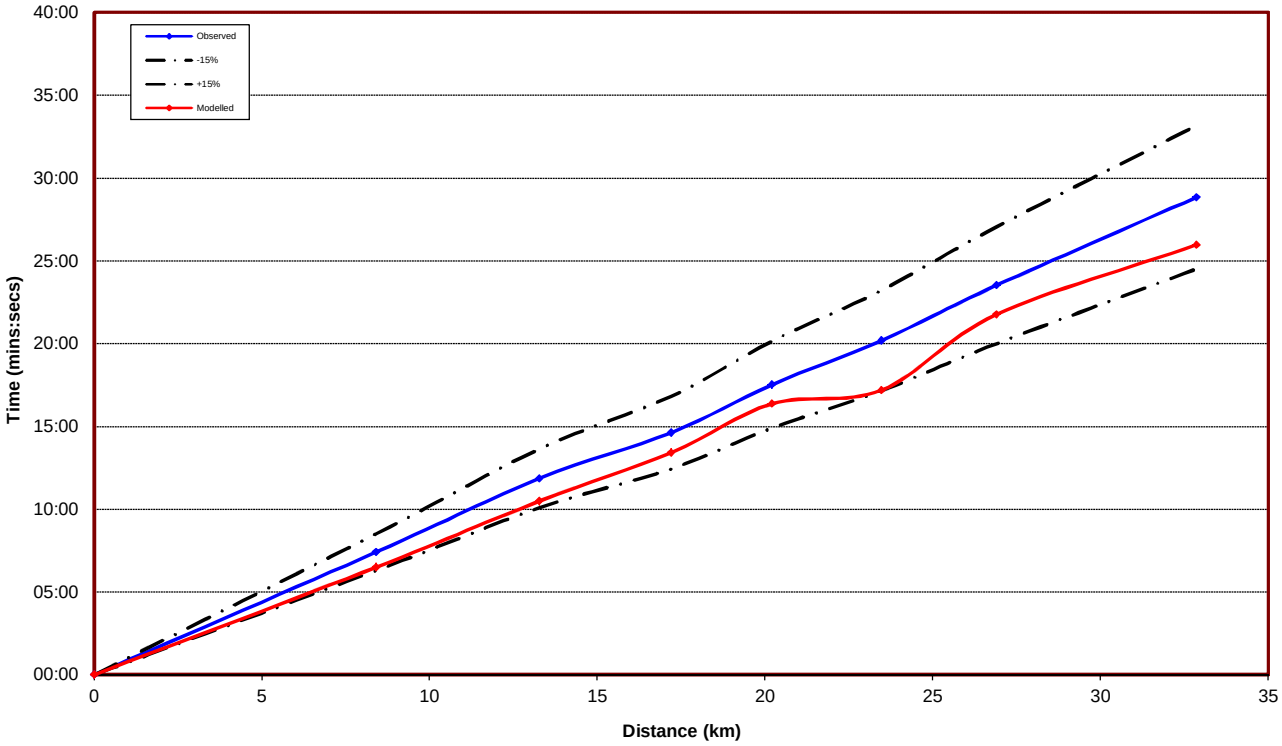


Figure F.46: Journey time – Route 3 Southbound (16:00-17:00)

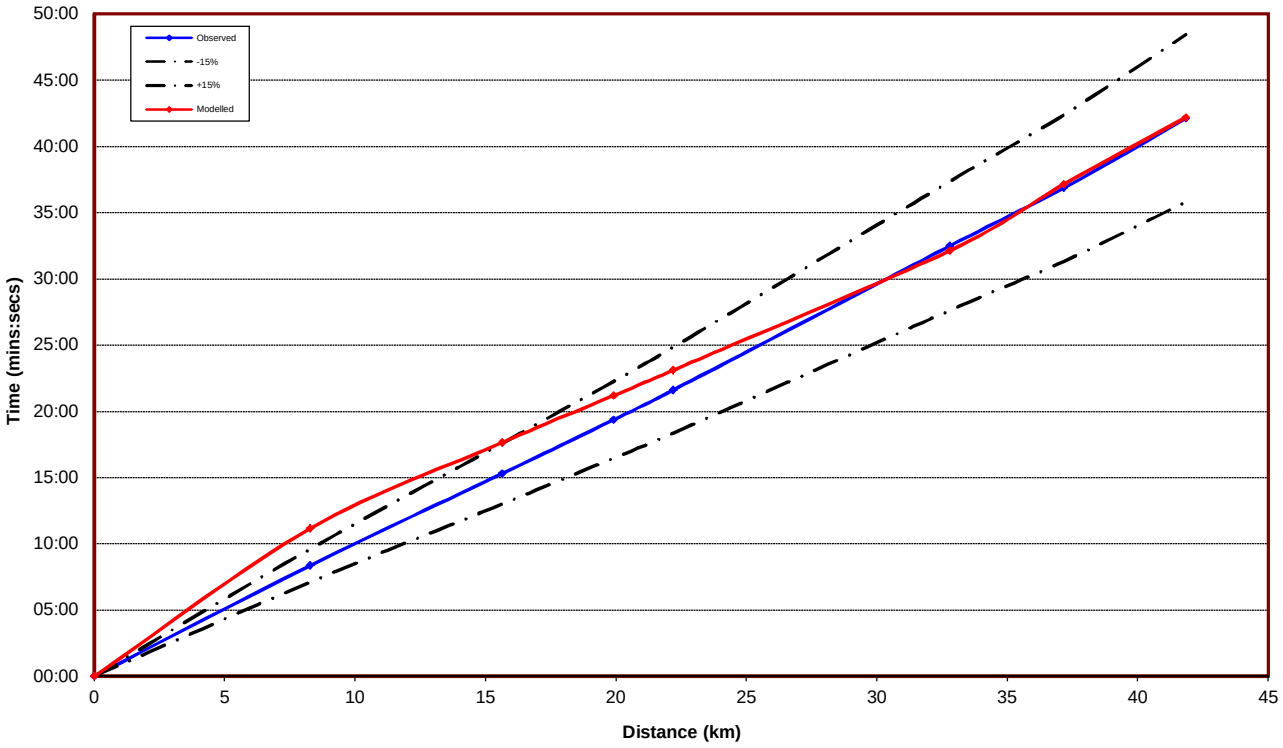


Figure F.47: Journey time – Route 4 Eastbound (16:00-17:00)

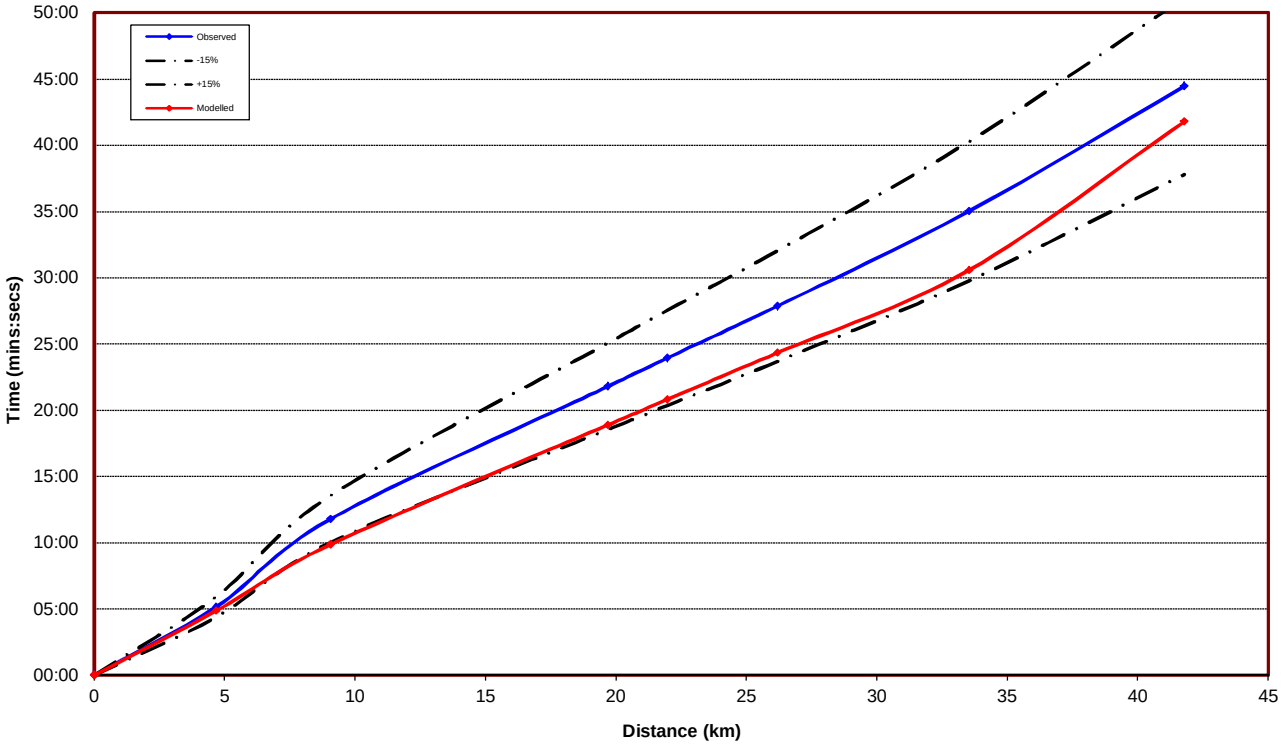


Figure F.48: Journey time – Route 4 Westbound (16:00-17:00)

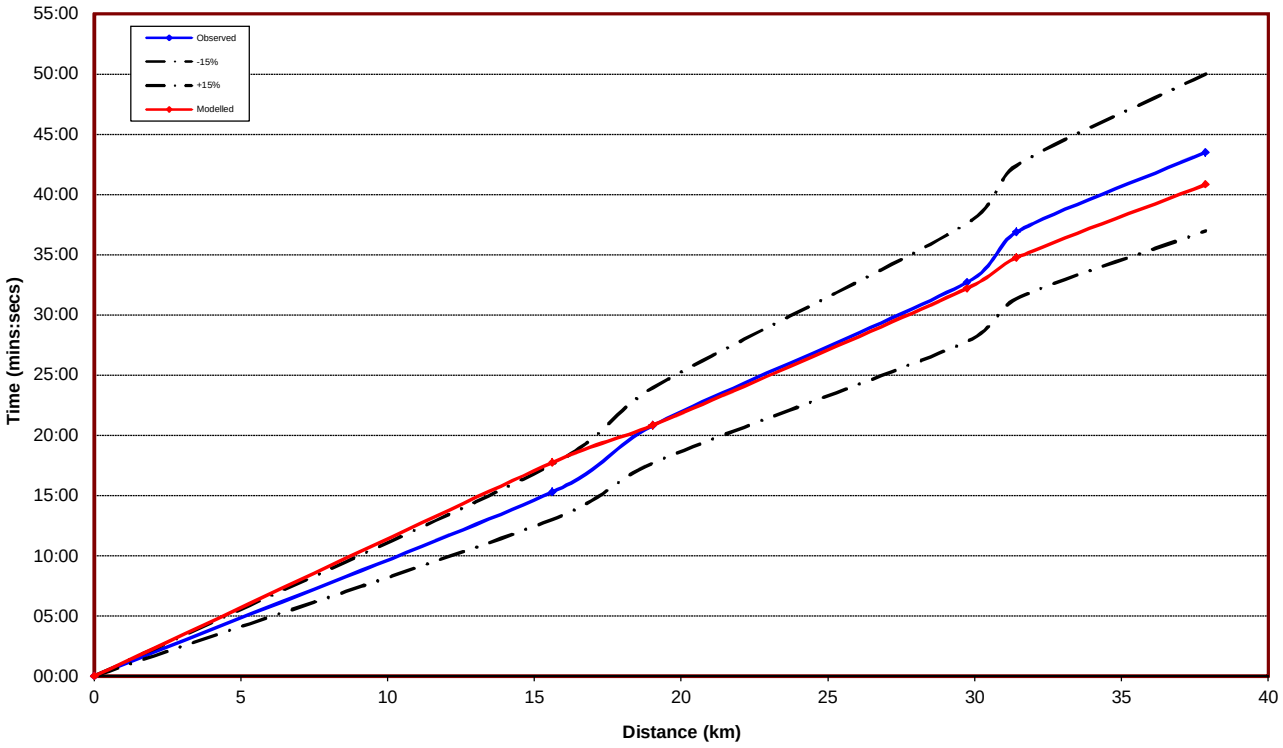


Figure F.49: Journey time – Route 5 Eastbound (16:00-17:00)

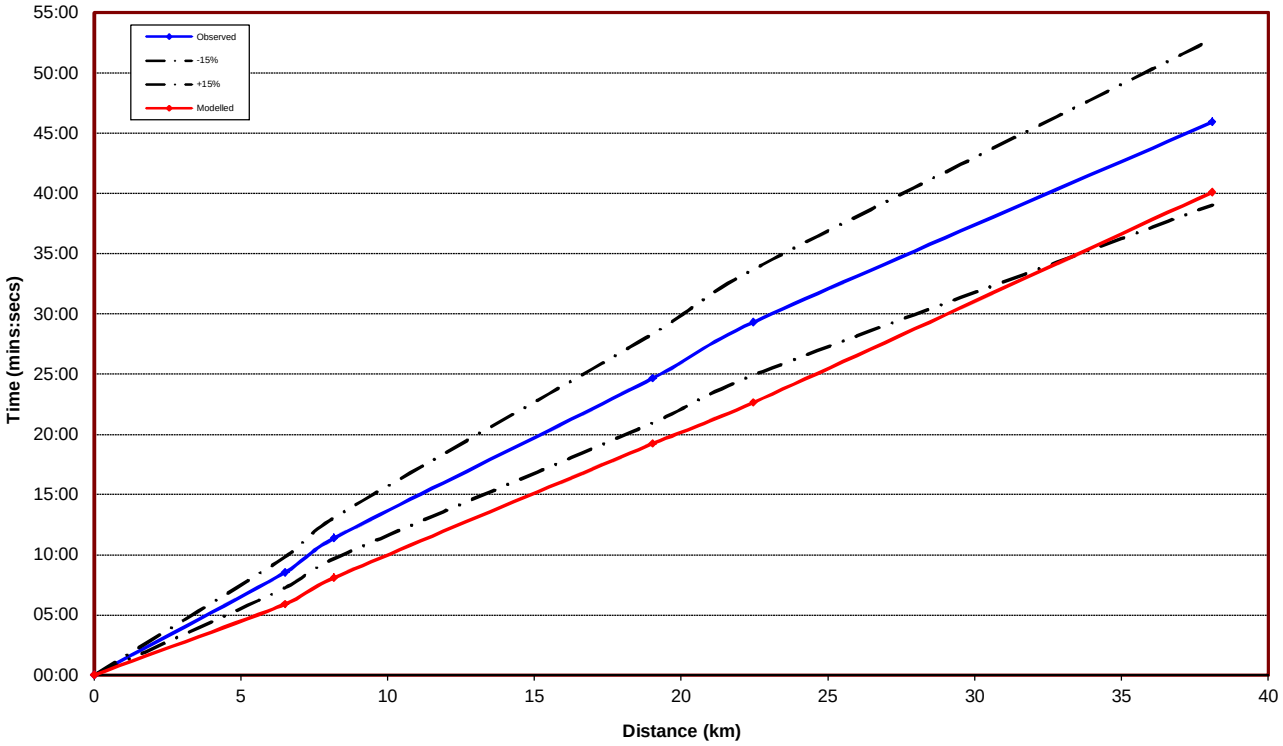


Figure F.50: Journey time – Route 5 Westbound (16:00-17:00)

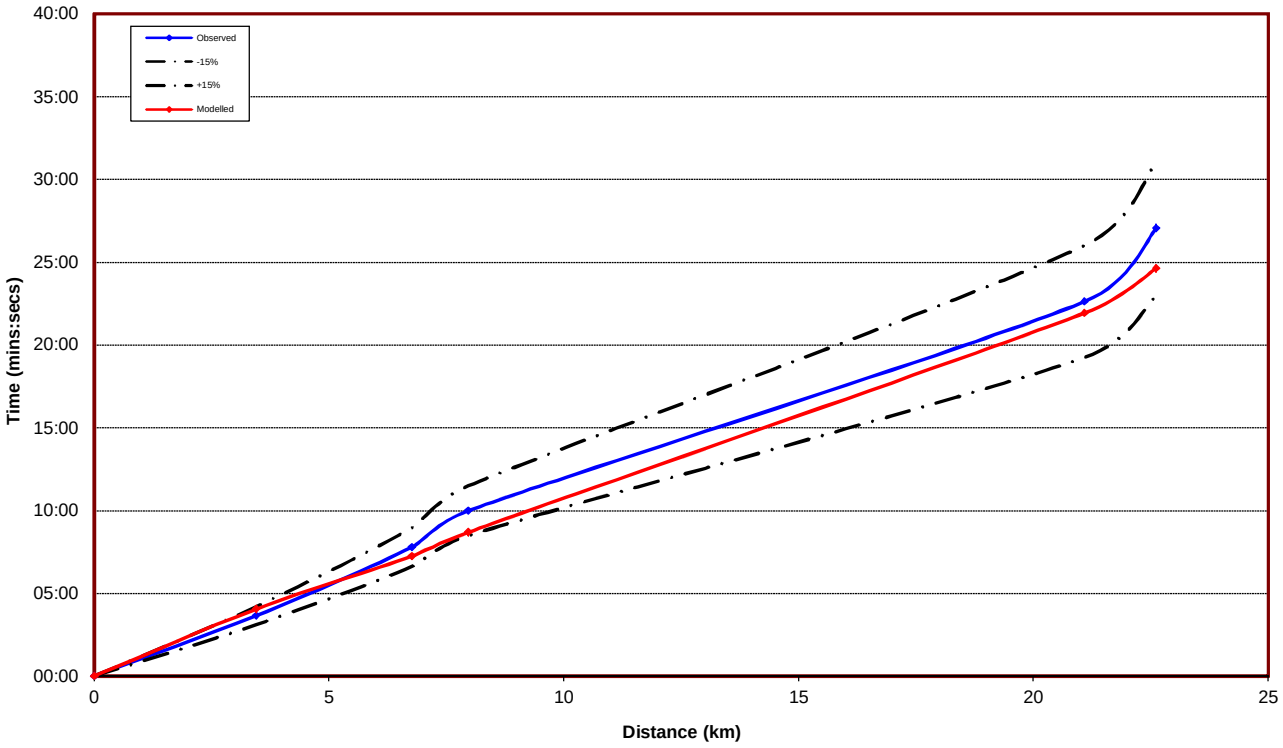


Figure F.51: Journey time – Route 6 Northbound (16:00-17:00)

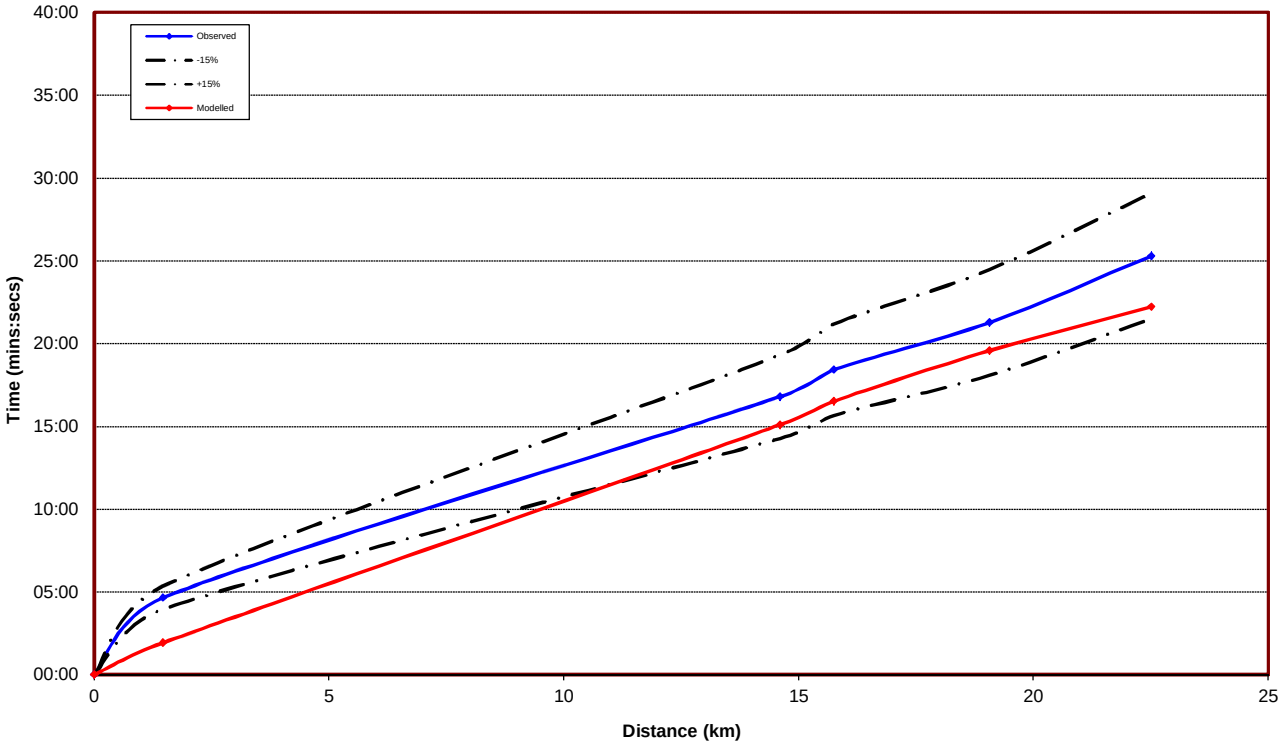


Figure F.52: Journey time – Route 6 Southbound (16:00-17:00)

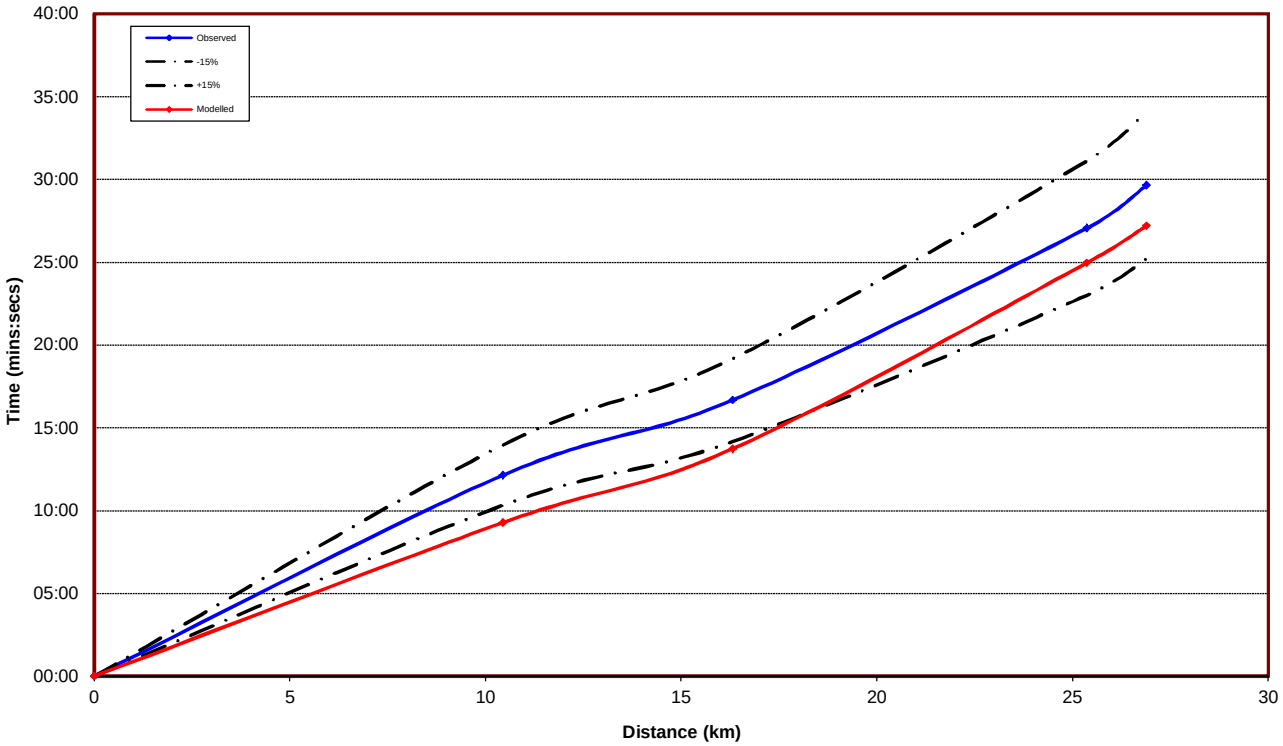


Figure F.53: Journey time – Route 7 Northbound (16:00-17:00)

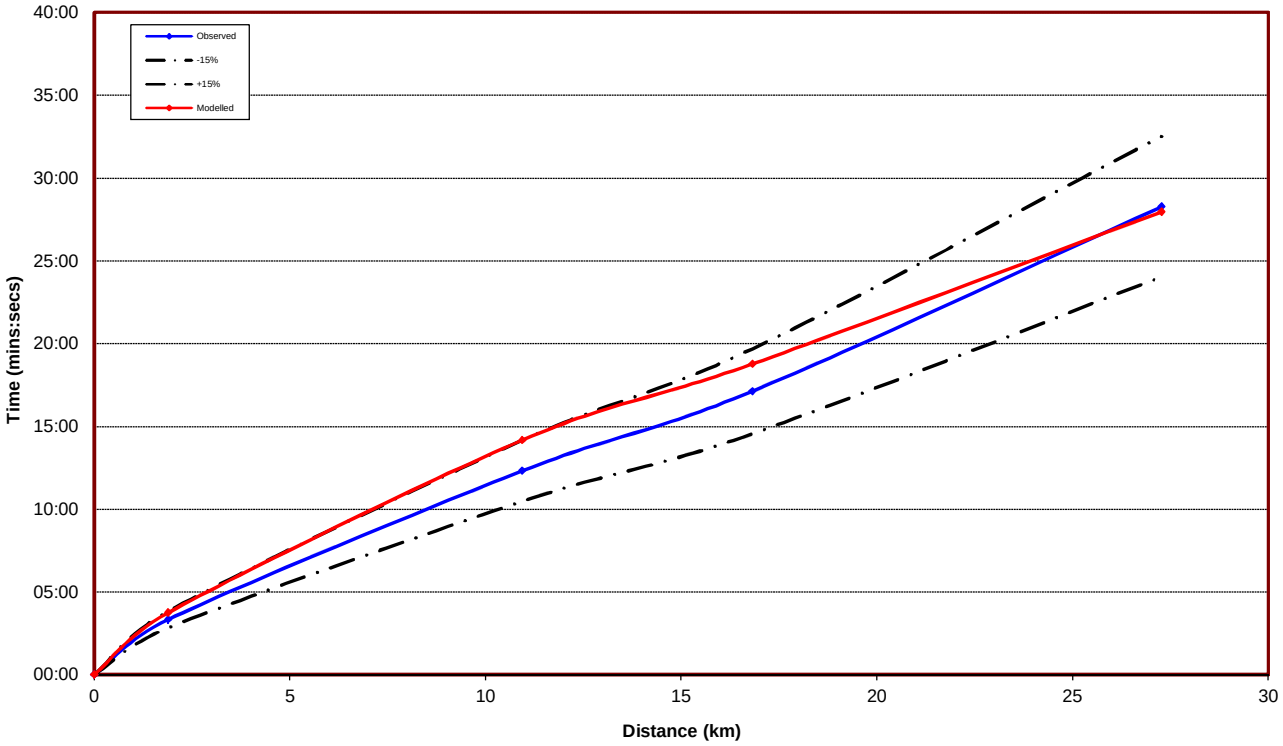


Figure F.54: Journey time – Route 7 Southbound (16:00-17:00)

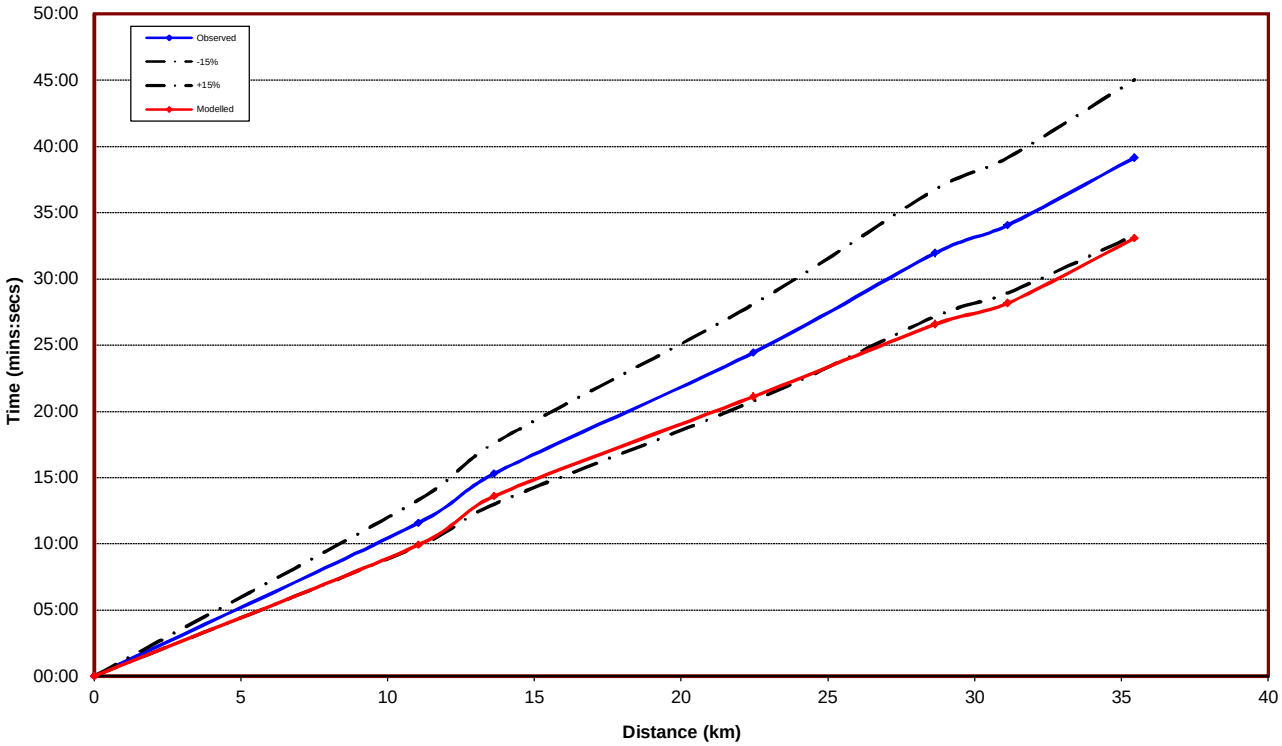


Figure F.55: Journey time – Route 8 Northbound (16:00-17:00)

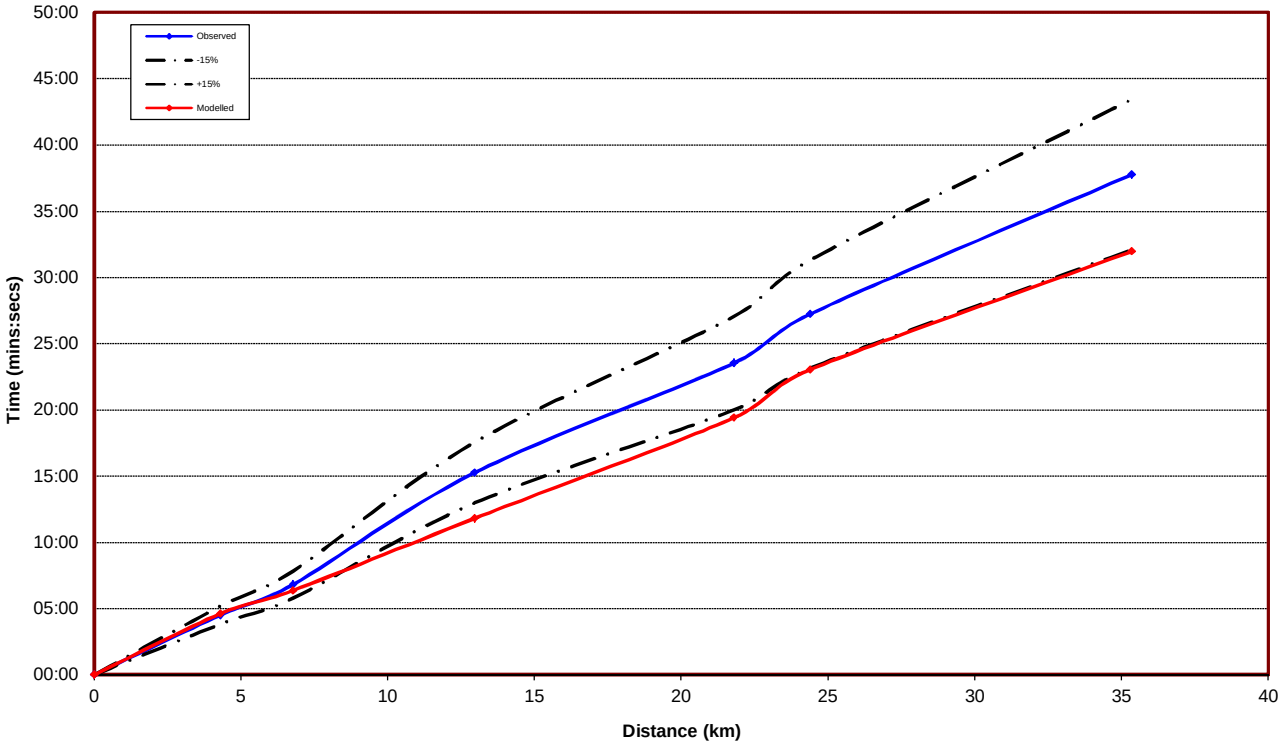


Figure F.56: Journey time – Route 8 Southbound (16:00-17:00)

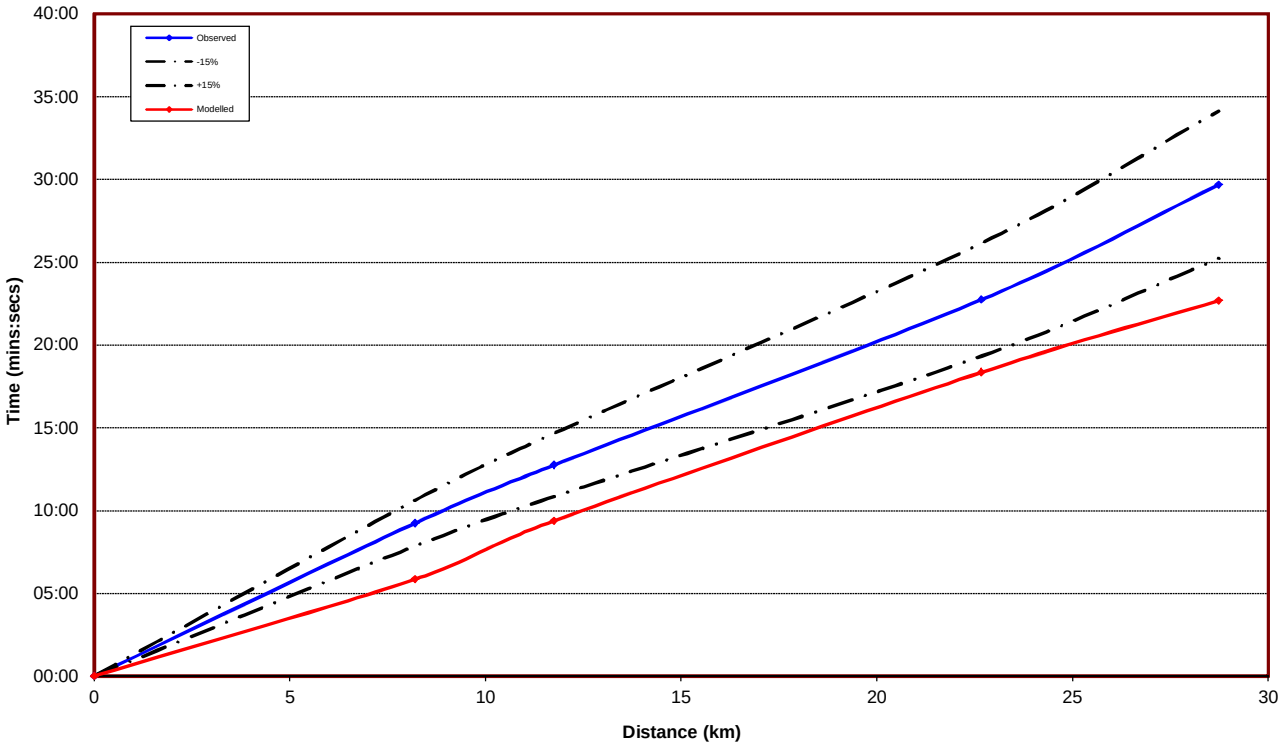


Figure F.57: Journey time – Route 9 Eastbound (16:00-17:00)

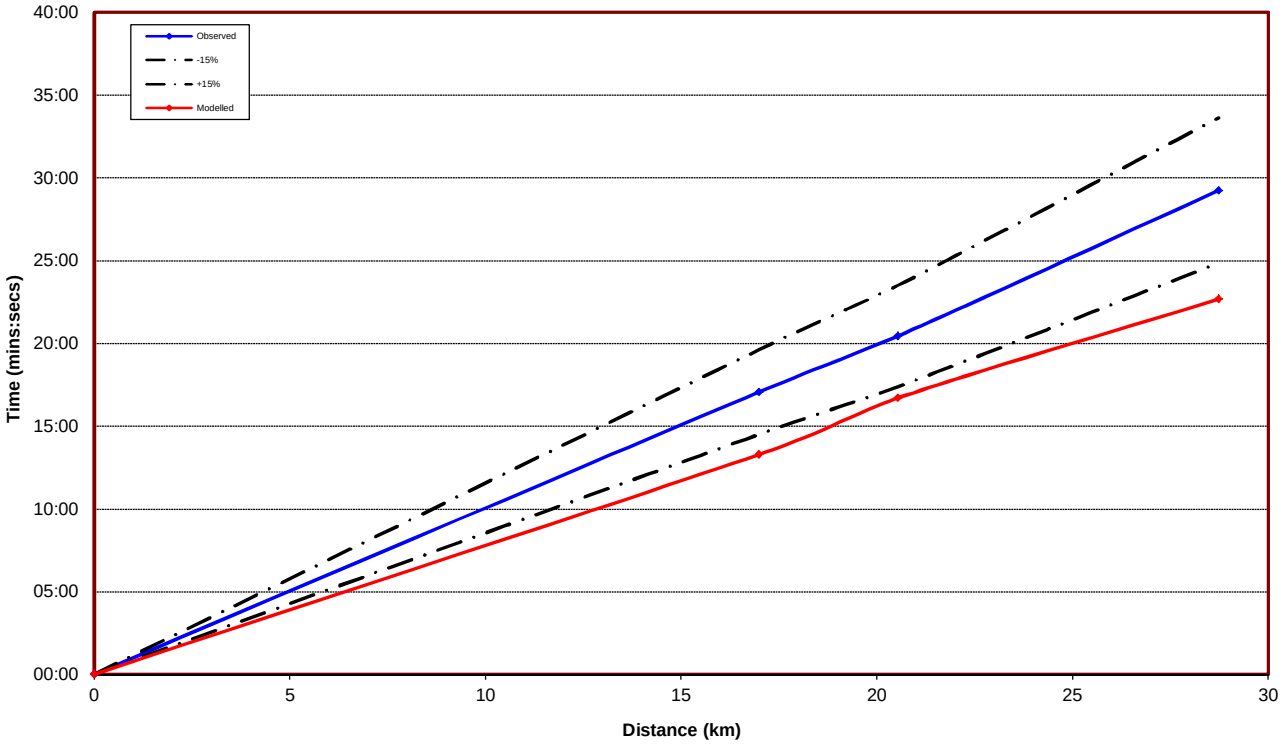


Figure F.58: Journey time – Route 9 Westbound (16:00-17:00)

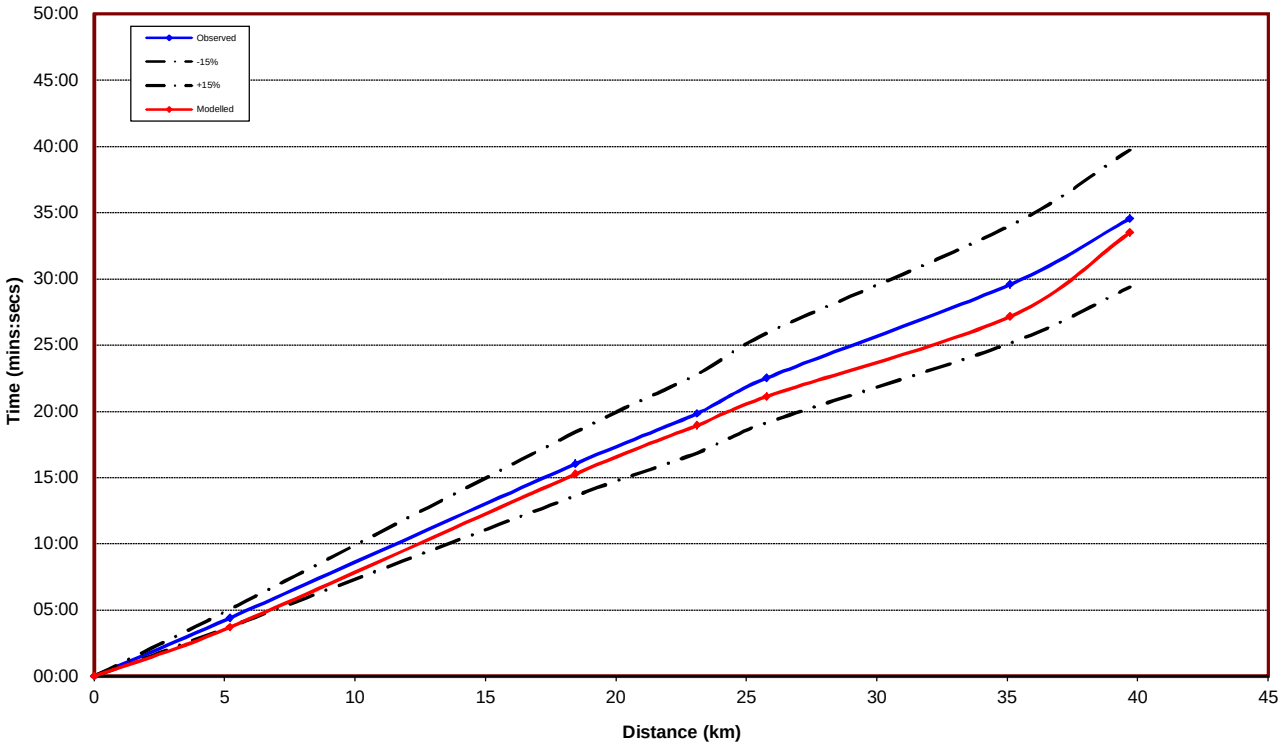


Figure F.59: Journey time – Route 10 Northbound (16:00-17:00)

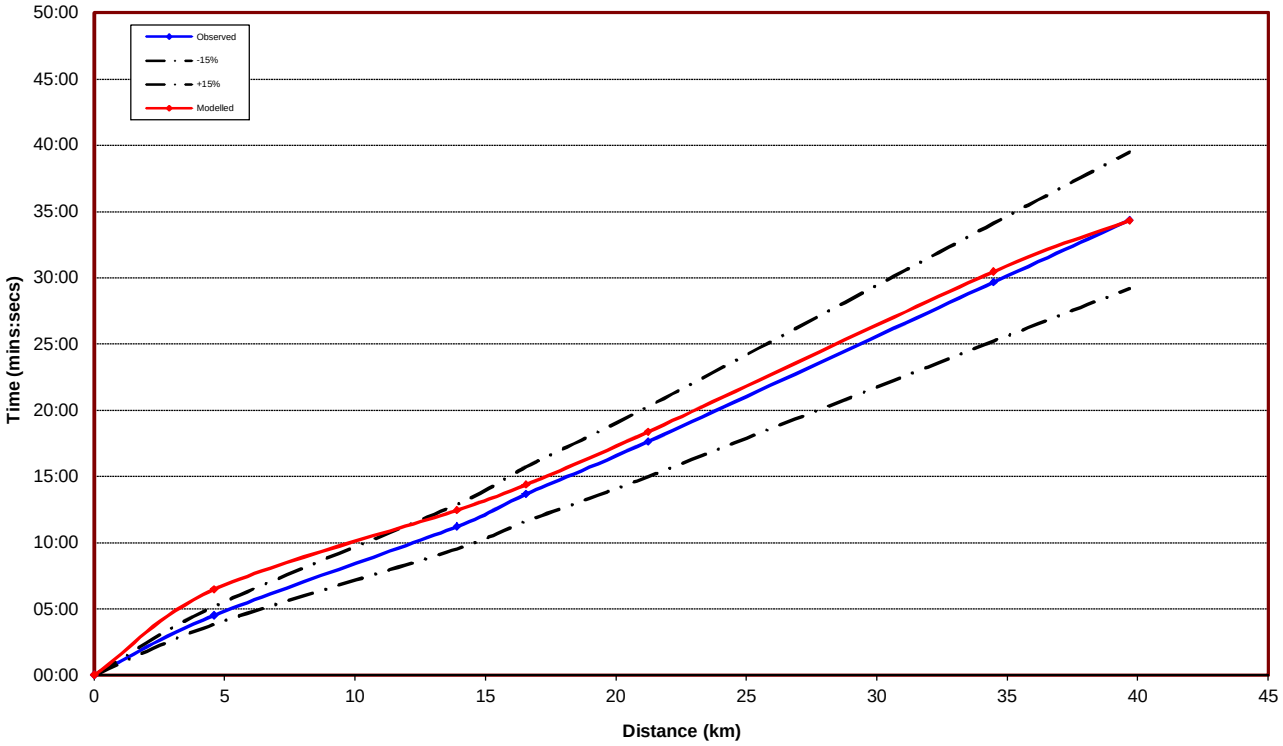


Figure F.60: Journey time – Route 10 Southbound (16:00-17:00)

Journey time validation graphs (18:00-19:00)

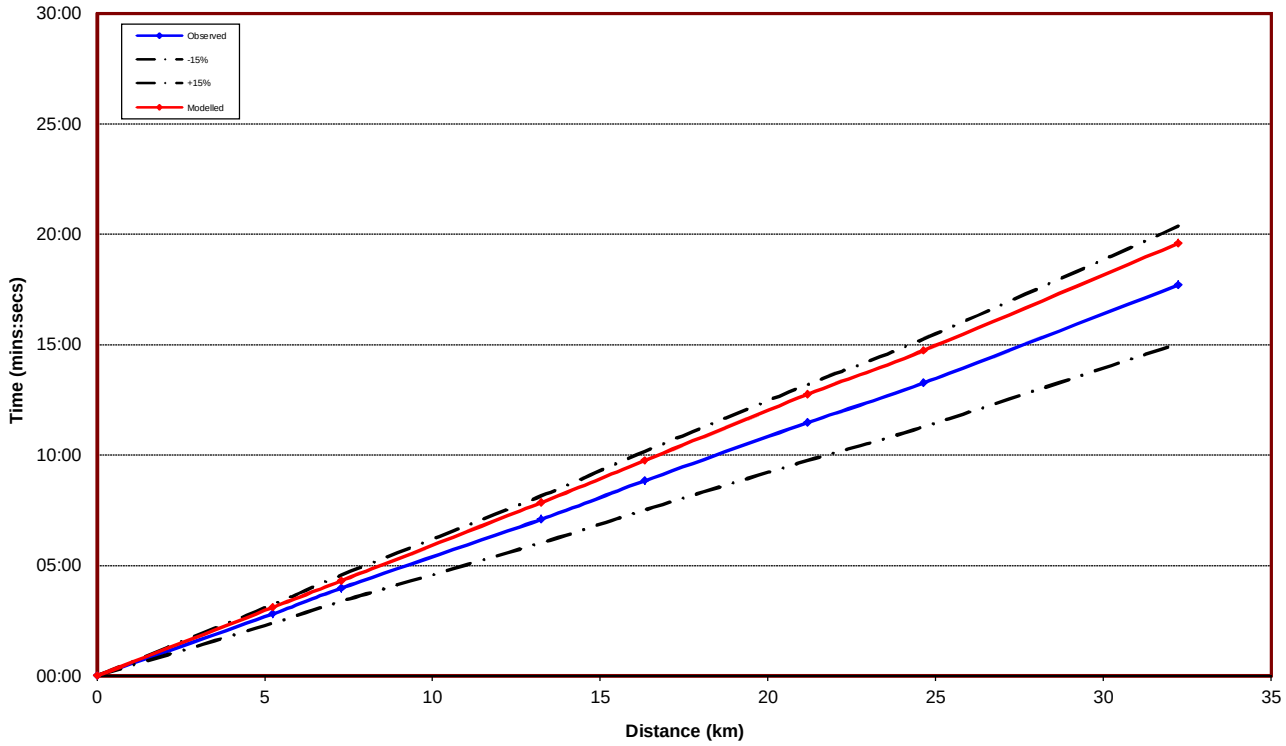


Figure F.61: Journey time – Route 1 Eastbound (18:00-19:00)

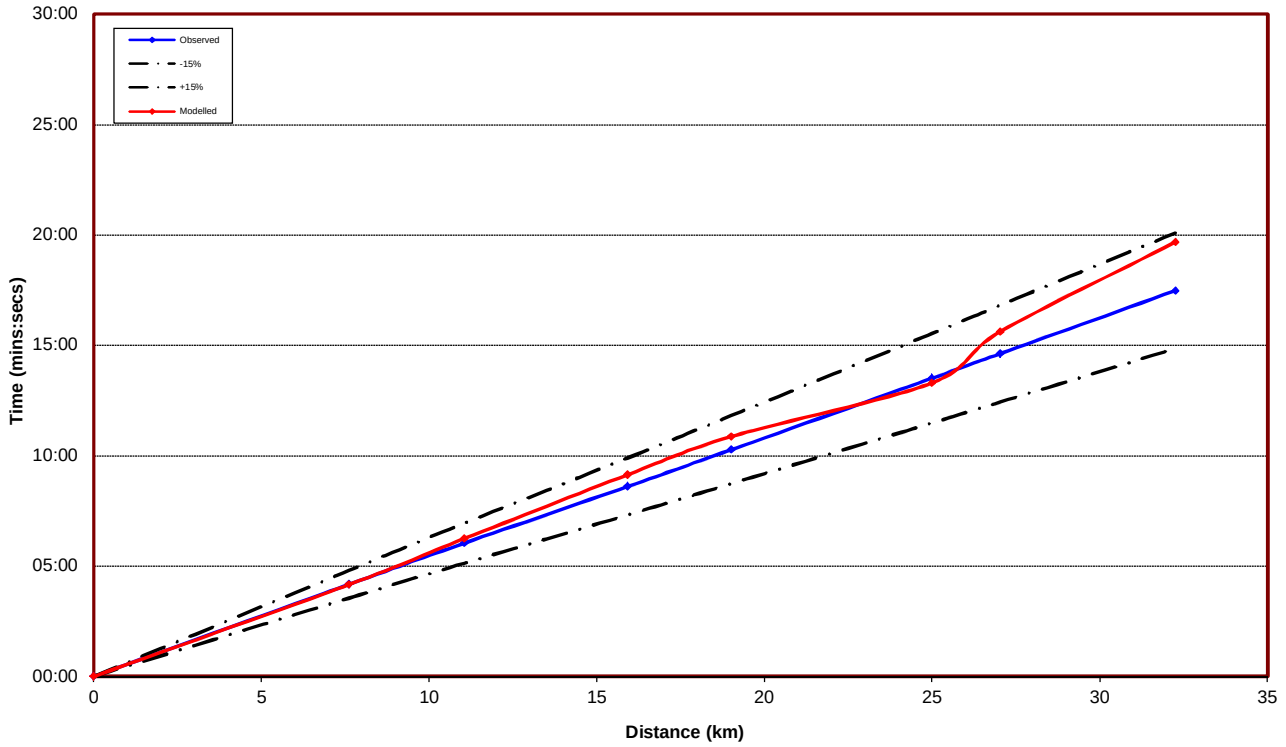


Figure F.62: Journey time – Route 1 Westbound (18:00-19:00)

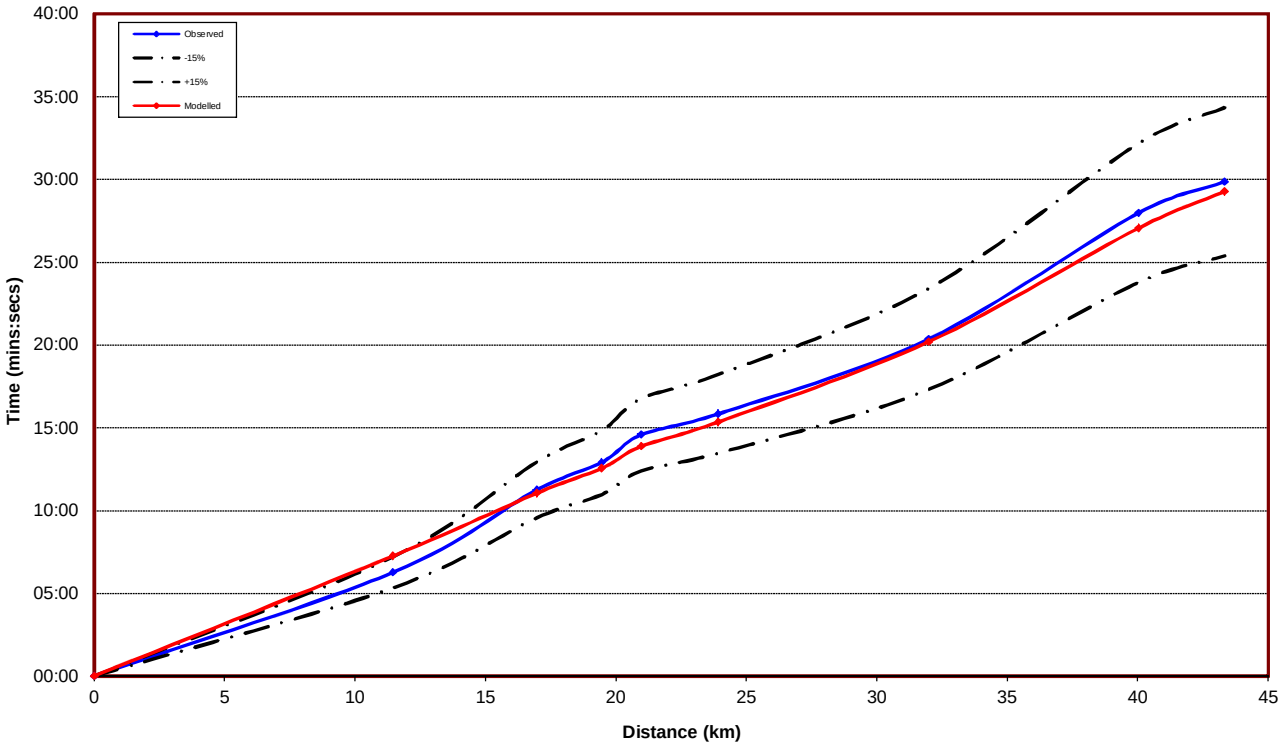


Figure F.63: Journey time – Route 2 Northbound (18:00-19:00)

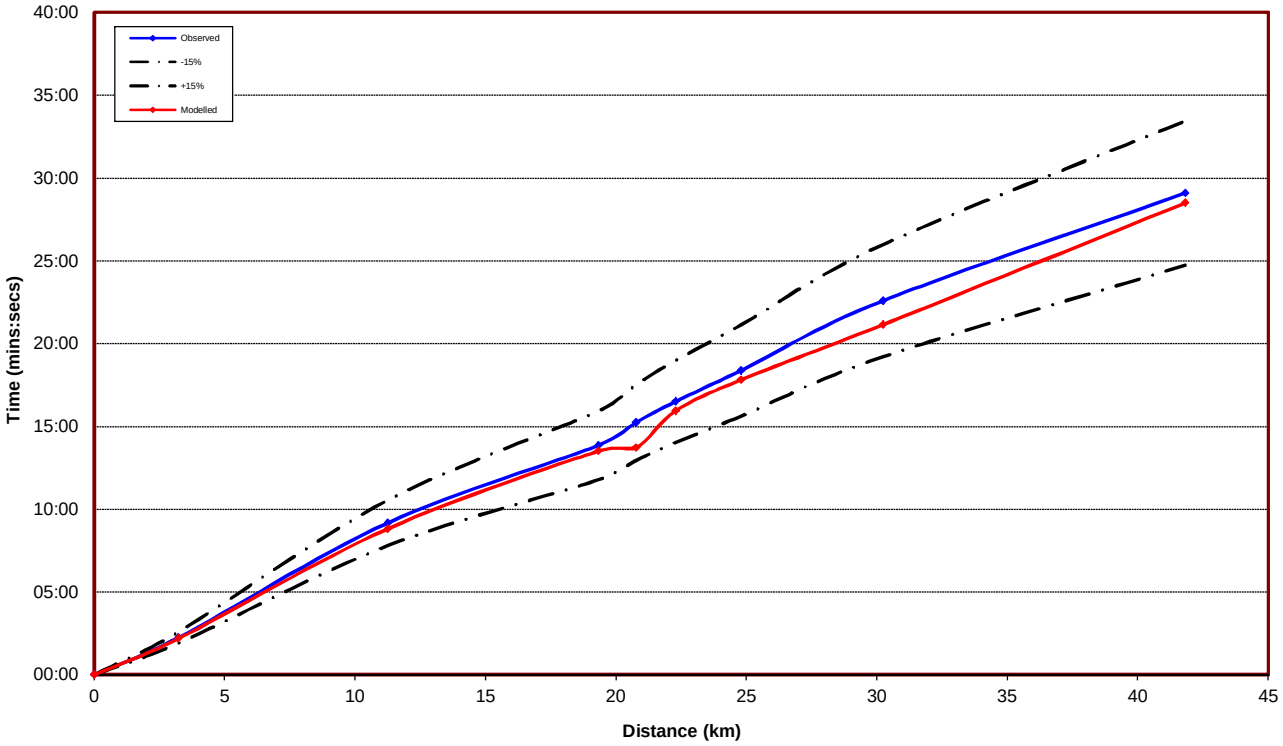


Figure F.64: Journey time – Route 2 Southbound (18:00-19:00)

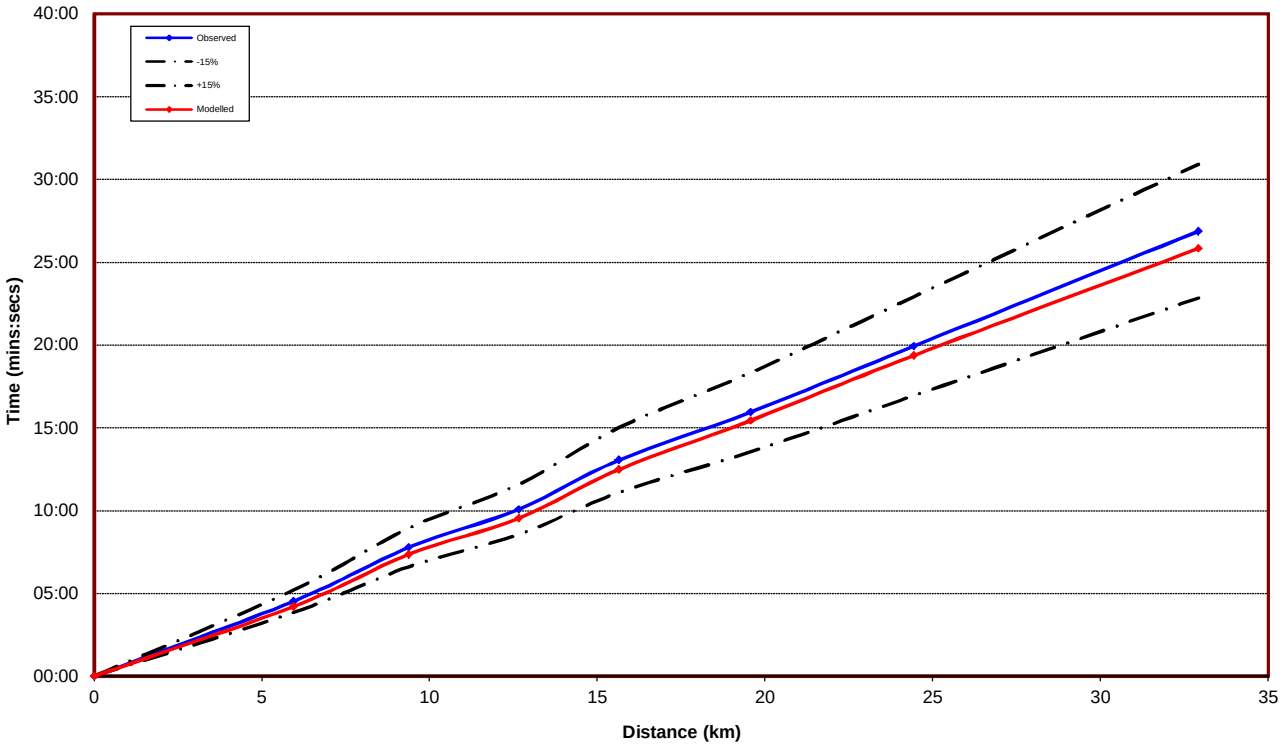


Figure F.65: Journey time – Route 3 Northbound (18:00-19:00)

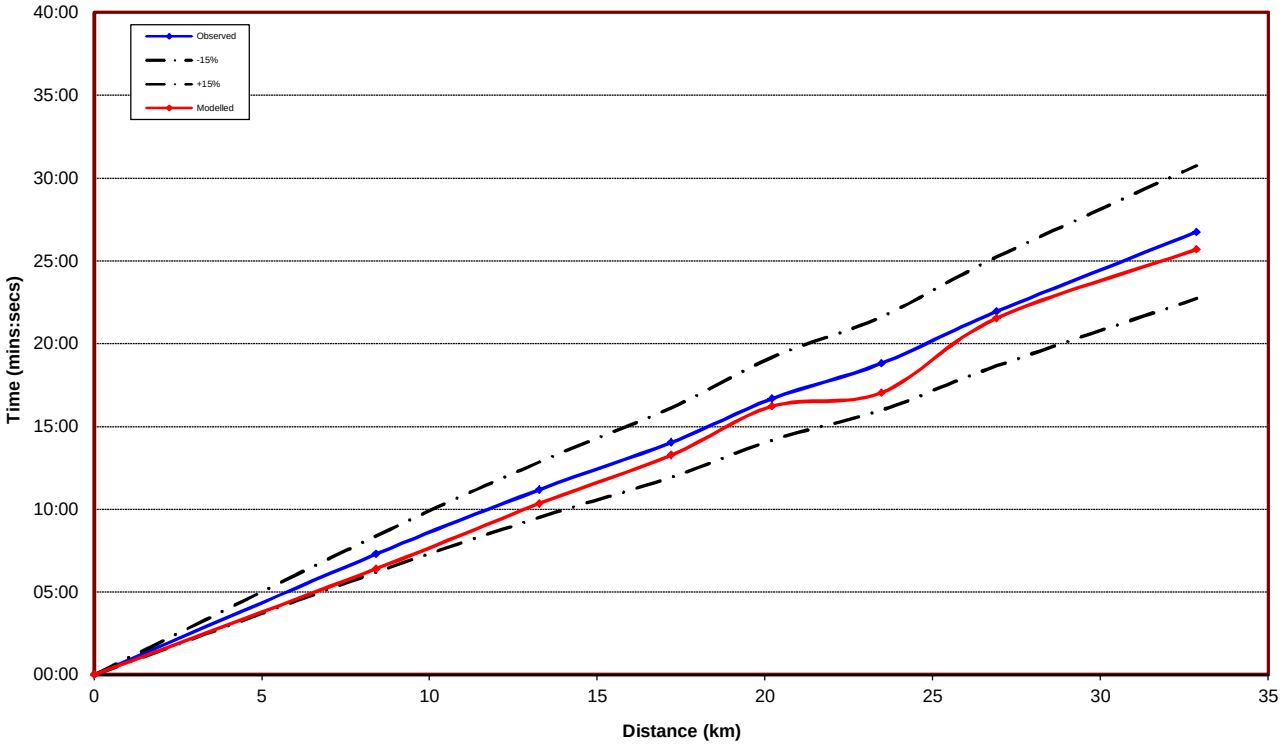


Figure F.66: Journey time – Route 3 Southbound (18:00-19:00)

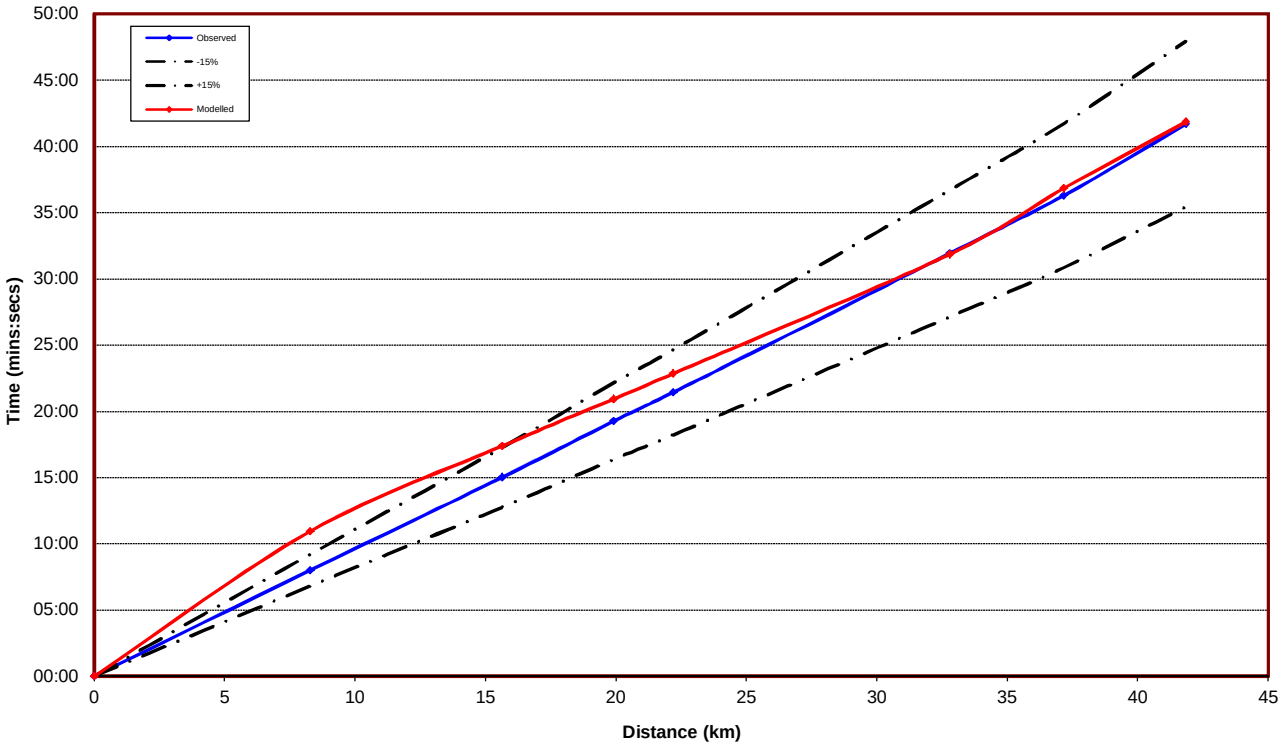


Figure F.67: Journey time – Route 4 Eastbound (18:00-19:00)

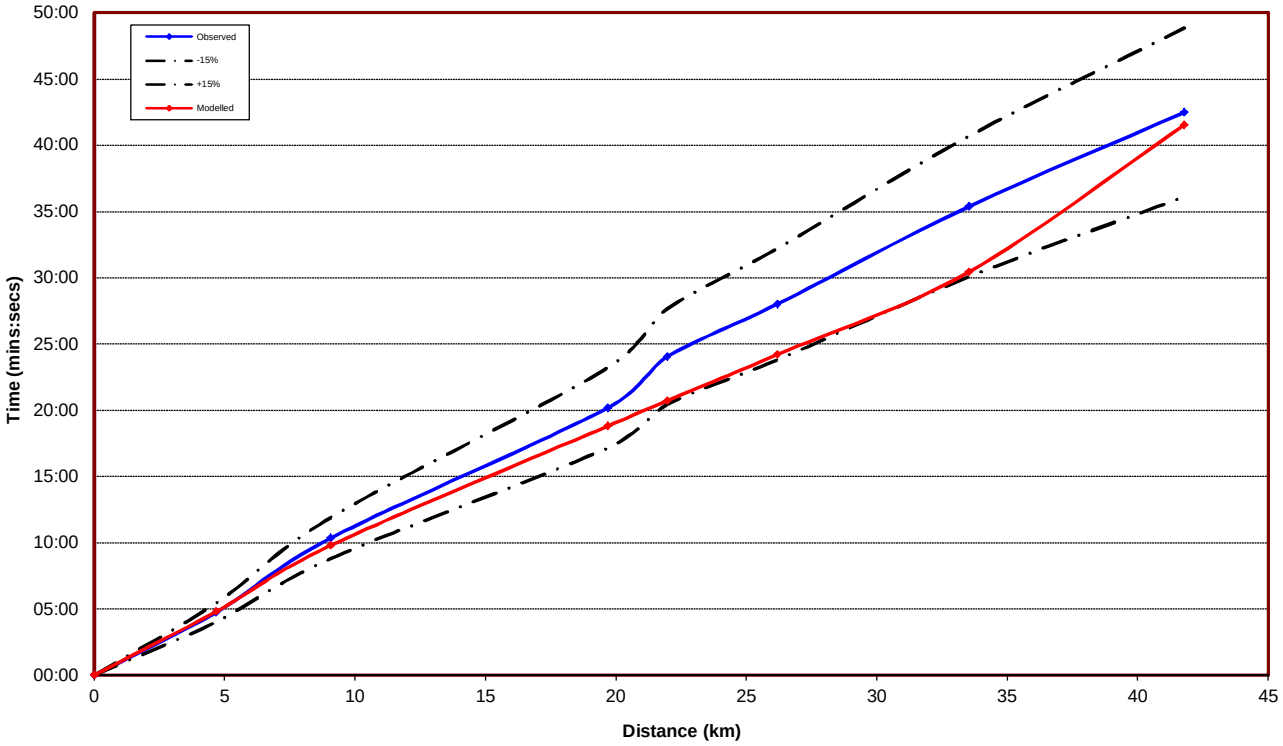


Figure F.68: Journey time – Route 4 Westbound (18:00-19:00)

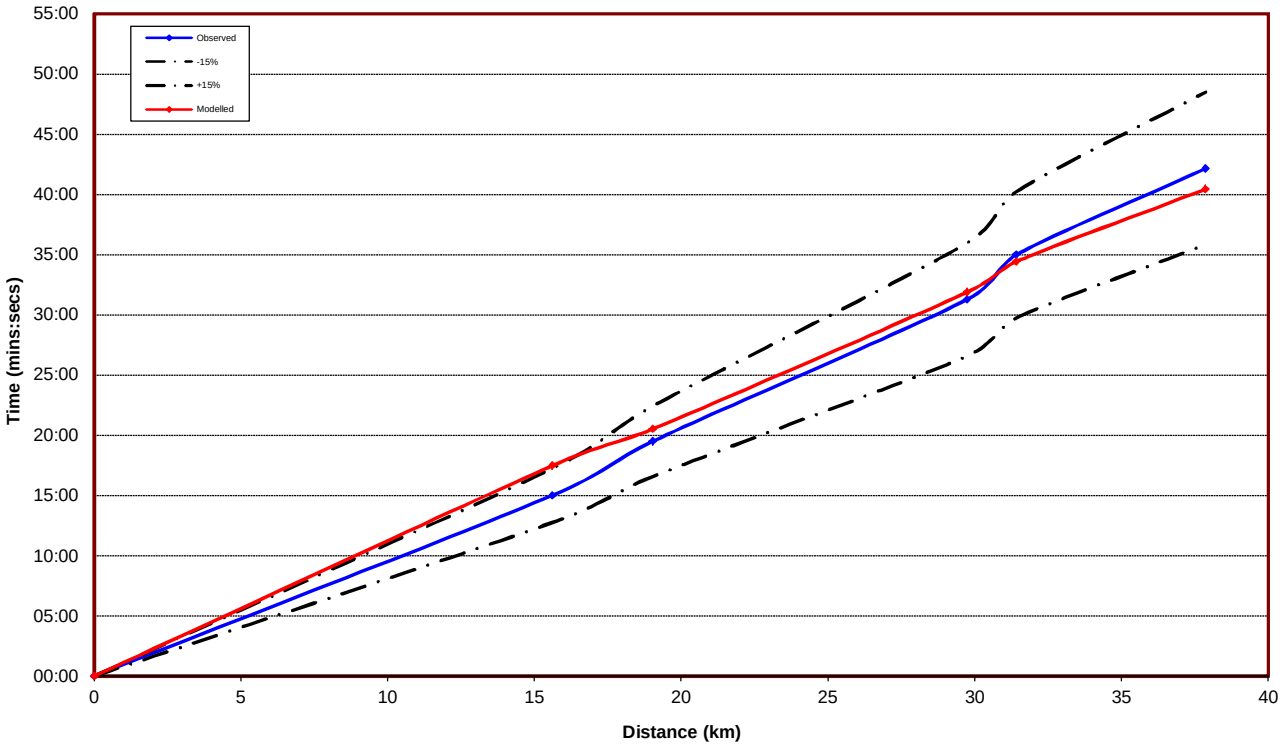


Figure F.69: Journey time – Route 5 Eastbound (18:00-19:00)

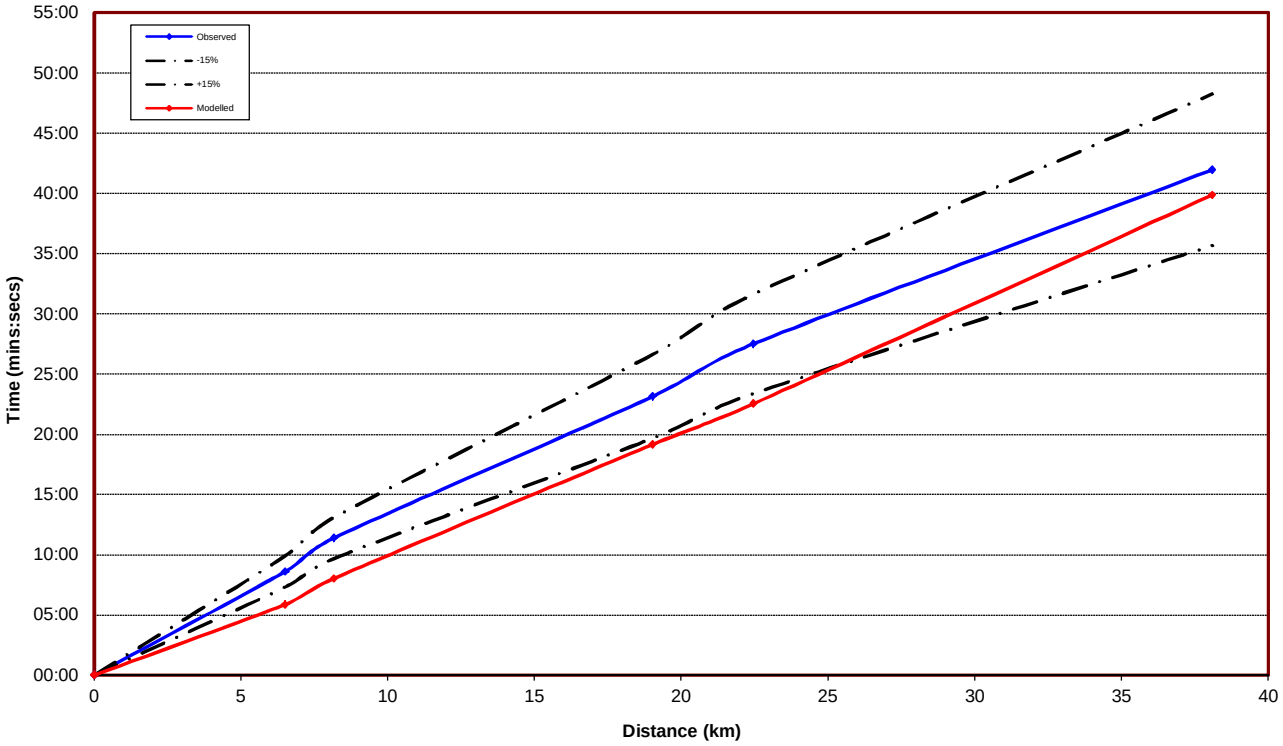


Figure F.70: Journey time – Route 5 Westbound (18:00-19:00)

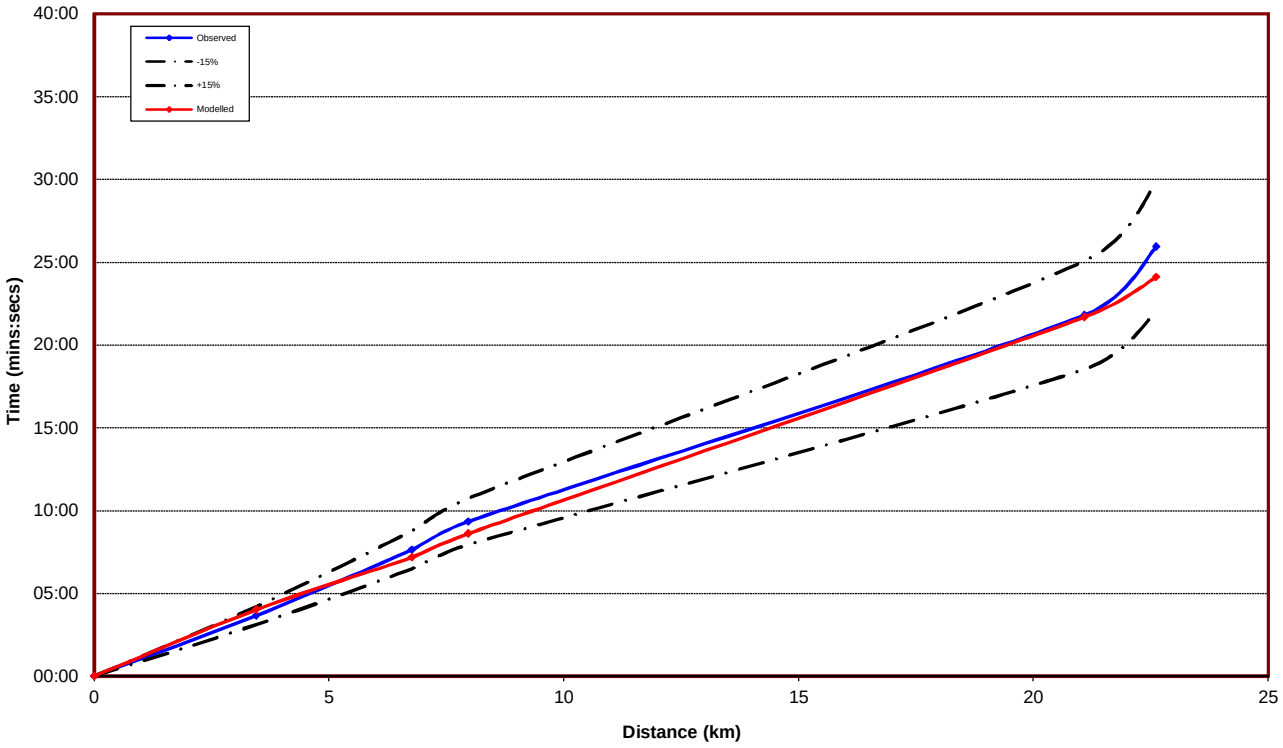


Figure F.71: Journey time – Route 6 Northbound (18:00-19:00)

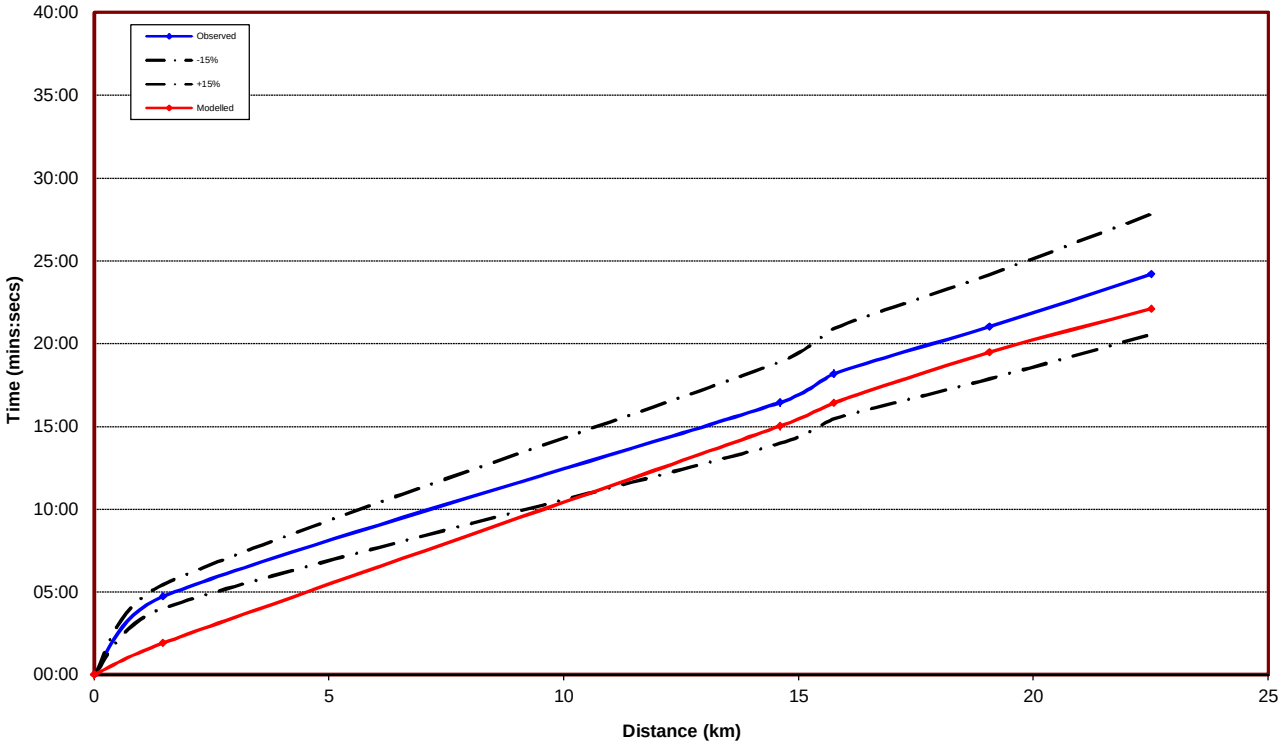


Figure F.72: Journey time – Route 6 Southbound (18:00-19:00)

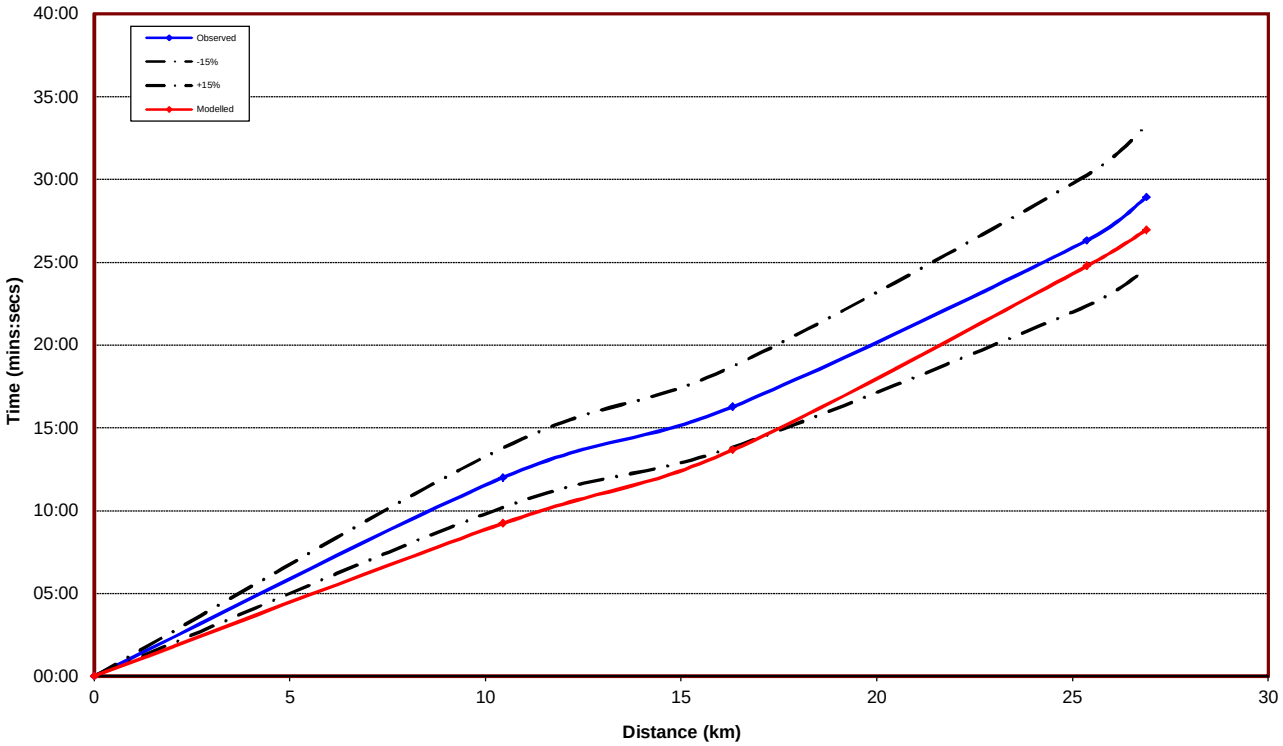


Figure F.73: Journey time – Route 7 Northbound (18:00-19:00)

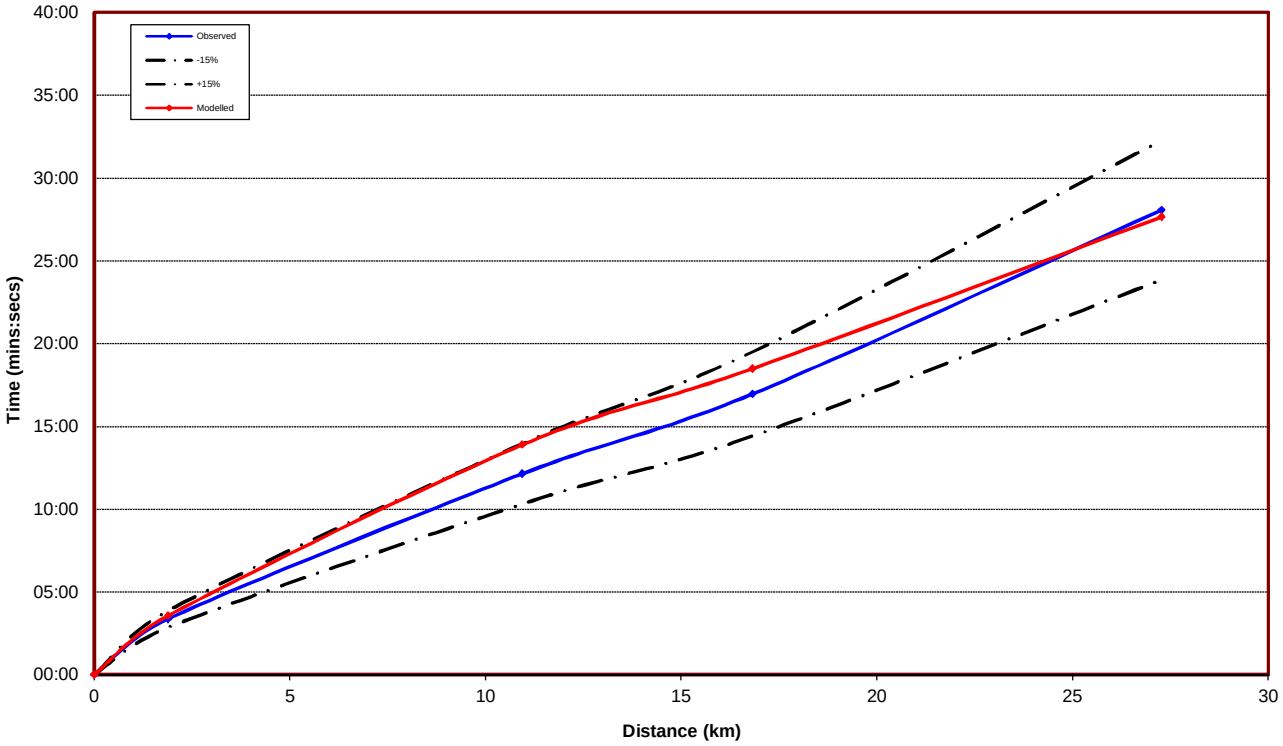


Figure F.74: Journey time – Route 7 Southbound (18:00-19:00)

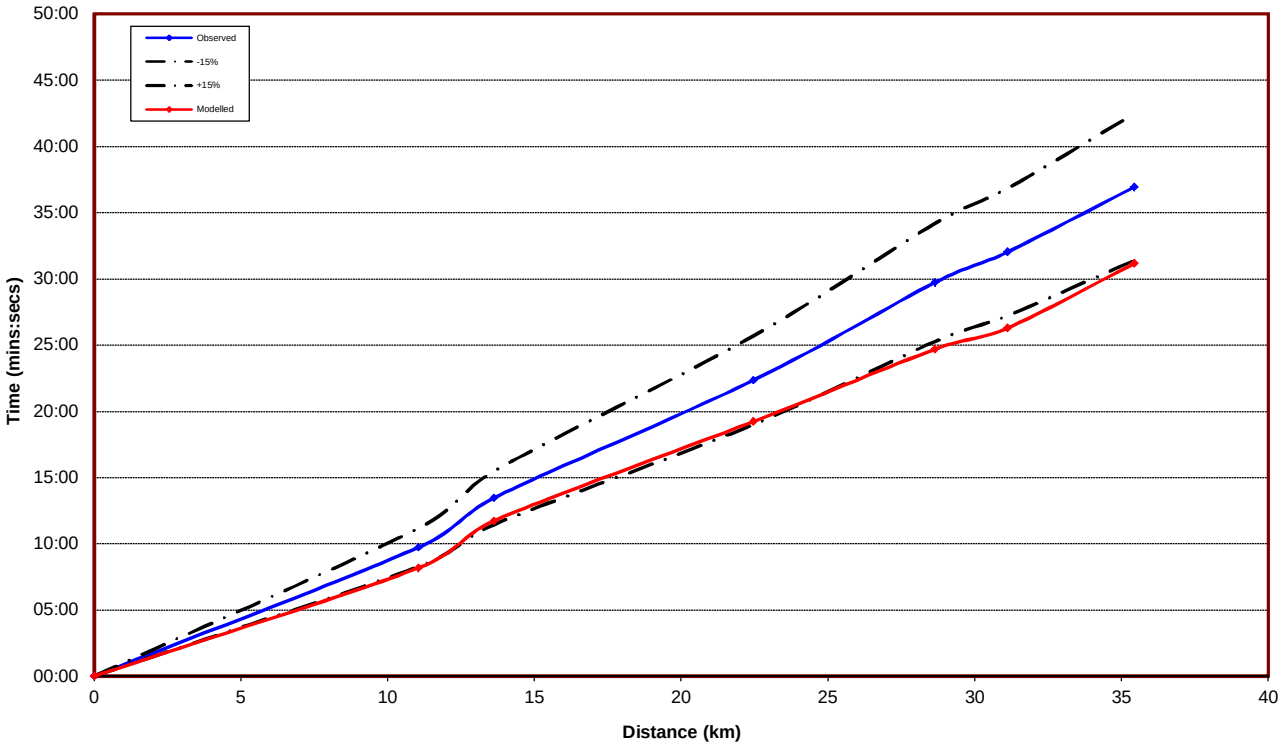


Figure F.75: Journey time – Route 8 Northbound (18:00-19:00)

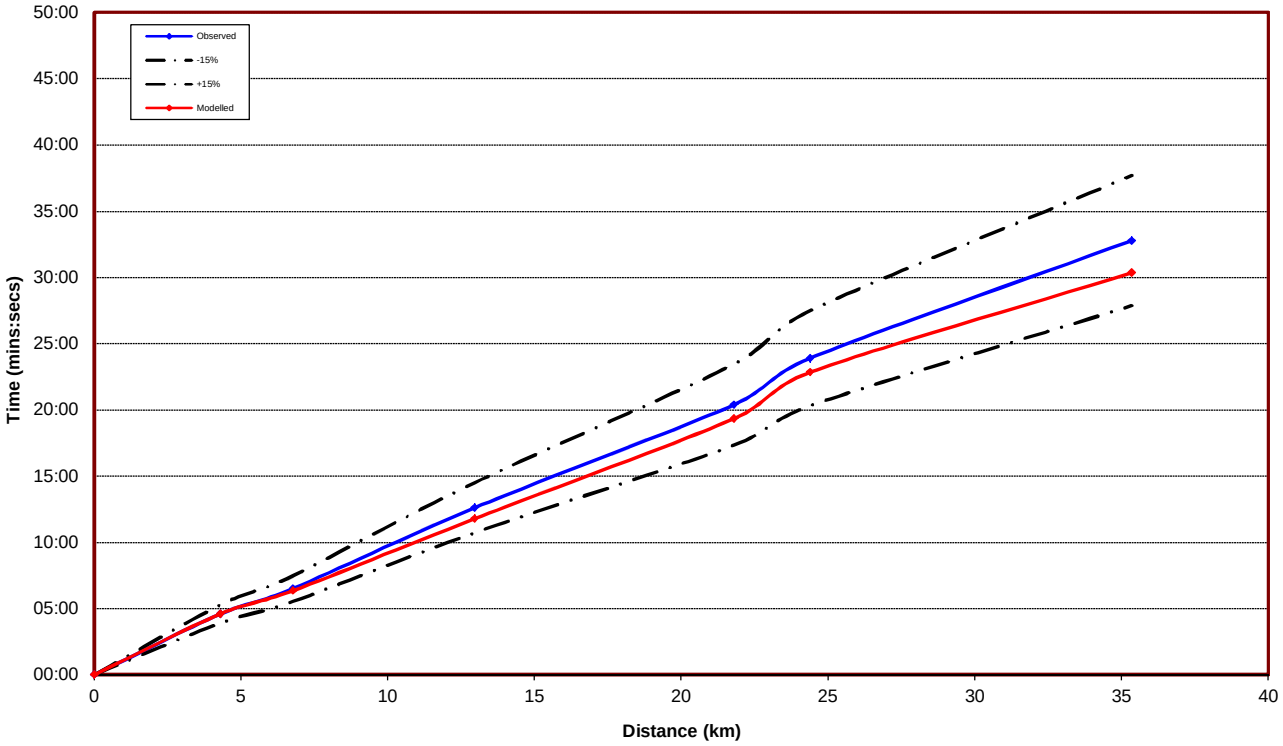


Figure F.76: Journey time – Route 8 Southbound (18:00-19:00)

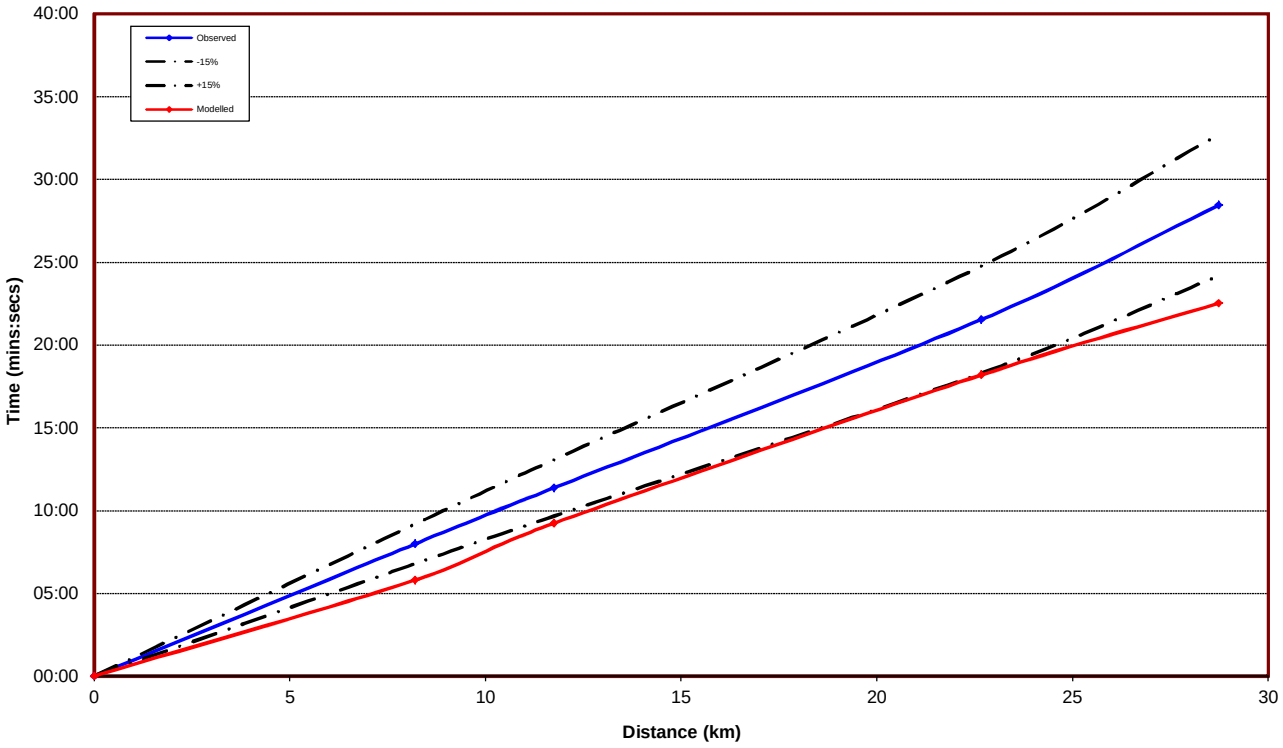


Figure F.77: Journey time – Route 9 Eastbound (18:00-19:00)

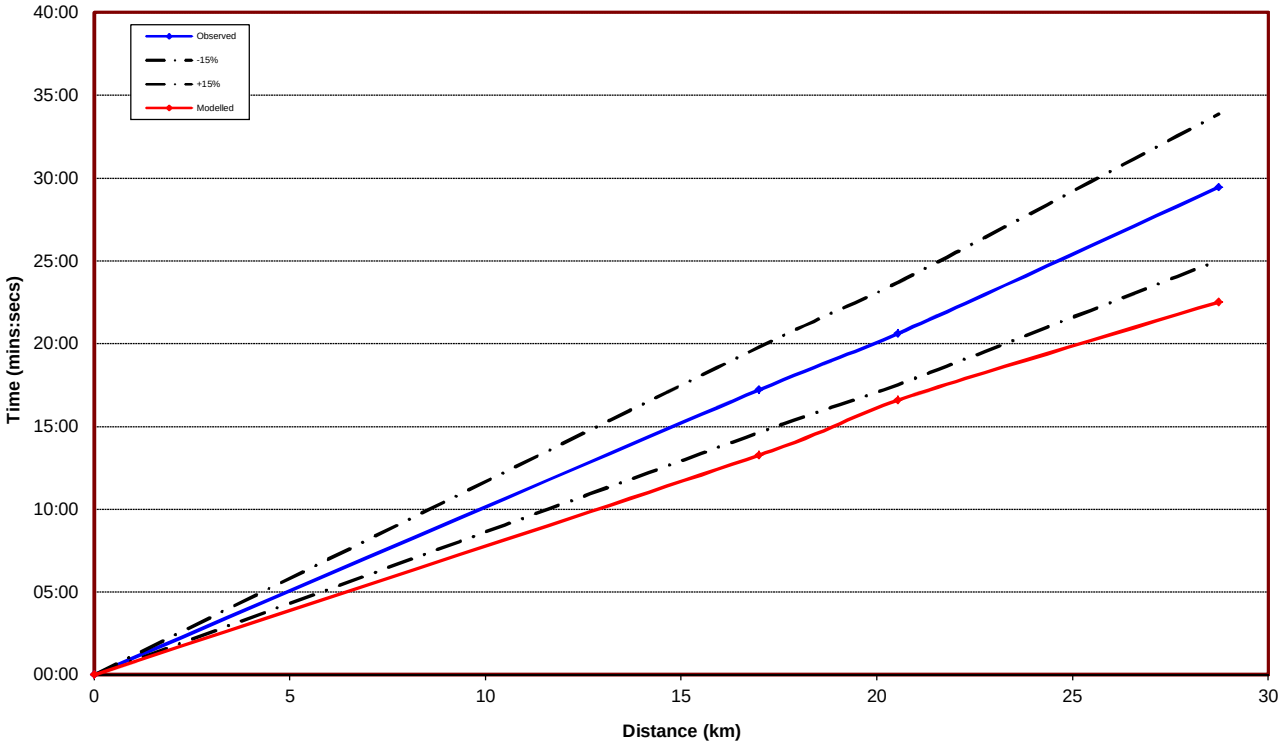


Figure F.78: Journey time – Route 9 Westbound (18:00-19:00)

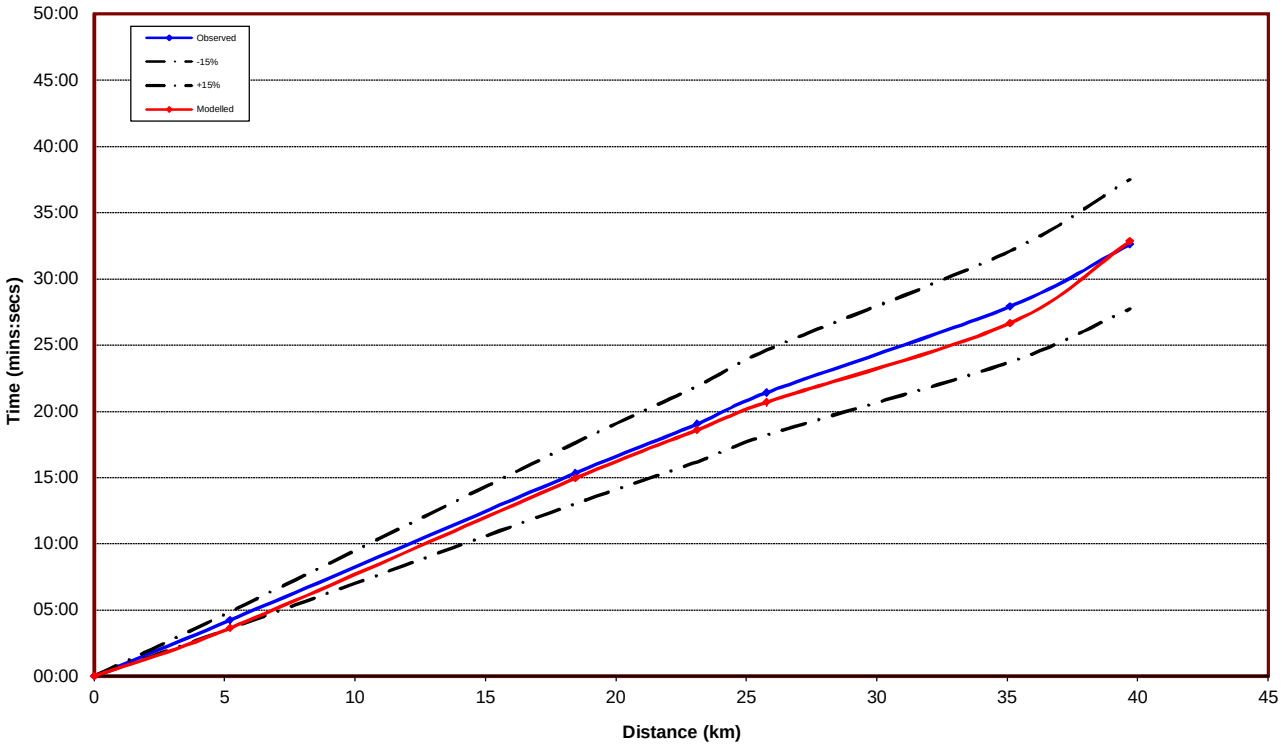


Figure F.79: Journey time – Route 10 Northbound (18:00-19:00)

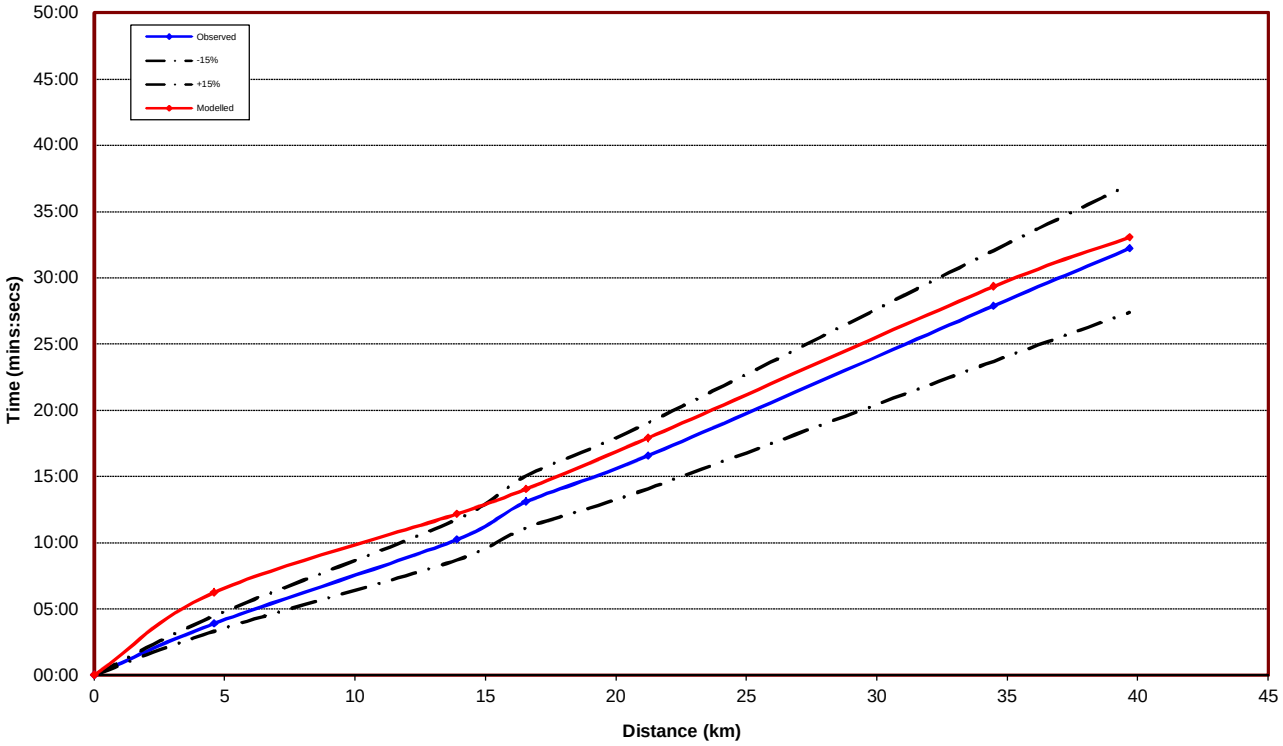


Figure F.80: Journey time – Route 10 Southbound (18:00-19:00)

SIZEWELL C VISUM TRAFFIC MODEL

TECHNICAL NOTE: 2015 BASE YEAR SENSITIVITY TEST

1. INTRODUCTION

1.1. 2015 base year VISUM transport models have been developed, to represent seven modelled hours as follows:

Main three hours:

– 08:00-09:00

– 15:00-16:00

– 17:00-18:00

Remaining four hours:

– 06:00-07:00

– 07:00-08:00

– 16:00-17:00

– 18:00-19:00

1.2. The development, calibration and validation of the base models is described in "*Sizewell C 2015_Model_LMVR_160516.pdf*" for the three main hours and in "*Sizewell C 2015_Model_LMVR Addendum_160516.pdf*" for the four additional hours.

1.3. During the process of assessing the forecast year models it became apparent that zone 701 was connected to the highway network incorrectly and was subsequently corrected in the forecast year models. A sensitivity test was carried out on the validated base models, with this correction to the zone 701 centroid connector, to confirm the change had minimal impact on the validation of the base models. This sensitivity test was described in "Sizewell C 2015_Model_LMVR_sensitivity_120318.pdf".

1.4. Following the model forecasting that was undertaken to inform the proposals for Stage 3 public consultation, feedback was received from Suffolk County Council (SCC) suggesting that convergence criteria should be tightened to improve stability of the base and forecast models. A sensitivity test has been carried out with stricter convergence settings in the seven base year models so that calibration and validation is maintained.

1.5. Furthermore, following further assessment of the B1078 junctions with the A140 at Coddenham and the B1079 at Otley, a review of the journey times along this corridor was undertaken and settings were updated to reflect more realistic freeflow speeds and capacities along the B1078 between Coddenham and Tunstall. These changes, along with adjustments to gap acceptance settings A140 and B1079 junctions, have been applied as part of the convergence sensitivity test which is described in this technical note.

2. SENSITIVITY TEST INPUTS

MODEL CONVERGENCE

2.1. The Department for Transport (DfT)'s web-based Transport Analysis Guidance (WebTAG) recommends a set of criteria to demonstrate convergence of a transport model, as shown in Table 1.

Table 1 – WebTAG Convergence Criteria

Measure of Convergence	Base Model Acceptable Values
Delta and %GAP	Less than 0.1% or at least stable with convergence fully documented and all other criteria met
Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 98%
Percentage of links with cost change (P2)<1%	Four consecutive iterations greater than 98%
Percentage change in total user costs (V)	Four consecutive iterations less than 0.1% (SUE only)

2.2. As part of this sensitivity test, upon recommendation from SCC, the settings within VISUM which define when the assignment iterations stop were tightened up for each of the seven modelled hours for the 'Car' assignment only (as this uses the 'Assignment ICA' algorithm). The original settings are shown in Figure 1, whilst the revised settings are shown in Figure 2.

Figure 1 – VISUM 'Car' Convergence Settings (Original)

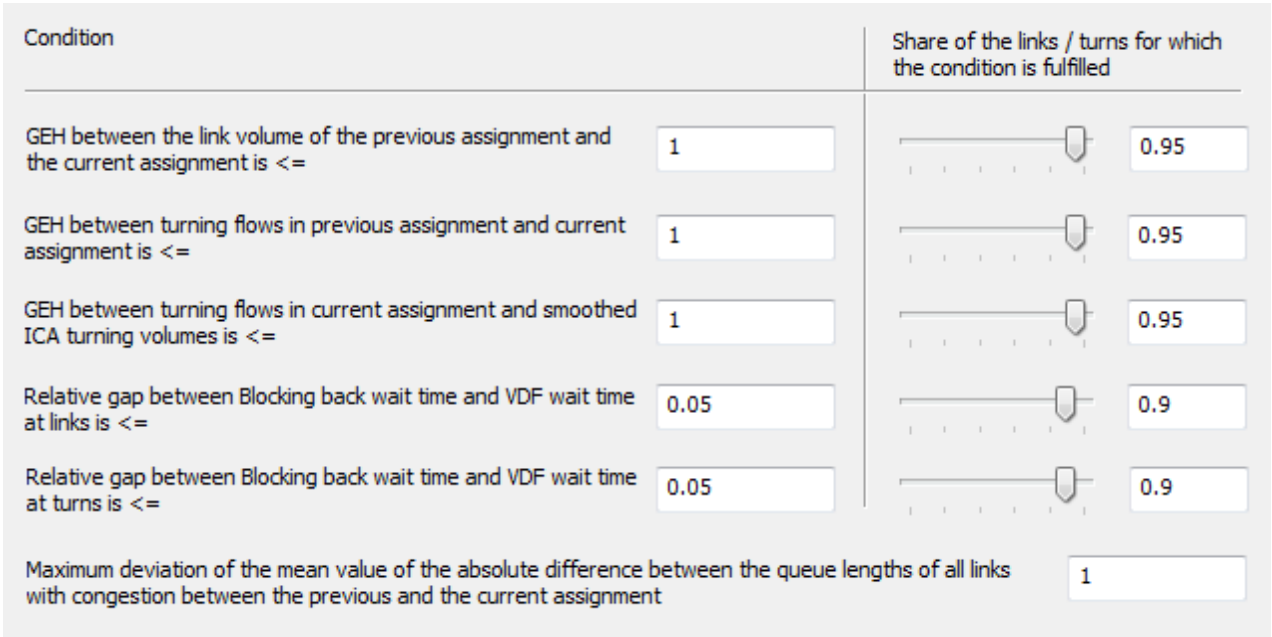
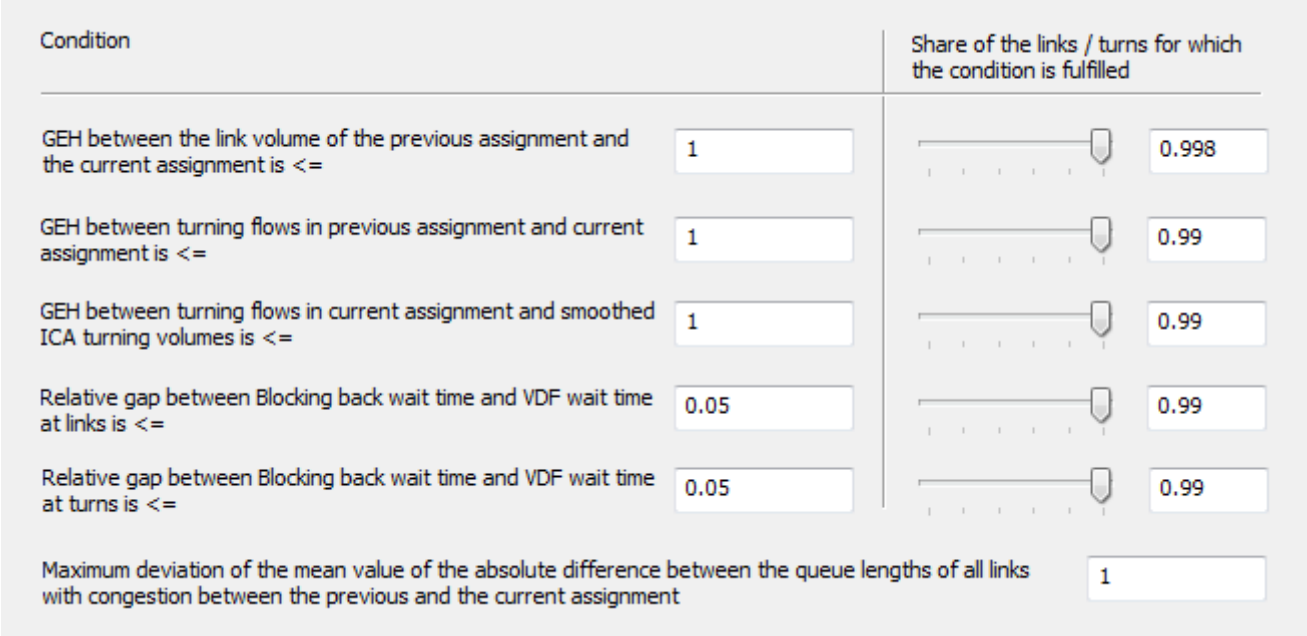


Figure 2 – VISUM 'Car' Convergence Settings (Revised)



2.1. These settings are stricter than the WebTAG requirements but since it is not possible to define that a certain number of successive iterations must achieve these criteria, the criteria were made stricter to increase the likelihood of successive iterations meeting the WebTAG criteria.

B1078 CORRIDOR

2.1. Further assessment of a substantial number of junctions across the study area has been undertaken using Junctions9 software. This has included the B1078 junctions with the A140 at Coddenham and the B1079 at Otley. The junction assessments have shown that in these two locations, VISUM may be over-predicting traffic demand which indicated a need to review the speed and capacity settings through this corridor.

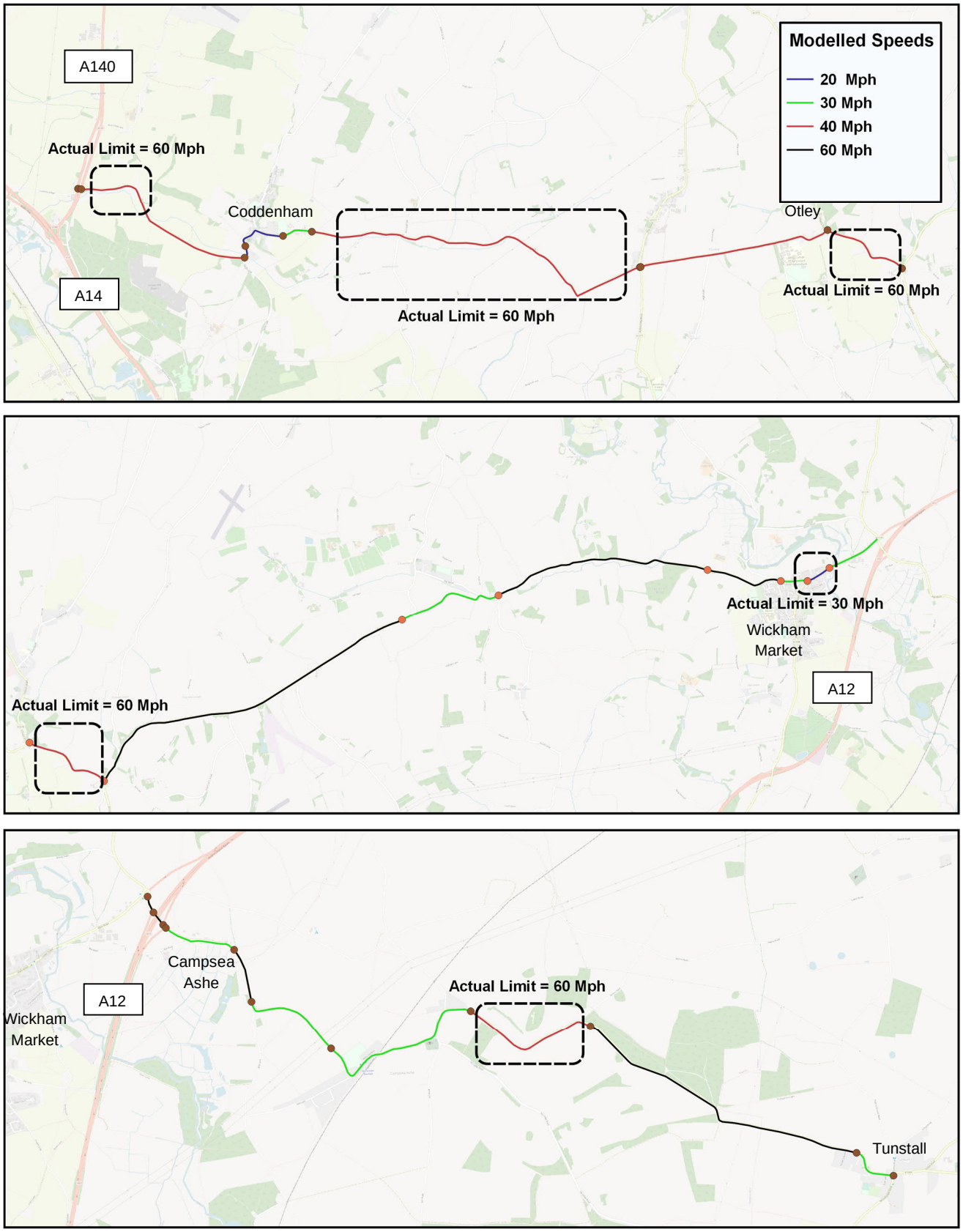
2.2. The VISUM model had been correctly coded with 60mph (national speed limit) freeflow speed for the majority of the stretch between Coddenham and Tunstall, with 30mph sections through villages. However upon further inspection of the route using Google Streetview, it is unlikely that traffic would be able to travel at much more than 40mph for parts of it due to the road widths and visibility in places. There is also a 20mph limit through Coddenham, and on-street parking in Wickham Market means that a 20mph average speed would be more appropriate.

2.3. Changes to speeds have been applied to the B1078 corridor between Coddenham and Tunstall as part of this sensitivity test, with the addition of a reduction in capacity through Coddenham village and Wickham Market appropriate for the road characteristics.

2.4. A map of the route showing modelled freeflow speeds, and associated actual speed limits where they differ from the model, is shown in Figure 3.

2.5. Furthermore, gap acceptance settings on the turning movements at the A140 / B1078 (Coddenham) and B1078 / B1079 (Otley) junctions have been increased to better reflect realistic saturation flows based on speed of opposing traffic and visibility in these locations.

Figure 3 – Speeds on B1078



3. SENSITIVITY TEST RESULTS

MODEL CONVERGENCE RESULTS

3.1. The resulting 'Car' assignment convergence values are reported in Table 2.

Table 2 – 2015 Base Year Convergence Results

Hour	Delta		Model Stability 'P'			
	Duality Gap	Iterations	n-3	n-2	n-1	n
6-7am	0.00000215624	6	99.2%	99.2%	99.7%	100%
7-8am	0.00000612882	10	99.7%	99.8%	99.7%	99.9%
8-9am	0.00000847884	20	99.9%	100%	99.8%	99.9%
3-4pm	0.00000413906	23	99.8%	99.8%	99.4%	99.8%
4-5pm	0.00000705965	45	97.7%	97.9%	99.9%	100%
5-6pm	0.00000498522	51	99.8%	99.5%	99.8%	99.8%
6-7pm	0.00000634959	13	99.6%	99.8%	98.7%	100%

3.1. The above results demonstrate the WebTAG convergence criteria is met in all cases apart from 4-5pm, where the fourth- and third-to-last iterations fall slightly short of 98%. This is simply a factor of not being able to set this definition within VISUM (i.e. to achieve criteria on a certain number of consecutive iterations) and the non-compliant 'P' statistics are just below the WebTAG criteria of 98%. The model is still stable with the results that are shown, since the settings applied were stricter than necessary to satisfy WebTAG criteria.

CALIBRATION TRAFFIC FLOWS

3.2. The traffic flow calibration and validation summary statistics of the final base model, with the refinements to the B1078 speed/capacity and stricter convergence settings (including the correction to zone connector 701), are shown in Table 3 to Table 9 for each of the seven modelled hours. These tables compare the summary statistics of the validated models and the final base models.

Table 3 – Traffic Flow Calibration and Validation Statistics – 6-7am

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	114	114	16	16
GEH<5	103	104	14	14
Flow Criteria Met	108	108	14	14
% GEH or Flow Criteria Met	96%	96%	88%	88%
GEH>10	1	1	0	0
Total Traffic Count	21,391	21,377	2,477	2,475
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	10	10	2	2
GEH<4	8	7	2	2
% GEH<4	80%	70%	100%	100%
GEH>10	0	0	0	0

Table 4 – Traffic Flow Calibration and Validation Statistics – 7-8am

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	114	114	16	16
GEH<5	95	97	14	14
Flow Criteria Met	98	96	14	14
% GEH or Flow Criteria Met	87%	86%	88%	88%
GEH>10	7	4	0	0
Total Traffic Count	47,501	47,482	6,070	6,062
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	10	10	2	2
GEH<4	8	7	1	1
% GEH<4	80%	70%	50%	50%
GEH>10	0	0	0	0

Table 5 – Traffic Flow Calibration and Validation Statistics – 8-9am

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	114	114	16	16
GEH<5	93	92	13	13
Flow Criteria Met	95	98	14	14
% GEH or Flow Criteria Met	86%	87%	88%	88%
GEH>10	5	2	0	0
Total Traffic Count	54,277	54,408	6,658	6,633
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	10	10	2	2
GEH<4	9	9	1	1
% GEH<4	90%	90%	50%	50%
GEH>10	0	0	0	0

Table 6 – Traffic Flow Calibration and Validation Statistics – 3-4pm

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	114	114	16	16
GEH<5	100	97	12	12
Flow Criteria Met	101	101	12	12
% GEH or Flow Criteria Met	89%	89%	75%	75%
GEH>10	2	1	0	0
Total Traffic Count	50,628	50,788	6,997	6,970
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	10	10	2	2
GEH<4	8	10	1	2
% GEH<4	80%	100%	50%	100%
GEH>10	0	0	0	0

Table 7 – Traffic Flow Calibration and Validation Statistics – 4-5pm

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	**FINAL BASE MODEL**	**VALIDATED MODEL**	**FINAL BASE MODEL**
Counts	114	114	16	16
GEH<5	99	99	11	11
Flow Criteria Met	101	101	13	13
% GEH or Flow Criteria Met	90%	90%	81%	81%
GEH>10	3	2	0	0
Total Traffic Count	56,368	56,525	7,615	7,577
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	**FINAL BASE MODEL**	**VALIDATED MODEL**	**FINAL BASE MODEL**
Counts	10	10	2	2
GEH<4	9	8	1	1
% GEH<4	90%	80%	50%	50%
GEH>10	0	0	1	0

Table 8 – Traffic Flow Calibration and Validation Statistics – 5-6pm

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	**FINAL BASE MODEL**	**VALIDATED MODEL**	**FINAL BASE MODEL**
Counts	114	114	16	16
GEH<5	104	105	11	10
Flow Criteria Met	100	102	14	14
% GEH or Flow Criteria Met	92%	94%	88%	88%
GEH>10	3	3	0	0
Total Traffic Count	55,388	55,551	7,051	6,991
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	**FINAL BASE MODEL**	**VALIDATED MODEL**	**FINAL BASE MODEL**
Counts	10	10	2	2
GEH<4	7	8	1	1
% GEH<4	70%	80%	50%	50%
GEH>10	0	1	1	0

Table 9 – Traffic Flow Calibration and Validation Statistics – 6-7pm

	CALIBRATION		VALIDATION	
INDIVIDUAL COUNTS (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	114	114	16	16
GEH<5	101	99	12	12
Flow Criteria Met	106	104	13	13
% GEH or Flow Criteria Met	93%	91%	81%	81%
GEH>10	3	5	0	0
Total Traffic Count	42,279	42,422	5,415	5,426
SCREENLINES (TOTAL VEHICLES)				
	VALIDATED MODEL	FINAL BASE MODEL	VALIDATED MODEL	FINAL BASE MODEL
Counts	10	10	2	2
GEH<4	8	8	1	1
% GEH<4	80%	80%	50%	50%
GEH>10	1	1	1	0

3.3. The tables above demonstrate that the refinements to the B1078 speed/capacity and stricter convergence settings (including the correction to zone connector 701), have little impact on the validation of the traffic models. On the B1078 in particular, at calibration site 14, the changes result in modelled flows that are generally closer to the observed flows than in the validated model, as shown in Table 10. These results are also presented in the 'Calibration – All Counts' tables in Appendix A.

Table 10 – Traffic flows on B1078 West of Wickham Market (calibration site 14)

	TOTAL VEHICLES							
	EASTBOUND				WESTBOUND			
Hour	OBSERVED	VALIDATED	FINAL BASE	GEH	OBSERVED	VALIDATED	FINAL BASE	GEH
6-7am	28	42	39	1.9	64	74	61	0.4
7-8am	83	93	80	0.3	119	122	103	1.5
8-9am	116	122	108	0.8	148	155	137	0.9
3-4pm	125	133	120	0.5	111	128	114	0.3
4-5pm	146	142	127	1.6	124	136	118	0.5
5-6pm	159	146	132	2.2	108	121	107	0.1
6-7pm	107	118	101	0.6	69	87	73	0.5

3.4. A comparison of the journey time validation routes, for each of the seven modelled hours, is presented in Table 11 to Table 17. The routes are shown in Figure 4 below.

Figure 4 – VISUM Journey Time Validation Routes

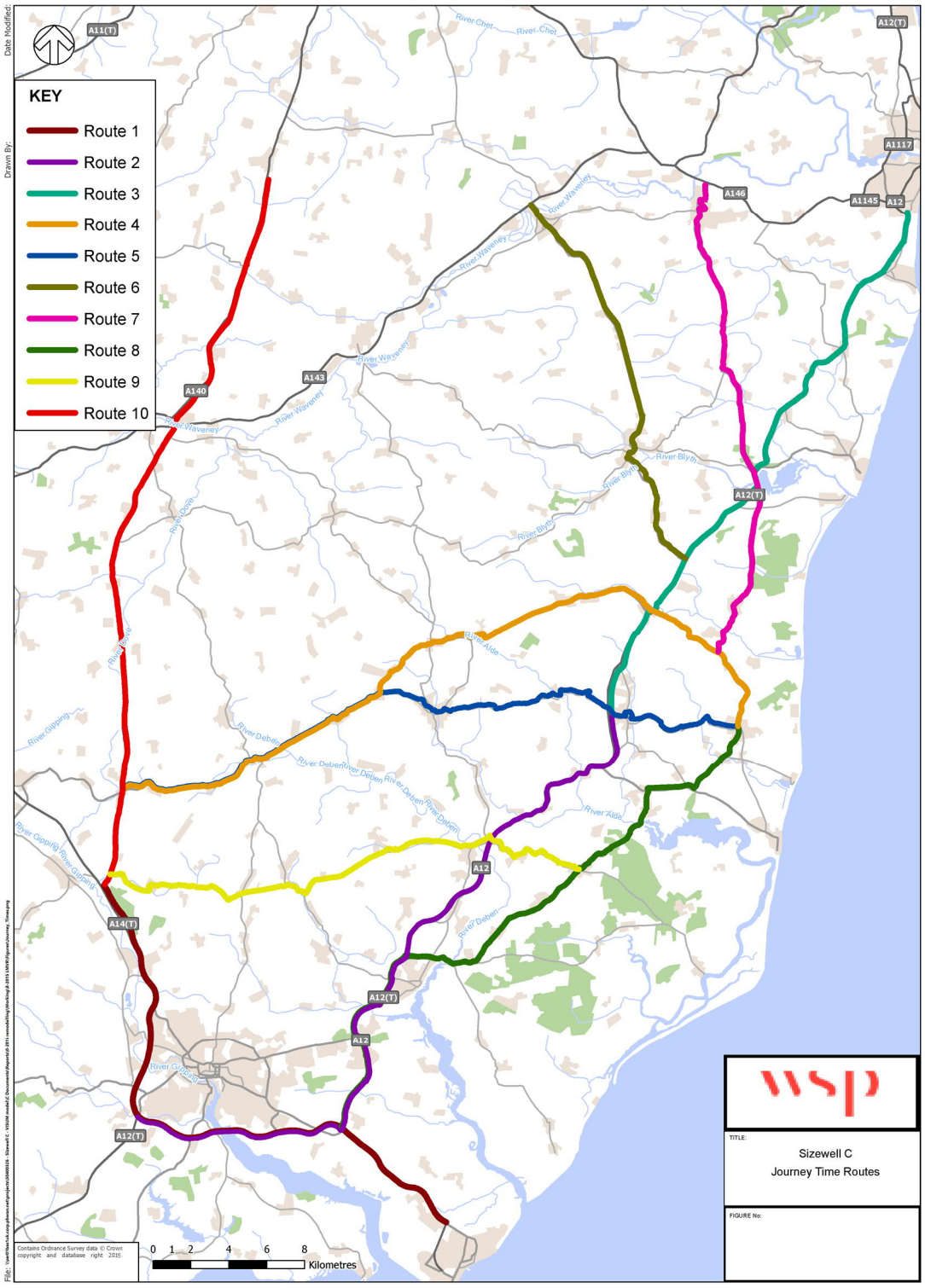


Table 11 – Journey Time Validation Statistics – 6-7am

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	19:12	18:46	✓	18:46	✓
	WB	18:30	19:14	✓	19:14	✓
Route 2	NB	27:41	27:41	✓	27:40	✓
	SB	28:41	27:48	✓	27:48	✓
Route 3	NB	27:13	25:31	✓	25:31	✓
	SB	24:51	25:36	✓	25:36	✓
Route 4	EB	43:11	41:45	✓	41:45	✓
	WB	38:08	41:29	✓	41:29	✓
Route 5	EB	45:55	40:20	✓	40:20	✓
	WB	42:12	39:47	✓	39:47	✓
Route 6	NB	23:03	23:57	✓	23:57	✓
	SB	24:32	22:00	✓	22:00	✓
Route 7	NB	26:44	26:49	✓	26:49	✓
	SB	26:29	27:27	✓	27:26	✓
Route 8	NB	35:57	30:10	×	30:10	×
	SB	33:32	29:50	✓	29:50	✓
Route 9	EB	27:34	22:23	×	26:45	✓
	WB	28:16	22:26	×	26:49	✓
Route 10	NB	31:43	32:32	✓	32:32	✓
	SB	32:12	32:40	✓	32:40	✓
Total Routes				**17**		**19**
				85%		**95%**

Table 12 – Journey Time Validation Statistics – 7-8am

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	19:14	20:21	✓	20:17	✓
	WB	18:50	20:48	✓	20:50	✓
Route 2	NB	29:17	29:36	✓	29:30	✓
	SB	31:26	30:23	✓	30:25	✓
Route 3	NB	26:59	25:44	✓	25:45	✓
	SB	27:22	26:07	✓	26:06	✓
Route 4	EB	42:07	41:57	✓	42:00	✓
	WB	40:37	41:46	✓	41:51	✓
Route 5	EB	44:03	40:28	✓	40:31	✓
	WB	43:16	40:04	✓	40:10	✓
Route 6	NB	22:59	24:14	✓	24:14	✓
	SB	24:53	22:18	✓	22:18	✓

Route 7	NB	30:42	27:06	✓	27:06	✓
	SB	25:47	27:43	✓	27:43	✓
Route 8	NB	35:16	31:06	✓	31:06	✓
	SB	36:16	31:29	✓	31:31	✓
Route 9	EB	27:24	22:33	×	26:53	✓
	WB	29:18	22:38	×	27:06	✓
Route 10	NB	33:25	33:33	✓	33:32	✓
	SB	33:10	33:59	✓	33:59	✓
Total Routes				**18**		**20**
				90%		**100%**

Table 13 – Journey Time Validation Statistics – 8-9am

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	21:38	21:16	✓	21:21	✓
	WB	20:03	21:01	✓	21:07	✓
Route 2	NB	31:20	30:33	✓	30:34	✓
	SB	36:02	32:30	✓	32:37	✓
Route 3	NB	27:16	25:55	✓	25:55	✓
	SB	27:37	26:08	✓	26:08	✓
Route 4	EB	42:10	42:06	✓	42:08	✓
	WB	43:17	42:03	✓	42:05	✓
Route 5	EB	44:27	40:40	✓	40:42	✓
	WB	45:31	40:23	✓	40:25	✓
Route 6	NB	21:58	24:26	✓	24:26	✓
	SB	25:19	22:20	✓	22:20	✓
Route 7	NB	29:51	27:30	✓	27:30	✓
	SB	26:46	27:48	✓	27:44	✓
Route 8	NB	35:43	31:33	✓	31:33	✓
	SB	41:01	33:23	×	33:31	×
Route 9	EB	31:08	22:38	×	26:57	✓
	WB	30:21	22:50	×	27:20	✓
Route 10	NB	34:36	33:56	✓	33:55	✓
	SB	33:36	34:37	✓	34:36	✓
Total Routes				**17**		**19**
				85%		**95%**

Table 14 – Journey Time Validation Statistics – 3-4pm

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	19:21	20:29	✓	20:29	✓
	WB	18:31	20:29	✓	20:29	✓
Route 2	NB	32:57	31:10	✓	31:15	✓
	SB	31:57	30:08	✓	30:10	✓
Route 3	NB	29:28	26:14	✓	26:14	✓
	SB	28:58	25:59	✓	25:59	✓
Route 4	EB	44:02	41:58	✓	42:02	✓
	WB	47:32	41:40	✓	41:42	✓
Route 5	EB	43:51	40:36	✓	40:39	✓
	WB	48:45	40:00	×	40:03	×
Route 6	NB	26:42	24:32	✓	24:32	✓
	SB	26:09	22:17	✓	22:17	✓
Route 7	NB	30:20	27:15	✓	27:15	✓
	SB	27:10	28:00	✓	27:55	✓
Route 8	NB	38:14	32:37	✓	32:45	✓
	SB	35:55	31:05	✓	31:10	✓
Route 9	EB	29:30	22:33	×	26:53	✓
	WB	28:27	22:31	×	26:55	✓
Route 10	NB	38:26	33:11	✓	33:11	✓
	SB	34:09	33:25	✓	33:25	✓
Total Routes				**17**		**19**
				85%		**95%**

Table 15 – Journey Time Validation Statistics – 4-5pm

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	18:43	21:20	✓	21:23	✓
	WB	18:56	21:43	✓	21:43	✓
Route 2	NB	32:52	32:14	✓	32:22	✓
	SB	33:37	31:48	✓	31:55	✓
Route 3	NB	32:22	26:29	×	26:29	×
	SB	28:50	25:57	✓	25:56	✓
Route 4	EB	42:06	42:09	✓	42:13	✓
	WB	44:27	41:47	✓	41:50	✓
Route 5	EB	43:29	40:49	✓	40:53	✓
	WB	45:55	40:05	✓	40:09	✓
Route 6	NB	27:03	24:38	✓	24:39	✓
	SB	25:17	22:13	✓	22:13	✓

Route 7	NB	29:38	27:11	✓	27:11	✓
	SB	28:16	27:57	✓	27:50	✓
Route 8	NB	39:08	33:03	×	33:17	✓
	SB	37:45	31:57	×	32:08	✓
Route 9	EB	29:40	22:40	×	27:03	✓
	WB	29:14	22:40	×	27:16	✓
Route 10	NB	34:32	33:28	✓	33:28	✓
	SB	34:20	34:18	✓	34:18	✓
Total Routes				**15**		**19**
				75%		**95%**

Table 16 – Journey Time Validation Statistics – 5-6pm

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	18:53	21:09	✓	21:15	✓
	WB	19:34	21:19	✓	21:20	✓
Route 2	NB	32:51	31:42	✓	31:38	✓
	SB	32:04	30:23	✓	30:26	✓
Route 3	NB	28:17	26:22	✓	26:22	✓
	SB	28:40	25:51	✓	25:51	✓
Route 4	EB	41:46	42:04	✓	42:07	✓
	WB	41:38	41:44	✓	41:46	✓
Route 5	EB	42:13	40:45	✓	40:48	✓
	WB	43:33	40:04	✓	40:08	✓
Route 6	NB	26:42	24:31	✓	24:31	✓
	SB	24:56	22:14	✓	22:14	✓
Route 7	NB	29:32	27:07	✓	27:07	✓
	SB	28:25	27:55	✓	27:49	✓
Route 8	NB	38:44	33:04	✓	32:45	×
	SB	36:12	31:14	✓	31:19	✓
Route 9	EB	29:39	22:41	×	27:03	✓
	WB	29:25	22:40	×	27:13	✓
Route 10	NB	37:41	33:17	✓	33:17	✓
	SB	32:51	33:46	✓	33:45	✓
Total Routes				**18**		**19**
				90%		**95%**

Table 17 – Journey Time Validation Statistics – 6-7pm

		OBSERVED	VALIDATED MODEL		FINAL BASE MODEL	
Route	**Dir**	**Observed Time (mm:ss)**	**Modelled Time (mm:ss)**	**Within Limits of Observed**	**Modelled Time (mm:ss)**	**Within Limits of Observed**
Route 1	EB	17:42	19:35	✓	19:36	✓
	WB	17:28	19:40	✓	19:41	✓
Route 2	NB	29:51	29:15	✓	29:14	✓
	SB	29:05	28:30	✓	28:30	✓
Route 3	NB	26:52	25:50	✓	25:50	✓
	SB	26:44	25:41	✓	25:41	✓
Route 4	EB	41:40	41:50	✓	41:52	✓
	WB	42:28	41:32	✓	41:34	✓
Route 5	EB	42:09	40:26	✓	40:28	✓
	WB	41:57	39:52	✓	39:54	✓
Route 6	NB	25:56	24:06	✓	24:06	✓
	SB	24:11	22:06	✓	22:06	✓
Route 7	NB	28:55	26:57	✓	26:57	✓
	SB	28:03	27:39	✓	27:36	✓
Route 8	NB	36:55	31:10	×	31:11	×
	SB	32:46	30:21	✓	30:22	✓
Route 9	EB	28:26	22:31	×	26:52	✓
	WB	29:26	22:30	×	26:55	✓
Route 10	NB	32:36	32:49	✓	32:47	✓
	SB	32:12	33:03	✓	33:03	✓
Total Routes				**17**		**19**
				85%		**95%**

3.5. The tables above demonstrate that the refinements to the B1078 speed/capacity and stricter convergence settings (including the correction to zone connector 701), have little impact on modelled journey times apart from on route 9, the B1078 corridor, which is vastly improved in all seven modelled hours such that the modelled journey times fall within WebTAG range of the observed times.

4. SUMMARY

4.1. This technical note documents the calibration and validation results of a sensitivity test carried out on the 2015 base model, which includes:

- refinement to speed and capacity settings along the B1078 corridor between the A140 junction at Coddenham and the B1069 junction at Tunstall
- stricter convergence settings
- correction to the zone 701 centroid connector which has previously been included

4.2. The results of the 'Final Base' model test show that these updates have little impact on traffic flows, routing and journey times in the 2015 base year apart from an improvement in journey time along the B1078 corridor. The stricter convergence settings will have also improved the stability of the model. Therefore, the robustness of the validated base models is maintained as a suitable platform for assessing the future year scenarios.

4.3. All seven modelled hours have been rerun with these updates. Detailed traffic flow comparisons are provided in Appendix A.

4.4. For robustness, the future year modelling outputs will be compared against these Final Base outputs.

www.wsp.com

Appendix A

Detailed Calibration and Validation Statistics

Table A.1 – Traffic Flow Calibration – Screenlines – 6-7am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	18	24	6	1.3	4	1	-3	1.9	2	0	-2	2.0	24	25	1	0.2
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	49	36	-13	2.0	10	4	-6	2.3	5	5	0	0.0	64	45	-19	2.6
SCC_M017_NB	M017 (A144 Ilketshall)	NB	62	59	-3	0.4	13	8	-5	1.5	7	12	5	1.6	82	79	-3	0.3
ATC_16_NB	A145 North of Blythburgh and B1123	NB	20	22	2	0.4	6	5	-1	0.4	4	7	3	1.3	30	34	4	0.7
ATC_17_NB	A12 North of Blythburgh and A1095	NB	63	70	7	0.9	13	14	1	0.3	15	13	-2	0.5	91	97	6	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	10	14	4	1.2	2	1	-1	0.8	1	0	-1	1.4	13	15	2	0.5
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	42	28	-14	2.4	9	4	-5	2.0	5	4	-1	0.5	56	36	-20	2.9
SCC_M017_SB	M017 (A144 Ilketshall)	SB	65	67	2	0.2	14	13	-1	0.3	7	6	-1	0.4	86	86	0	0.0
ATC_16_SB	A145 North of Blythburgh and B1123	SB	35	35	0	0.0	10	4	-6	2.3	7	12	5	1.6	52	51	-1	0.1
ATC_17_SB	A12 North of Blythburgh and A1095	SB	184	186	2	0.1	34	29	-5	0.9	16	15	-1	0.3	234	230	-4	0.3
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	310	247	-63	3.8	60	63	3	0.4	79	68	-11	1.3	449	378	-71	3.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	14	17	3	0.8	3	5	2	1.0	1	1	0	0.0	18	23	5	1.1
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	300	146	-154	10.3	43	44	1	0.2	34	22	-12	2.3	377	212	-165	9.6
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	49	47	-2	0.3	5	10	5	1.8	4	3	-1	0.5	58	60	2	0.3
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	16	30	14	2.9	3	5	2	1.0	2	1	-1	0.8	21	36	15	2.8
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	290	272	-18	1.1	58	49	-9	1.2	31	20	-11	2.2	379	341	-38	2.0
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	103	113	10	1.0	16	12	-4	1.1	5	3	-2	1.0	124	128	4	0.4
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	32	35	3	0.5	5	5	0	0.0	4	4	0	0.0	41	44	3	0.5
ATC_14_EB	B1078 West of Wickham Market	EB	24	31	7	1.3	3	5	2	1.0	1	3	2	1.4	28	39	11	1.9
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	284	334	50	2.8	65	66	1	0.1	15	19	4	1.0	364	419	55	2.8
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	131	71	-60	6.0	21	8	-13	3.4	3	3	0	0.0	155	82	-73	6.7
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	247	255	8	0.5	101	85	-16	1.7	68	56	-12	1.5	416	396	-20	1.0
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	28	27	-1	0.2	5	9	4	1.5	2	3	1	0.6	35	39	4	0.7
ATC_14_WB	B1078 West of Wickham Market	WB	49	44	-5	0.7	11	12	1	0.3	4	5	1	0.5	64	61	-3	0.4
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	166	247	81	5.6	21	31	10	2.0	12	19	7	1.8	199	297	98	6.2
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	68	24	-44	6.5	16	12	-4	1.1	5	3	-2	1.0	89	39	-50	6.3
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	386	317	-69	3.7	97	83	-14	1.5	39	46	7	1.1	522	446	-76	3.5

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	58	54	-4	0.5	5	6	1	0.4	2	2	0	0.0	65	62	-3	0.4
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	35	34	-1	0.2	1	3	2	1.4	1	2	1	0.8	37	39	2	0.3
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	104	202	98	7.9	28	44	16	2.7	24	29	5	1.0	156	275	119	8.1
ATC_103-1_EB	Road to Martlesham	EB	16	60	44	7.1	5	6	1	0.4	1	0	-1	1.4	22	66	44	6.6
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	61	67	6	0.8	15	27	12	2.6	7	13	6	1.9	83	107	24	2.5
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	236	240	4	0.3	23	34	11	2.1	10	10	0	0.0	269	284	15	0.9
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	29	30	1	0.2	6	5	-1	0.4	3	2	-1	0.6	38	37	-1	0.2
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	23	32	9	1.7	19	11	-8	2.1	4	2	-2	1.2	46	45	-1	0.1
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	225	275	50	3.2	44	64	20	2.7	15	26	11	2.4	284	365	81	4.5
ATC_103-1_WB	Road to Martlesham	WB	19	17	-2	0.5	7	5	-2	0.8	2	0	-2	2.0	28	22	-6	1.2
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	37	59	22	3.2	10	10	0	0.0	4	7	3	1.3	51	76	25	3.1
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	158	175	17	1.3	20	21	1	0.2	6	7	1	0.4	184	203	19	1.4
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	66	64	-2	0.2	9	1	-8	3.6	2	0	-2	2.0	77	65	-12	1.4
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	14	27	13	2.9	8	6	-2	0.8	2	2	0	0.0	24	35	11	2.0
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	74	73	-1	0.1	7	10	3	1.0	2	3	1	0.6	83	86	3	0.3
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	27	27	0	0.0	3	3	0	0.0	1	0	-1	1.4	31	30	-1	0.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	11	8	-3	1.0	1	0	-1	1.4	1	0	-1	1.4	13	8	-5	1.5
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	40	43	3	0.5	8	7	-1	0.4	1	3	2	1.4	49	53	4	0.6
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	68	64	-4	0.5	11	13	2	0.6	5	3	-2	1.0	84	80	-4	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	26	27	1	0.2	3	2	-1	0.6	0	0	0	0.0	29	29	0	0.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	212	211	-1	0.1	46	32	-14	2.2	33	37	4	0.7	291	280	-11	0.7
	Southbound	336	330	-6	0.3	69	51	-18	2.3	36	37	1	0.2	441	418	-23	1.1
Northern	Northbound	673	457	-216	9.1	111	122	11	1.0	118	94	-24	2.3	902	673	-229	8.2
	Southbound	409	415	6	0.3	77	66	-11	1.3	38	24	-14	2.5	524	505	-19	0.8
West of A12	Eastbound	718	726	8	0.3	195	169	-26	1.9	91	85	-6	0.6	1004	980	-24	0.8
	Westbound	697	659	-38	1.5	150	147	-3	0.2	62	76	14	1.7	909	882	-27	0.9
East of A12	Eastbound	510	657	147	6.1	77	120	43	4.3	45	56	11	1.5	632	833	201	7.4
	Westbound	491	588	97	4.2	106	116	10	0.9	34	44	10	1.6	631	748	117	4.5
Leiston	Inbound	181	191	10	0.7	27	20	-7	1.4	7	5	-2	0.8	215	216	1	0.1
	Outbound	145	142	-3	0.3	23	22	-1	0.2	7	6	-1	0.4	175	170	-5	0.4

Table A.2 – Traffic Flow Calibration – All Counts – 6-7am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	41	42	1	0.2	✓	12	5	-7	2.4	✓	4	2	-2	1.2	✓	57	49	-8	1.1	✓
		SB	ATC_2_SB	83	88	5	0.5	✓	9	7	-2	0.7	✓	4	2	-2	1.2	✓	96	97	1	0.1	✓
3	King Georges Avenue	EB	ATC_3_EB	121	77	-44	4.4	✓	18	0	-18	6.0	✓	1	0	-1	1.4	✓	140	77	-63	6.0	✓
		WB	ATC_3_WB	22	11	-11	2.7	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	27	12	-15	3.4	✓
4	Lovers Lane	NB	ATC_4_NB	11	8	-3	1.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	13	8	-5	1.5	✓
		SB	ATC_4_SB	66	64	-2	0.2	✓	9	1	-8	3.6	✓	2	0	-2	2.0	✓	77	65	-12	1.4	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	74	73	-1	0.1	✓	7	10	3	1.0	✓	2	3	1	0.6	✓	83	86	3	0.3	✓
		SB	ATC_7_SB	68	64	-4	0.5	✓	11	13	2	0.6	✓	5	3	-2	1.0	✓	84	80	-4	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	27	27	0	0.0	✓	3	3	0	0.0	✓	1	0	-1	1.4	✓	31	30	-1	0.2	✓
		SB	ATC_8_SB	26	27	1	0.2	✓	3	2	-1	0.6	✓	0	0	0	0.0	✓	29	29	0	0.0	✓
13	A12 East of Farnham	EB	ATC_13_EB	176	170	-6	0.5	✓	32	34	2	0.3	✓	31	24	-7	1.3	✓	239	228	-11	0.7	✓
		WB	ATC_13_WB	251	244	-7	0.4	✓	55	51	-4	0.5	✓	21	22	1	0.2	✓	327	317	-10	0.6	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	24	31	7	1.3	✓	3	5	2	1.0	✓	1	3	2	1.4	✓	28	39	11	1.9	✓
		WB	ATC_14_WB	49	44	-5	0.7	✓	11	12	1	0.3	✓	4	5	1	0.5	✓	64	61	-3	0.4	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	20	22	2	0.4	✓	6	5	-1	0.4	✓	4	7	3	1.3	✓	30	34	4	0.7	✓
		SB	ATC_16_SB	35	35	0	0.0	✓	10	4	-6	2.3	✓	7	12	5	1.6	✓	52	51	-1	0.1	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	63	70	7	0.9	✓	13	14	1	0.3	✓	15	13	-2	0.5	✓	91	97	6	0.6	✓
		SB	ATC_17_SB	184	186	2	0.1	✓	34	29	-5	0.9	✓	16	15	-1	0.3	✓	234	230	-4	0.3	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	49	47	-2	0.3	✓	5	10	5	1.8	✓	4	3	-1	0.5	✓	58	60	2	0.3	✓
		WB	ATC_81_WB	103	113	10	1.0	✓	16	12	-4	1.1	✓	5	3	-2	1.0	✓	124	128	4	0.4	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	300	146	-154	10.3	✗	43	44	1	0.2	✓	34	22	-12	2.3	✓	377	212	-165	9.6	✗
		SB	ATC_82-1_SB	290	272	-18	1.1	✓	58	49	-9	1.2	✓	31	20	-11	2.2	✓	379	341	-38	2.0	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	104	202	98	7.9	✓	28	44	16	2.7	✓	24	29	5	1.0	✓	156	275	119	8.1	✗
		WB	ATC_82-2_WB	225	275	50	3.2	✓	44	64	20	2.7	✓	15	26	11	2.4	✓	284	365	81	4.5	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	102	107	5	0.5	✓	13	14	1	0.3	✓	26	19	-7	1.5	✓	141	140	-1	0.1	✓
		WB	ATC_84_WB	179	176	-3	0.2	✓	41	40	-1	0.2	✓	20	23	3	0.6	✓	240	239	-1	0.1	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	18	20	2	0.5	✓	6	7	1	0.4	✓	2	0	-2	2.0	✓	26	27	1	0.2	✓
		WB	ATC_87_WB	23	32	9	1.7	✓	2	6	4	2.0	✓	2	0	-2	2.0	✓	27	38	11	1.9	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	236	240	4	0.3	✓	23	34	11	2.1	✓	10	10	0	0.0	✓	269	284	15	0.9	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	158	175	17	1.3	✓	20	21	1	0.2	✓	6	7	1	0.4	✓	184	203	19	1.4	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	133	132	-1	0.1	✓	20	8	-12	3.2	✓	9	6	-3	1.1	✓	162	146	-16	1.3	✓
		SB	ATC_101-4_SB	109	100	-9	0.9	✓	14	12	-2	0.6	✓	3	5	2	1.0	✓	126	117	-9	0.8	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	386	317	-69	3.7	✓	97	83	-14	1.5	✓	39	46	7	1.1	✓	522	446	-76	3.5	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	247	255	8	0.5	✓	101	85	-16	1.7	✓	68	56	-12	1.5	✓	416	396	-20	1.0	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	131	71	-60	6.0	✓	21	8	-13	3.4	✓	3	3	0	0.0	✓	155	82	-73	6.7	✓
		WB	ATC_102-1_WB	68	24	-44	6.5	✓	16	12	-4	1.1	✓	5	3	-2	1.0	✓	89	39	-50	6.3	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	480	419	-61	2.9	✓	112	111	-1	0.1	✓	44	47	3	0.4	✓	636	577	-59	2.4	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	433	362	-71	3.6	✓	63	75	12	1.4	✓	39	47	8	1.2	✓	535	484	-51	2.3	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	61	67	6	0.8	✓	15	27	12	2.6	✓	7	13	6	1.9	✓	83	107	24	2.5	✓
		WB	ATC_102-4_WB	37	59	22	3.2	✓	10	10	0	0.0	✓	4	7	3	1.3	✓	51	76	25	3.1	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	16	60	44	7.1	✓	5	6	1	0.4	✓	1	0	-1	1.4	✓	22	66	44	6.6	✓
		WB	ATC_103-1_WB	19	17	-2	0.5	✓	7	5	-2	0.8	✓	2	0	-2	2.0	✓	28	22	-6	1.2	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	284	334	50	2.8	✓	65	66	1	0.1	✓	15	19	4	1.0	✓	364	419	55	2.8	✓
		WB	ATC_103-4_WB	166	247	81	5.6	✓	21	31	10	2.0	✓	12	19	7	1.8	✓	199	297	98	6.2	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	328	263	-65	3.8	✓	85	70	-15	1.7	✓	46	48	2	0.3	✓	459	381	-78	3.8	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	469	374	-95	4.6	✓	122	110	-12	1.1	✓	52	51	-1	0.1	✓	643	535	-108	4.5	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	1	1	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	1	1	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	8	8	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	8	8	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	58	54	-4	0.5	✓	5	6	1	0.4	✓	2	2	0	0.0	✓	65	62	-3	0.4	✓
		WB	ATC_105-1_WB	29	30	1	0.2	✓	6	5	-1	0.4	✓	3	2	-1	0.6	✓	38	37	-1	0.2	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	118	115	-3	0.3	✓	27	26	-1	0.2	✓	24	25	1	0.2	✓	169	166	-3	0.2	✓
		SB	ATC_105-2_SB	200	192	-8	0.6	✓	42	42	0	0.0	✓	25	24	-1	0.2	✓	267	258	-9	0.6	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	28	27	-1	0.2	✓	5	9	4	1.5	✓	2	3	1	0.6	✓	35	39	4	0.7	✓
		SB	ATC_202-1_SB	32	35	3	0.5	✓	5	5	0	0.0	✓	4	4	0	0.0	✓	41	44	3	0.5	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	113	116	3	0.3	✓	28	26	-2	0.4	✓	25	23	-2	0.4	✓	166	165	-1	0.1	✓
		WB	ATC_202-2_WB	167	169	2	0.2	✓	44	41	-3	0.5	✓	25	22	-3	0.6	✓	236	232	-4	0.3	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	103	102	-1	0.1	✓	19	22	3	0.7	✓	19	19	0	0.0	✓	141	143	2	0.2	✓
		SB	ATC_202-3_SB	160	162	2	0.2	✓	35	33	-2	0.3	✓	21	19	-2	0.4	✓	216	214	-2	0.1	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	35	34	-1	0.2	✓	1	3	2	1.4	✓	1	2	1	0.8	✓	37	39	2	0.3	✓
		WB	ATC_204_WB	23	32	9	1.7	✓	19	11	-8	2.1	✓	4	2	-2	1.2	✓	46	45	-1	0.1	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	42	35	-7	1.1	✓	7	9	2	0.7	✓	5	4	-1	0.5	✓	54	48	-6	0.8	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	80	74	-6	0.7	✓	10	10	0	0.0	✓	4	3	-1	0.5	✓	94	87	-7	0.7	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	34	31	-3	0.5	✓	6	9	3	1.1	✓	4	1	-3	1.9	✓	44	41	-3	0.5	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	35	34	-1	0.2	✓	6	3	-3	1.4	✓	4	3	-1	0.5	✓	45	40	-5	0.8	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	49	36	-13	2.0	✓	10	4	-6	2.3	✓	5	5	0	0.0	✓	64	45	-19	2.6	✓
		SB	SCC_A3489_SB	42	28	-14	2.4	✓	9	4	-5	2.0	✓	5	4	-1	0.5	✓	56	36	-20	2.9	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	18	24	6	1.3	✓	4	1	-3	1.9	✓	2	0	-2	2.0	✓	24	25	1	0.2	✓
		SB	SCC_A3527_SB	10	14	4	1.2	✓	2	1	-1	0.8	✓	1	0	-1	1.4	✓	13	15	2	0.5	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	62	59	-3	0.4	✓	13	8	-5	1.5	✓	7	12	5	1.6	✓	82	79	-3	0.3	✓
		SB	SCC_M017_SB	65	67	2	0.2	✓	14	13	-1	0.3	✓	7	6	-1	0.4	✓	86	86	0	0.0	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	14	17	3	0.8	✓	3	5	2	1.0	✓	1	1	0	0.0	✓	18	23	5	1.1	✓
		SB	SCC_M055_SB	16	30	14	2.9	✓	3	5	2	1.0	✓	2	1	-1	0.8	✓	21	36	15	2.8	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	254	259	5	0.3	✓	54	56	2	0.3	✓	27	39	12	2.1	✓	335	354	19	1.0	✓
		SB	SCC_Y151_SB	353	433	80	4.0	✓	75	95	20	2.2	✓	38	80	42	5.5	✓	466	608	142	6.1	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	313	232	-81	4.9	✓	66	36	-30	4.2	✓	34	21	-13	2.5	✓	413	289	-124	6.6	✗
		WB	SCC_Y189_WB	410	403	-7	0.3	✓	87	44	-43	5.3	✓	44	30	-14	2.3	✓	541	477	-64	2.8	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	81	80	-1	0.1	✓	25	20	-5	1.1	✓	2	4	2	1.2	✓	108	104	-4	0.4	✓
		EB	MCC_302_B_EB	85	86	1	0.1	✓	17	12	-5	1.3	✓	10	5	-5	1.8	✓	112	103	-9	0.9	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	35	37	2	0.3	✓	12	6	-6	2.0	✓	7	2	-5	2.4	✓	54	45	-9	1.3	✓
		SB	MCC_302_C_SB	29	32	3	0.5	✓	6	5	-1	0.4	✓	2	2	0	0.0	✓	37	39	2	0.3	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	73	75	2	0.2	✓	13	14	1	0.3	✓	7	7	0	0.0	✓	93	96	3	0.3	✓
		WB	MCC_302_D_WB	71	74	3	0.4	✓	26	22	-4	0.8	✓	3	5	2	1.0	✓	100	101	1	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	57	52	-5	0.7	✓	11	7	-4	1.3	✓	4	2	-2	1.2	✓	72	61	-11	1.3	✓
		SB	MCC_303_A_SB	37	35	-2	0.3	✓	10	6	-4	1.4	✓	5	2	-3	1.6	✓	52	43	-9	1.3	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	14	27	13	2.9	✓	8	6	-2	0.8	✓	2	2	0	0.0	✓	24	35	11	2.0	✓
		WB	MCC_303_B_WB	40	43	3	0.5	✓	8	7	-1	0.4	✓	1	3	2	1.4	✓	49	53	4	0.6	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	48	51	3	0.4	✓	8	8	0	0.0	✓	5	3	-2	1.0	✓	61	62	1	0.1	✓
		NB	MCC_303_C_NB	61	58	-3	0.4	✓	9	8	-1	0.3	✓	3	3	0	0.0	✓	73	69	-4	0.5	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	41	31	-10	1.7	✓	7	4	-3	1.3	✓	0	2	2	2.0	✓	48	37	-11	1.7	✓
		EB	MCC_303_D_EB	22	24	2	0.4	✓	7	5	-2	0.8	✓	2	2	0	0.0	✓	31	31	0	0.0	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	39	30	-9	1.5	✓	10	5	-5	1.8	✓	1	2	1	0.8	✓	50	37	-13	2.0	✓
		NB	MCC_304_A_NB	31	23	-8	1.5	✓	8	4	-4	1.6	✓	4	2	-2	1.2	✓	43	29	-14	2.3	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	34	43	9	1.5	✓	13	9	-4	1.2	✓	2	1	-1	0.8	✓	49	53	4	0.6	✓
		EB	MCC_304_B_EB	102	107	5	0.5	✓	18	11	-7	1.8	✓	0	1	1	1.4	✓	120	119	-1	0.1	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	44	33	-11	1.8	✓	7	1	-6	3.0	✓	4	1	-3	1.9	✓	55	35	-20	3.0	✓
		SB	MCC_304_C_SB	23	16	-7	1.6	✓	6	1	-5	2.7	✓	1	1	0	0.0	✓	30	18	-12	2.4	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	68	64	-4	0.5	✓	9	6	-3	1.1	✓	0	0	0	0.0	✓	77	70	-7	0.8	✓
		WB	MCC_304_D_WB	29	23	-6	1.2	✓	7	5	-2	0.8	✓	2	0	-2	2.0	✓	38	28	-10	1.7	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	357	328	-29	1.6	✓	13	12	-1	0.3	✓	16	21	5	1.2	✓	386	361	-25	1.3	✓
30013377		SB	30013377	168	167	-1	0.1	✓	10	9	-1	0.3	✓	16	21	5	1.2	✓	194	197	3	0.2	✓
30013396	A14 - J56 Through	EB	30013396	635	621	-14	0.6	✓	70	67	-3	0.4	✓	268	248	-20	1.2	✓	973	936	-37	1.2	✓
30013397	A14 - J56 EXIT	EB	30013397	113	104	-9	0.9	✓	10	14	4	1.2	✓	15	20	5	1.2	✓	138	138	0	0.0	✓
30013398	A14 - J57 Through	EB	30013398	588	589	1	0.0	✓	49	61	12	1.6	✓	255	243	-12	0.8	✓	892	893	1	0.0	✓
30013399	A14 - J57 EXIT	EB	30013399	239	241	2	0.1	✓	30	26	-4	0.8	✓	40	26	-14	2.4	✓	309	293	-16	0.9	✓
30013402	A14 - J57 Through	WB	30013402	651	594	-57	2.3	✓	48	63	15	2.0	✓	368	311	-57	3.1	✓	1067	968	-99	3.1	✓
30013403	A14 - J57 EXIT	WB	30013403	140	144	4	0.3	✓	6	21	15	4.1	✓	12	3	-9	3.3	✓	158	168	10	0.8	✓
30013406	A14 - J55 Through	WB	30013406	418	360	-58	2.9	✓	48	36	-12	1.9	✓	249	224	-25	1.6	✓	715	620	-95	3.7	✓
30013407	A14 - J55 EXIT	WB	30013407	561	495	-66	2.9	✓	55	58	3	0.4	✓	178	155	-23	1.8	✓	794	708	-86	3.1	✓
30013408	A14 - J55 Through	EB	30013408	316	312	-4	0.2	✓	31	26	-5	0.9	✓	184	156	-28	2.1	✓	531	494	-37	1.6	✓
30013410	A14 - J53 Through	NB	30013410	793	471	-322	12.8	×	114	60	-54	5.8	✓	374	272	-102	5.7	×	1281	803	-478	14.8	×
30013411	A14 - J53 EXIT	NB	30013411	80	45	-35	4.4	✓	11	9	-2	0.6	✓	7	3	-4	1.8	✓	98	57	-41	4.7	✓
30013415	A14 - J51 EXIT	NB	30013415	310	247	-63	3.8	✓	60	63	3	0.4	✓	79	68	-11	1.3	✓	449	378	-71	3.5	✓
30013417	A14 - J51 EXIT	SB	30013417	69	50	-19	2.5	✓	13	15	2	0.5	✓	20	14	-6	1.5	✓	102	79	-23	2.4	✓
30013418	A14 - between J51 and J50	NB	30013418	848	791	-57	2.0	✓	108	111	3	0.3	✓	339	280	-59	3.4	✓	1295	1182	-113	3.2	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	2	107	98%
LGV	114	0	111	100%
HGV	114	0	112	99%
Total Vehs	114	1	104	96%

www.wsp.com

Table A.3 – Traffic Flow Calibration – Screenlines – 7-8am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	34	44	10	1.6	7	2	-5	2.4	3	0	-3	2.4	44	46	2	0.3
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	91	78	-13	1.4	18	8	-10	2.8	7	7	0	0.0	116	93	-23	2.2
SCC_M017_NB	M017 (A144 Ilketshall)	NB	131	126	-5	0.4	26	19	-7	1.5	10	17	7	1.9	167	162	-5	0.4
ATC_16_NB	A145 North of Blythburgh and B1123	NB	60	61	1	0.1	10	12	2	0.6	6	9	3	1.1	76	82	6	0.7
ATC_17_NB	A12 North of Blythburgh and A1095	NB	188	193	5	0.4	29	34	5	0.9	22	21	-1	0.2	239	248	9	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	28	32	4	0.7	6	3	-3	1.4	2	0	-2	2.0	36	35	-1	0.2
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	112	96	-16	1.6	22	14	-8	1.9	9	7	-2	0.7	143	117	-26	2.3
SCC_M017_SB	M017 (A144 Ilketshall)	SB	198	198	0	0.0	39	38	-1	0.2	16	12	-4	1.1	253	248	-5	0.3
ATC_16_SB	A145 North of Blythburgh and B1123	SB	93	95	2	0.2	31	14	-17	3.6	16	21	5	1.2	140	130	-10	0.9
ATC_17_SB	A12 North of Blythburgh and A1095	SB	365	370	5	0.3	65	53	-12	1.6	23	22	-1	0.2	453	445	-8	0.4
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	485	444	-41	1.9	70	81	11	1.3	104	94	-10	1.0	659	619	-40	1.6
SCC_M055_NB	M055 (B1077 Swilland)	NB	58	65	7	0.9	12	13	1	0.3	5	1	-4	2.3	75	79	4	0.5
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	630	423	-207	9.0	104	126	22	2.1	57	44	-13	1.8	791	593	-198	7.5
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	167	170	3	0.2	15	26	11	2.4	6	6	0	0.0	188	202	14	1.0
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	78	95	17	1.8	15	13	-2	0.5	6	2	-4	2.0	99	110	11	1.1
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	718	716	-2	0.1	104	83	-21	2.2	35	30	-5	0.9	857	829	-28	1.0
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	272	300	28	1.7	46	37	-9	1.4	9	5	-4	1.5	327	342	15	0.8
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	123	127	4	0.4	29	27	-2	0.4	11	8	-3	1.0	163	162	-1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	57	56	-1	0.1	19	18	-1	0.2	7	6	-1	0.4	83	80	-3	0.3
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	714	883	169	6.0	143	148	5	0.4	29	32	3	0.5	886	1063	177	5.7
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	412	294	-118	6.3	49	26	-23	3.8	13	6	-7	2.3	474	326	-148	7.4
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	669	605	-64	2.5	248	177	-71	4.9	120	105	-15	1.4	1037	887	-150	4.8
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	65	64	-1	0.1	10	19	9	2.4	4	6	2	0.9	79	89	10	1.1
ATC_14_WB	B1078 West of Wickham Market	WB	97	77	-20	2.1	18	19	1	0.2	4	7	3	1.3	119	103	-16	1.5
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	505	601	96	4.1	42	58	16	2.3	13	27	14	3.1	560	686	126	5.0
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	215	249	34	2.2	53	37	-16	2.4	7	6	-1	0.4	275	292	17	1.0
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	840	842	2	0.1	165	125	-40	3.3	78	77	-1	0.1	1083	1044	-39	1.2

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	164	163	-1	0.1	33	28	-5	0.9	10	7	-3	1.0	207	198	-9	0.6
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	94	92	-2	0.2	7	7	0	0.0	3	4	1	0.5	104	103	-1	0.1
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	387	512	125	5.9	83	91	8	0.9	57	57	0	0.0	527	660	133	5.5
ATC_103-1_EB	Road to Martlesham	EB	60	224	164	13.8	32	23	-9	1.7	7	0	-7	3.7	99	247	148	11.3
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	121	135	14	1.2	28	44	16	2.7	17	19	2	0.5	166	198	32	2.4
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	299	364	65	3.6	90	100	10	1.0	25	22	-3	0.6	414	486	72	3.4
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	62	63	1	0.1	13	13	0	0.0	4	4	0	0.0	79	80	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	64	72	8	1.0	42	27	-15	2.6	8	4	-4	1.6	114	103	-11	1.1
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	628	705	77	3.0	94	131	37	3.5	23	48	25	4.2	745	884	139	4.9
ATC_103-1_WB	Road to Martlesham	WB	59	103	44	4.9	24	9	-15	3.7	3	0	-3	2.4	86	112	26	2.6
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	122	139	17	1.5	23	31	8	1.5	11	14	3	0.8	156	184	28	2.1
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	416	502	86	4.0	61	72	11	1.3	15	17	2	0.5	492	591	99	4.3
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	276	262	-14	0.9	19	4	-15	4.4	6	1	-5	2.7	301	267	-34	2.0
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	52	73	21	2.7	22	15	-7	1.6	0	4	4	2.8	74	92	18	2.0
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	217	213	-4	0.3	18	27	9	1.9	8	7	-1	0.4	243	247	4	0.3
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	75	78	3	0.3	10	10	0	0.0	1	0	-1	1.4	86	88	2	0.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	26	19	-7	1.5	4	0	-4	2.8	2	1	-1	0.8	32	20	-12	2.4
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	70	78	8	0.9	16	18	2	0.5	1	5	4	2.3	87	101	14	1.4
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	164	162	-2	0.2	33	32	-1	0.2	8	5	-3	1.2	205	199	-6	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	88	80	-8	0.9	21	12	-9	2.2	3	1	-2	1.4	112	93	-19	1.9

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	504	502	-2	0.1	90	75	-15	1.7	48	54	6	0.8	642	631	-11	0.4
	Southbound	796	791	-5	0.2	163	122	-41	3.4	66	62	-4	0.5	1025	975	-50	1.6
Northern	Northbound	1340	1102	-238	6.8	201	246	45	3.0	172	145	-27	2.1	1713	1493	-220	5.5
	Southbound	1068	1111	43	1.3	165	133	-32	2.6	50	37	-13	2.0	1283	1281	-2	0.1
West of A12	Eastbound	1975	1965	-10	0.2	488	396	-92	4.4	180	157	-23	1.8	2643	2518	-125	2.5
	Westbound	1722	1833	111	2.6	288	258	-30	1.8	106	123	17	1.6	2116	2214	98	2.1
East of A12	Eastbound	1125	1490	365	10.1	273	293	20	1.2	119	109	-10	0.9	1517	1892	375	9.1
	Westbound	1351	1584	233	6.1	257	283	26	1.6	64	87	23	2.6	1672	1954	282	6.6
Leiston	Inbound	620	626	6	0.2	69	56	-13	1.6	15	12	-3	0.8	704	694	-10	0.4
	Outbound	348	339	-9	0.5	74	62	-12	1.5	14	12	-2	0.6	436	413	-23	1.1

www.wsp.com

Table A.4 – Traffic Flow Calibration – All Counts – 7-8am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	86	89	3	0.3	✓	22	16	-6	1.4	✓	7	3	-4	1.8	✓	115	108	-7	0.7	✓
		SB	ATC_2_SB	275	287	12	0.7	✓	38	34	-4	0.7	✓	9	6	-3	1.1	✓	322	327	5	0.3	✓
3	King Georges Avenue	EB	ATC_3_EB	318	199	-119	7.4	✗	43	0	-43	9.3	✓	2	0	-2	2.0	✓	363	199	-164	9.8	✗
		WB	ATC_3_WB	49	29	-20	3.2	✓	11	4	-7	2.6	✓	3	0	-3	2.4	✓	63	33	-30	4.3	✓
4	Lovers Lane	NB	ATC_4_NB	26	19	-7	1.5	✓	4	0	-4	2.8	✓	2	1	-1	0.8	✓	32	20	-12	2.4	✓
		SB	ATC_4_SB	276	262	-14	0.9	✓	19	4	-15	4.4	✓	6	1	-5	2.7	✓	301	267	-34	2.0	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	217	213	-4	0.3	✓	18	27	9	1.9	✓	8	7	-1	0.4	✓	243	247	4	0.3	✓
		SB	ATC_7_SB	164	162	-2	0.2	✓	33	32	-1	0.2	✓	8	5	-3	1.2	✓	205	199	-6	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	75	78	3	0.3	✓	10	10	0	0.0	✓	1	0	-1	1.4	✓	86	88	2	0.2	✓
		SB	ATC_8_SB	88	80	-8	0.9	✓	21	12	-9	2.2	✓	3	1	-2	1.4	✓	112	93	-19	1.9	✓
13	A12 East of Farnham	EB	ATC_13_EB	462	447	-15	0.7	✓	92	96	4	0.4	✓	50	44	-6	0.9	✓	604	587	-17	0.7	✓
		WB	ATC_13_WB	574	572	-2	0.1	✓	81	77	-4	0.5	✓	28	30	2	0.4	✓	683	679	-4	0.2	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	57	56	-1	0.1	✓	19	18	-1	0.2	✓	7	6	-1	0.4	✓	83	80	-3	0.3	✓
		WB	ATC_14_WB	97	77	-20	2.1	✓	18	19	1	0.2	✓	4	7	3	1.3	✓	119	103	-16	1.5	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	60	61	1	0.1	✓	10	12	2	0.6	✓	6	9	3	1.1	✓	76	82	6	0.7	✓
		SB	ATC_16_SB	93	95	2	0.2	✓	31	14	-17	3.6	✓	16	21	5	1.2	✓	140	130	-10	0.9	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	188	193	5	0.4	✓	29	34	5	0.9	✓	22	21	-1	0.2	✓	239	248	9	0.6	✓
		SB	ATC_17_SB	365	370	5	0.3	✓	65	53	-12	1.6	✓	23	22	-1	0.2	✓	453	445	-8	0.4	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	167	170	3	0.2	✓	15	26	11	2.4	✓	6	6	0	0.0	✓	188	202	14	1.0	✓
		WB	ATC_81_WB	272	300	28	1.7	✓	46	37	-9	1.4	✓	9	5	-4	1.5	✓	327	342	15	0.8	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	630	423	-207	9.0	✗	104	126	22	2.1	✓	57	44	-13	1.8	✓	791	593	-198	7.5	✗
		SB	ATC_82-1_SB	718	716	-2	0.1	✓	104	83	-21	2.2	✓	35	30	-5	0.9	✓	857	829	-28	1.0	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	387	512	125	5.9	✗	83	91	8	0.9	✓	57	57	0	0.0	✓	527	660	133	5.5	✗
		WB	ATC_82-2_WB	628	705	77	3.0	✓	94	131	37	3.5	✓	23	48	25	4.2	✓	745	884	139	4.9	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	230	236	6	0.4	✓	34	34	0	0.0	✓	47	36	-11	1.7	✓	311	306	-5	0.3	✓
		WB	ATC_84_WB	289	289	0	0.0	✓	50	56	6	0.8	✓	28	31	3	0.6	✓	367	376	9	0.5	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	33	40	7	1.2	✓	12	16	4	1.1	✓	3	1	-2	1.4	✓	48	57	9	1.2	✓
		WB	ATC_87_WB	86	95	9	0.9	✓	16	18	2	0.5	✓	5	1	-4	2.3	✓	107	114	7	0.7	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	299	364	65	3.6	✓	90	100	10	1.0	✓	25	22	-3	0.6	✓	414	486	72	3.4	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	416	502	86	4.0	✓	61	72	11	1.3	✓	15	17	2	0.5	✓	492	591	99	4.3	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	247	269	22	1.4	✓	55	31	-24	3.7	✓	19	12	-7	1.8	✓	321	312	-9	0.5	✓
		SB	ATC_101-4_SB	392	334	-58	3.0	✓	55	41	-14	2.0	✓	12	10	-2	0.6	✓	459	385	-74	3.6	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	840	842	2	0.1	✓	165	125	-40	3.3	✓	78	77	-1	0.1	✓	1083	1044	-39	1.2	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	669	605	-64	2.5	✓	248	177	-71	4.9	✓	120	105	-15	1.4	✓	1037	887	-150	4.8	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	412	294	-118	6.3	✗	49	26	-23	3.8	✓	13	6	-7	2.3	✓	474	326	-148	7.4	✗
		WB	ATC_102-1_WB	215	249	34	2.2	✓	53	37	-16	2.4	✓	7	6	-1	0.4	✓	275	292	17	1.0	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1105	1110	5	0.2	✓	222	193	-29	2.0	✓	78	82	4	0.4	✓	1405	1385	-20	0.5	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1158	994	-164	5.0	✓	150	182	32	2.5	✓	100	102	2	0.2	✓	1408	1278	-130	3.5	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	121	135	14	1.2	✓	28	44	16	2.7	✓	17	19	2	0.5	✓	166	198	32	2.4	✓
		WB	ATC_102-4_WB	122	139	17	1.5	✓	23	31	8	1.5	✓	11	14	3	0.8	✓	156	184	28	2.1	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	60	224	164	13.8	✗	32	23	-9	1.7	✓	7	0	-7	3.7	✓	99	247	148	11.3	✗
		WB	ATC_103-1_WB	59	103	44	4.9	✓	24	9	-15	3.7	✓	3	0	-3	2.4	✓	86	112	26	2.6	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	714	883	169	6.0	✗	143	148	5	0.4	✓	29	32	3	0.5	✓	886	1063	177	5.7	✗
		WB	ATC_103-4_WB	505	601	96	4.1	✓	42	58	16	2.3	✓	13	27	14	3.1	✓	560	686	126	5.0	✗
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	805	603	-202	7.6	✗	220	172	-48	3.4	✓	109	105	-4	0.4	✓	1134	880	-254	8.0	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1104	992	-112	3.5	✓	252	190	-62	4.2	✓	95	91	-4	0.4	✓	1451	1273	-178	4.8	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	60	60	0	0.0	✓	0	0	0	0.0	✓	1	0	-1	1.4	✓	61	60	-1	0.1	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	164	163	-1	0.1	✓	33	28	-5	0.9	✓	10	7	-3	1.0	✓	207	198	-9	0.6	✓
		WB	ATC_105-1_WB	62	63	1	0.1	✓	13	13	0	0.0	✓	4	4	0	0.0	✓	79	80	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	303	299	-4	0.2	✓	73	70	-3	0.4	✓	39	41	2	0.3	✓	415	410	-5	0.2	✓
		SB	ATC_105-2_SB	420	416	-4	0.2	✓	90	89	-1	0.1	✓	43	40	-3	0.5	✓	553	545	-8	0.3	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	65	64	-1	0.1	✓	10	19	9	2.4	✓	4	6	2	0.9	✓	79	89	10	1.1	✓
		SB	ATC_202-1_SB	123	127	4	0.4	✓	29	27	-2	0.4	✓	11	8	-3	1.0	✓	163	162	-1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	347	339	-8	0.4	✓	85	75	-10	1.1	✓	39	38	-1	0.2	✓	471	452	-19	0.9	✓
		WB	ATC_202-2_WB	361	356	-5	0.3	✓	81	79	-2	0.2	✓	36	34	-2	0.3	✓	478	469	-9	0.4	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	229	238	9	0.6	✓	47	52	5	0.7	✓	29	31	2	0.4	✓	305	321	16	0.9	✓
		SB	ATC_202-3_SB	302	318	16	0.9	✓	63	64	1	0.1	✓	33	29	-4	0.7	✓	398	411	13	0.6	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	94	92	-2	0.2	✓	7	7	0	0.0	✓	3	4	1	0.5	✓	104	103	-1	0.1	✓
		WB	ATC_204_WB	64	72	8	1.0	✓	42	27	-15	2.6	✓	8	4	-4	1.6	✓	114	103	-11	1.1	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	82	64	-18	2.1	✓	11	13	2	0.6	✓	5	6	1	0.4	✓	98	83	-15	1.6	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	216	203	-13	0.9	✓	28	26	-2	0.4	✓	6	5	-1	0.4	✓	250	234	-16	1.0	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	112	98	-14	1.4	✓	28	29	1	0.2	✓	8	4	-4	1.6	✓	148	131	-17	1.4	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	61	59	-2	0.3	✓	18	12	-6	1.5	✓	5	6	1	0.4	✓	84	77	-7	0.8	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	91	78	-13	1.4	✓	18	8	-10	2.8	✓	7	7	0	0.0	✓	116	93	-23	2.2	✓
		SB	SCC_A3489_SB	112	96	-16	1.6	✓	22	14	-8	1.9	✓	9	7	-2	0.7	✓	143	117	-26	2.3	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	34	44	10	1.6	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	44	46	2	0.3	✓
		SB	SCC_A3527_SB	28	32	4	0.7	✓	6	3	-3	1.4	✓	2	0	-2	2.0	✓	36	35	-1	0.2	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	131	126	-5	0.4	✓	26	19	-7	1.5	✓	10	17	7	1.9	✓	167	162	-5	0.4	✓
		SB	SCC_M017_SB	198	198	0	0.0	✓	39	38	-1	0.2	✓	16	12	-4	1.1	✓	253	248	-5	0.3	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	58	65	7	0.9	✓	12	13	1	0.3	✓	5	1	-4	2.3	✓	75	79	4	0.5	✓
		SB	SCC_M055_SB	78	95	17	1.8	✓	15	13	-2	0.5	✓	6	2	-4	2.0	✓	99	110	11	1.1	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	494	949	455	16.9	✗	98	100	2	0.2	✓	39	50	11	1.6	✓	631	1099	468	15.9	✗
		SB	SCC_Y151_SB	498	650	152	6.3	✗	99	177	78	6.6	✓	40	98	58	7.0	✓	637	925	288	10.3	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	653	487	-166	7.0	✗	130	67	-63	6.3	✓	52	27	-25	4.0	✓	835	581	-254	9.5	✗
		WB	SCC_Y189_WB	726	718	-8	0.3	✓	144	78	-66	6.3	✓	58	42	-16	2.3	✓	928	838	-90	3.0	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	239	236	-3	0.2	✓	51	40	-11	1.6	✓	5	5	0	0.0	✓	295	281	-14	0.8	✓
		EB	MCC_302_B_EB	247	245	-2	0.1	✓	70	52	-18	2.3	✓	20	13	-7	1.7	✓	337	310	-27	1.5	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	109	112	3	0.3	✓	29	18	-11	2.3	✓	6	2	-4	2.0	✓	144	132	-12	1.0	✓
		SB	MCC_302_C_SB	110	107	-3	0.3	✓	43	32	-11	1.8	✓	8	5	-3	1.2	✓	161	144	-17	1.4	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	211	215	4	0.3	✓	72	64	-8	1.0	✓	19	17	-2	0.5	✓	302	296	-6	0.3	✓
		WB	MCC_302_D_WB	213	211	-2	0.1	✓	41	38	-3	0.5	✓	3	6	3	1.4	✓	257	255	-2	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	121	112	-9	0.8	✓	42	29	-13	2.2	✓	5	2	-3	1.6	✓	168	143	-25	2.0	✓
		SB	MCC_303_A_SB	102	104	2	0.2	✓	35	29	-6	1.1	✓	14	7	-7	2.2	✓	151	140	-11	0.9	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	52	73	21	2.7	✓	22	15	-7	1.6	✓	0	4	4	2.8	✓	74	92	18	2.0	✓
		WB	MCC_303_B_WB	70	78	8	0.9	✓	16	18	2	0.5	✓	1	5	4	2.3	✓	87	101	14	1.4	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	102	105	3	0.3	✓	39	36	-3	0.5	✓	15	8	-7	2.1	✓	156	149	-7	0.6	✓
		NB	MCC_303_C_NB	139	139	0	0.0	✓	41	31	-10	1.7	✓	3	5	2	1.0	✓	183	175	-8	0.6	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	109	90	-19	1.9	✓	17	13	-4	1.0	✓	0	6	6	3.5	✓	126	109	-17	1.6	✓
		EB	MCC_303_D_EB	73	59	-14	1.7	✓	28	15	-13	2.8	✓	2	3	1	0.6	✓	103	77	-26	2.7	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	66	66	0	0.0	✓	9	9	0	0.0	✓	1	3	2	1.4	✓	76	78	2	0.2	✓
		NB	MCC_304_A_NB	76	61	-15	1.8	✓	26	14	-12	2.7	✓	14	6	-8	2.5	✓	116	81	-35	3.5	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	65	82	17	2.0	✓	29	25	-4	0.8	✓	1	2	1	0.8	✓	95	109	14	1.4	✓
		EB	MCC_304_B_EB	260	272	12	0.7	✓	26	23	-3	0.6	✓	0	2	2	2.0	✓	286	297	11	0.6	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	111	93	-18	1.8	✓	33	11	-22	4.7	✓	14	3	-11	3.8	✓	158	107	-51	4.4	✓
		SB	MCC_304_C_SB	40	34	-6	1.0	✓	16	4	-12	3.8	✓	0	1	1	1.4	✓	56	39	-17	2.5	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	182	172	-10	0.8	✓	16	9	-7	2.0	✓	0	0	0	0.0	✓	198	181	-17	1.2	✓
		WB	MCC_304_D_WB	48	45	-3	0.4	✓	19	14	-5	1.2	✓	2	0	-2	2.0	✓	69	59	-10	1.3	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	757	643	-114	4.3	✓	36	28	-8	1.4	✓	29	32	3	0.5	✓	822	703	-119	4.3	✓
30013377		SB	30013377	475	470	-5	0.2	✓	29	25	-4	0.8	✓	30	33	3	0.5	✓	534	528	-6	0.3	✓
30013396	A14 - J56 Through	EB	30013396	1776	1471	-305	7.6	✗	165	147	-18	1.4	✓	342	319	-23	1.3	✓	2283	1937	-346	7.5	✗
30013397	A14 - J56 EXIT	EB	30013397	383	192	-191	11.3	✗	26	34	8	1.5	✓	40	40	0	0.0	✓	449	266	-183	9.7	✗
30013398	A14 - J57 Through	EB	30013398	1229	1150	-79	2.3	✓	116	137	21	1.9	✓	297	293	-4	0.2	✓	1642	1580	-62	1.5	✓
30013399	A14 - J57 EXIT	EB	30013399	870	729	-141	5.0	✓	87	65	-22	2.5	✓	137	84	-53	5.0	✓	1094	878	-216	6.9	✗
30013402	A14 - J57 Through	WB	30013402	1411	1350	-61	1.6	✓	92	107	15	1.5	✓	332	314	-18	1.0	✓	1835	1771	-64	1.5	✓
30013403	A14 - J57 EXIT	WB	30013403	328	337	9	0.5	✓	13	32	19	4.0	✓	25	13	-12	2.8	✓	366	382	16	0.8	✓
30013406	A14 - J55 Through	WB	30013406	958	854	-104	3.5	✓	90	70	-20	2.2	✓	244	222	-22	1.4	✓	1292	1146	-146	4.2	✓
30013407	A14 - J55 EXIT	WB	30013407	950	965	15	0.5	✓	75	77	2	0.2	✓	182	165	-17	1.3	✓	1207	1207	0	0.0	✓
30013408	A14 - J55 Through	EB	30013408	1090	882	-208	6.6	✗	93	69	-24	2.7	✓	237	182	-55	3.8	✓	1420	1133	-287	8.0	✗
30013410	A14 - J53 Through	NB	30013410	1404	1119	-285	8.0	✗	145	114	-31	2.7	✓	386	288	-98	5.3	✓	1935	1521	-414	10.0	✗
30013411	A14 - J53 EXIT	NB	30013411	299	108	-191	13.4	✗	27	19	-8	1.7	✓	15	4	-11	3.6	✓	341	131	-210	13.7	✗
30013415	A14 - J51 EXIT	NB	30013415	485	444	-41	1.9	✓	70	81	11	1.3	✓	104	94	-10	1.0	✓	659	619	-40	1.6	✓
30013417	A14 - J51 EXIT	SB	30013417	181	141	-40	3.2	✓	26	32	6	1.1	✓	32	24	-8	1.5	✓	239	197	-42	2.8	✓
30013418	A14 - between J51 and J50	NB	30013418	1542	1476	-66	1.7	✓	144	165	21	1.7	✓	340	292	-48	2.7	✓	2026	1933	-93	2.1	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	4	99	87%
LGV	114	0	110	100%
HGV	114	0	111	100%
Total Vehs	114	4	97	85%

Table A.5 – Traffic Flow Calibration – Screenlines – 8-9am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	48	58	10	1.4	8	3	-5	2.1	4	0	-4	2.8	60	61	1	0.1
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	121	99	-22	2.1	20	10	-10	2.6	10	8	-2	0.7	151	117	-34	2.9
SCC_M017_NB	M017 (A144 Ilketshall)	NB	183	182	-1	0.1	30	22	-8	1.6	14	21	7	1.7	227	225	-2	0.1
ATC_16_NB	A145 North of Blythburgh and B1123	NB	64	68	4	0.5	15	15	0	0.0	11	13	2	0.6	90	96	6	0.6
ATC_17_NB	A12 North of Blythburgh and A1095	NB	218	222	4	0.3	36	37	1	0.2	29	25	-4	0.8	283	284	1	0.1
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	37	41	4	0.6	6	2	-4	2.0	3	0	-3	2.4	46	43	-3	0.4
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	135	118	-17	1.5	22	14	-8	1.9	11	8	-3	1.0	168	140	-28	2.3
SCC_M017_SB	M017 (A144 Ilketshall)	SB	206	210	4	0.3	33	34	1	0.2	16	13	-3	0.8	255	257	2	0.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	97	102	5	0.5	28	12	-16	3.6	10	19	9	2.4	135	133	-2	0.2
ATC_17_SB	A12 North of Blythburgh and A1095	SB	257	266	9	0.6	65	53	-12	1.6	32	30	-2	0.4	354	349	-5	0.3
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	518	482	-36	1.6	63	73	10	1.2	119	105	-14	1.3	700	660	-40	1.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	56	80	24	2.9	9	11	2	0.6	4	1	-3	1.9	69	92	23	2.6
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	626	466	-160	6.8	95	128	33	3.1	52	46	-6	0.9	773	640	-133	5.0
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	209	214	5	0.3	18	27	9	1.9	11	9	-2	0.6	238	250	12	0.8
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	101	120	19	1.8	16	14	-2	0.5	8	2	-6	2.7	125	136	11	1.0
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	1039	850	-189	6.1	117	72	-45	4.6	48	41	-7	1.0	1204	963	-241	7.3
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	303	348	45	2.5	37	31	-6	1.0	13	8	-5	1.5	353	387	34	1.8
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	128	133	5	0.4	27	24	-3	0.6	10	9	-1	0.3	165	166	1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	84	81	-3	0.3	21	18	-3	0.7	11	9	-2	0.6	116	108	-8	0.8
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	875	979	104	3.4	111	113	2	0.2	31	36	5	0.9	1017	1128	111	3.4
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	488	437	-51	2.4	53	27	-26	4.1	14	9	-5	1.5	555	473	-82	3.6
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	999	876	-123	4.0	218	168	-50	3.6	135	118	-17	1.5	1352	1162	-190	5.4
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	81	86	5	0.5	17	23	6	1.3	7	8	1	0.4	105	117	12	1.1
ATC_14_WB	B1078 West of Wickham Market	WB	125	109	-16	1.5	17	19	2	0.5	6	9	3	1.1	148	137	-11	0.9
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	711	755	44	1.6	45	68	23	3.1	19	31	12	2.4	775	854	79	2.8
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	325	424	99	5.1	45	34	-11	1.8	8	7	-1	0.4	378	465	87	4.2
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	1021	874	-147	4.8	137	120	-17	1.5	108	90	-18	1.8	1266	1084	-182	5.3

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	140	142	2	0.2	27	23	-4	0.8	11	7	-4	1.3	178	172	-6	0.5
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	200	191	-9	0.6	14	10	-4	1.2	7	6	-1	0.4	221	207	-14	1.0
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	589	610	21	0.9	125	80	-45	4.4	61	75	14	1.7	775	765	-10	0.4
ATC_103-1_EB	Road to Martlesham	EB	104	207	103	8.3	32	20	-12	2.4	8	0	-8	4.0	144	227	83	6.1
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	170	169	-1	0.1	44	58	14	2.0	19	20	1	0.2	233	247	14	0.9
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	519	523	4	0.2	66	80	14	1.6	23	22	-1	0.2	608	625	17	0.7
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	81	83	2	0.2	14	14	0	0.0	8	7	-1	0.4	103	104	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	120	127	7	0.6	54	37	-17	2.5	11	5	-6	2.1	185	169	-16	1.2
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	759	729	-30	1.1	90	127	37	3.6	35	56	21	3.1	884	912	28	0.9
ATC_103-1_WB	Road to Martlesham	WB	125	123	-2	0.2	51	19	-32	5.4	5	0	-5	3.2	181	142	-39	3.1
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	225	248	23	1.5	42	40	-2	0.3	21	23	2	0.4	288	311	23	1.3
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	348	437	89	4.5	45	60	15	2.1	15	20	5	1.2	408	517	109	5.1
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	150	144	-6	0.5	13	3	-10	3.5	4	2	-2	1.2	167	149	-18	1.4
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	110	123	13	1.2	22	16	-6	1.4	4	6	2	0.9	136	145	9	0.8
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	174	177	3	0.2	26	35	9	1.6	11	7	-4	1.3	211	219	8	0.5
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	87	86	-1	0.1	10	7	-3	1.0	3	1	-2	1.4	100	94	-6	0.6
Outbound																		
ATC_4_NB	Lovers Lane	NB	34	36	2	0.3	5	1	-4	2.3	5	1	-4	2.3	44	38	-6	0.9
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	115	126	11	1.0	17	20	3	0.7	5	6	1	0.4	137	152	15	1.2
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	164	162	-2	0.2	24	27	3	0.6	12	7	-5	1.6	200	196	-4	0.3
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	129	121	-8	0.7	24	13	-11	2.6	7	1	-6	3.0	160	135	-25	2.1

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	634	629	-5	0.2	109	87	-22	2.2	68	67	-1	0.1	811	783	-28	1.0
	Southbound	732	737	5	0.2	154	115	-39	3.4	72	70	-2	0.2	958	922	-36	1.2
Northern	Northbound	1409	1242	-167	4.6	185	239	54	3.7	186	161	-25	1.9	1780	1642	-138	3.3
	Southbound	1443	1318	-125	3.4	170	117	-53	4.4	69	51	-18	2.3	1682	1486	-196	4.9
West of A12	Eastbound	2574	2506	-68	1.3	430	350	-80	4.1	201	181	-20	1.4	3205	3037	-168	3.0
	Westbound	2263	2248	-15	0.3	261	264	3	0.2	148	145	-3	0.2	2672	2657	-15	0.3
East of A12	Eastbound	1722	1842	120	2.8	308	271	-37	2.2	129	130	1	0.1	2159	2243	84	1.8
	Westbound	1658	1747	89	2.2	296	297	1	0.1	95	111	16	1.6	2049	2155	106	2.3
Leiston	Inbound	521	530	9	0.4	71	61	-10	1.2	22	16	-6	1.4	614	607	-7	0.3
	Outbound	442	445	3	0.1	70	61	-9	1.1	29	15	-14	3.0	541	521	-20	0.9

Table A.6 – Traffic Flow Calibration – All Counts – 8-9am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	117	118	1	0.1	✓	25	17	-8	1.7	✓	11	6	-5	1.7	✓	153	141	-12	1.0	✓
		SB	ATC_2_SB	218	224	6	0.4	✓	37	29	-8	1.4	✓	12	6	-6	2.0	✓	267	259	-8	0.5	✓
3	King Georges Avenue	EB	ATC_3_EB	184	166	-18	1.4	✓	32	0	-32	8.0	✓	6	0	-6	3.5	✓	222	166	-56	4.0	✓
		WB	ATC_3_WB	89	31	-58	7.5	✓	23	3	-20	5.5	✓	6	1	-5	2.7	✓	118	35	-83	9.5	✓
4	Lovers Lane	NB	ATC_4_NB	34	36	2	0.3	✓	5	1	-4	2.3	✓	5	1	-4	2.3	✓	44	38	-6	0.9	✓
		SB	ATC_4_SB	150	144	-6	0.5	✓	13	3	-10	3.5	✓	4	2	-2	1.2	✓	167	149	-18	1.4	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	174	177	3	0.2	✓	26	35	9	1.6	✓	11	7	-4	1.3	✓	211	219	8	0.5	✓
		SB	ATC_7_SB	164	162	-2	0.2	✓	24	27	3	0.6	✓	12	7	-5	1.6	✓	200	196	-4	0.3	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	87	86	-1	0.1	✓	10	7	-3	1.0	✓	3	1	-2	1.4	✓	100	94	-6	0.6	✓
		SB	ATC_8_SB	129	121	-8	0.7	✓	24	13	-11	2.6	✓	7	1	-6	3.0	✓	160	135	-25	2.1	✓
13	A12 East of Farnham	EB	ATC_13_EB	499	490	-9	0.4	✓	101	101	0	0.0	✓	53	47	-6	0.8	✓	653	638	-15	0.6	✓
		WB	ATC_13_WB	641	632	-9	0.4	✓	68	67	-1	0.1	✓	39	40	1	0.2	✓	748	739	-9	0.3	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	84	81	-3	0.3	✓	21	18	-3	0.7	✓	11	9	-2	0.6	✓	116	108	-8	0.8	✓
		WB	ATC_14_WB	125	109	-16	1.5	✓	17	19	2	0.5	✓	6	9	3	1.1	✓	148	137	-11	0.9	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	64	68	4	0.5	✓	15	15	0	0.0	✓	11	13	2	0.6	✓	90	96	6	0.6	✓
		SB	ATC_16_SB	97	102	5	0.5	✓	28	12	-16	3.6	✓	10	19	9	2.4	✓	135	133	-2	0.2	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	218	222	4	0.3	✓	36	37	1	0.2	✓	29	25	-4	0.8	✓	283	284	1	0.1	✓
		SB	ATC_17_SB	257	266	9	0.6	✓	65	53	-12	1.6	✓	32	30	-2	0.4	✓	354	349	-5	0.3	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	209	214	5	0.3	✓	18	27	9	1.9	✓	11	9	-2	0.6	✓	238	250	12	0.8	✓
		WB	ATC_81_WB	303	348	45	2.5	✓	37	31	-6	1.0	✓	13	8	-5	1.5	✓	353	387	34	1.8	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	626	466	-160	6.8	✗	95	128	33	3.1	✓	52	46	-6	0.9	✓	773	640	-133	5.0	✗
		SB	ATC_82-1_SB	1039	850	-189	6.1	✗	117	72	-45	4.6	✓	48	41	-7	1.0	✓	1204	963	-241	7.3	✗
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	589	610	21	0.9	✓	125	80	-45	4.4	✓	61	75	14	1.7	✓	775	765	-10	0.4	✓
		WB	ATC_82-2_WB	759	729	-30	1.1	✓	90	127	37	3.6	✓	35	56	21	3.1	✓	884	912	28	0.9	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	277	283	6	0.4	✓	37	36	-1	0.2	✓	41	33	-8	1.3	✓	355	352	-3	0.2	✓
		WB	ATC_84_WB	252	259	7	0.4	✓	54	59	5	0.7	✓	33	36	3	0.5	✓	339	354	15	0.8	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	63	65	2	0.3	✓	14	19	5	1.2	✓	4	1	-3	1.9	✓	81	85	4	0.4	✓
		WB	ATC_87_WB	160	171	11	0.9	✓	19	19	0	0.0	✓	6	1	-5	2.7	✓	185	191	6	0.4	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	519	523	4	0.2	✓	66	80	14	1.6	✓	23	22	-1	0.2	✓	608	625	17	0.7	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	348	437	89	4.5	✓	45	60	15	2.1	✓	15	20	5	1.2	✓	408	517	109	5.1	✗
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	452	388	-64	3.1	✓	63	34	-29	4.2	✓	23	13	-10	2.4	✓	538	435	-103	4.7	✓
		SB	ATC_101-4_SB	517	393	-124	5.8	✗	48	32	-16	2.5	✓	13	11	-2	0.6	✓	578	436	-142	6.3	✗
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	1021	874	-147	4.8	✓	137	120	-17	1.5	✓	108	90	-18	1.8	✓	1266	1084	-182	5.3	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	999	876	-123	4.0	✓	218	168	-50	3.6	✓	135	118	-17	1.5	✓	1352	1162	-190	5.4	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	488	437	-51	2.4	✓	53	27	-26	4.1	✓	14	9	-5	1.5	✓	555	473	-82	3.6	✓
		WB	ATC_102-1_WB	325	424	99	5.1	✓	45	34	-11	1.8	✓	8	7	-1	0.4	✓	378	465	87	4.2	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1327	1334	7	0.2	✓	229	188	-41	2.8	✓	85	86	1	0.1	✓	1641	1608	-33	0.8	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1635	1338	-297	7.7	✗	151	193	42	3.2	✓	122	120	-2	0.2	✓	1908	1651	-257	6.1	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	170	169	-1	0.1	✓	44	58	14	2.0	✓	19	20	1	0.2	✓	233	247	14	0.9	✓
		WB	ATC_102-4_WB	225	248	23	1.5	✓	42	40	-2	0.3	✓	21	23	2	0.4	✓	288	311	23	1.3	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	104	207	103	8.3	✗	32	20	-12	2.4	✓	8	0	-8	4.0	✓	144	227	83	6.1	✓
		WB	ATC_103-1_WB	125	123	-2	0.2	✓	51	19	-32	5.4	✓	5	0	-5	3.2	✓	181	142	-39	3.1	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	875	979	104	3.4	✓	111	113	2	0.2	✓	31	36	5	0.9	✓	1017	1128	111	3.4	✓
		WB	ATC_103-4_WB	711	755	44	1.6	✓	45	68	23	3.1	✓	19	31	12	2.4	✓	775	854	79	2.8	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1025	778	-247	8.2	✗	269	187	-82	5.4	✓	128	124	-4	0.4	✓	1422	1089	-333	9.4	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1435	1232	-203	5.6	✓	275	187	-88	5.8	✓	103	93	-10	1.0	✓	1813	1512	-301	7.4	✗
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	17	17	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	17	17	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	70	69	-1	0.1	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	70	69	-1	0.1	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	140	142	2	0.2	✓	27	23	-4	0.8	✓	11	7	-4	1.3	✓	178	172	-6	0.5	✓
		WB	ATC_105-1_WB	81	83	2	0.2	✓	14	14	0	0.0	✓	8	7	-1	0.4	✓	103	104	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	360	357	-3	0.2	✓	75	75	0	0.0	✓	44	48	4	0.6	✓	479	480	1	0.0	✓
		SB	ATC_105-2_SB	430	426	-4	0.2	✓	83	84	1	0.1	✓	50	49	-1	0.1	✓	563	559	-4	0.2	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	81	86	5	0.5	✓	17	23	6	1.3	✓	7	8	1	0.4	✓	105	117	12	1.1	✓
		SB	ATC_202-1_SB	128	133	5	0.4	✓	27	24	-3	0.6	✓	10	9	-1	0.3	✓	165	166	1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	420	404	-16	0.8	✓	90	80	-10	1.1	✓	43	43	0	0.0	✓	553	527	-26	1.1	✓
		WB	ATC_202-2_WB	422	414	-8	0.4	✓	85	79	-6	0.7	✓	46	43	-3	0.4	✓	553	536	-17	0.7	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	303	310	7	0.4	✓	55	60	5	0.7	✓	35	34	-1	0.2	✓	393	404	11	0.6	✓
		SB	ATC_202-3_SB	362	368	6	0.3	✓	60	60	0	0.0	✓	41	36	-5	0.8	✓	463	464	1	0.0	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	200	191	-9	0.6	✓	14	10	-4	1.2	✓	7	6	-1	0.4	✓	221	207	-14	1.0	✓
		WB	ATC_204_WB	120	127	7	0.6	✓	54	37	-17	2.5	✓	11	5	-6	2.1	✓	185	169	-16	1.2	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	111	91	-20	2.0	✓	22	15	-7	1.6	✓	5	7	2	0.8	✓	138	113	-25	2.2	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	307	285	-22	1.3	✓	28	25	-3	0.6	✓	13	8	-5	1.5	✓	348	318	-30	1.6	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	152	140	-12	1.0	✓	32	30	-2	0.4	✓	12	6	-6	2.0	✓	196	176	-20	1.5	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	97	89	-8	0.8	✓	22	13	-9	2.2	✓	11	8	-3	1.0	✓	130	110	-20	1.8	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	121	99	-22	2.1	✓	20	10	-10	2.6	✓	10	8	-2	0.7	✓	151	117	-34	2.9	✓
		SB	SCC_A3489_SB	135	118	-17	1.5	✓	22	14	-8	1.9	✓	11	8	-3	1.0	✓	168	140	-28	2.3	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	48	58	10	1.4	✓	8	3	-5	2.1	✓	4	0	-4	2.8	✓	60	61	1	0.1	✓
		SB	SCC_A3527_SB	37	41	4	0.6	✓	6	2	-4	2.0	✓	3	0	-3	2.4	✓	46	43	-3	0.4	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	183	182	-1	0.1	✓	30	22	-8	1.6	✓	14	21	7	1.7	✓	227	225	-2	0.1	✓
		SB	SCC_M017_SB	206	210	4	0.3	✓	33	34	1	0.2	✓	16	13	-3	0.8	✓	255	257	2	0.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	56	80	24	2.9	✓	9	11	2	0.6	✓	4	1	-3	1.9	✓	69	92	23	2.6	✓
		SB	SCC_M055_SB	101	120	19	1.8	✓	16	14	-2	0.5	✓	8	2	-6	2.7	✓	125	136	11	1.0	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	597	1080	483	16.7	✗	97	99	2	0.2	✓	47	57	10	1.4	✓	741	1236	495	15.7	✗
		SB	SCC_Y151_SB	498	665	167	6.9	✗	81	174	93	8.2	✓	39	98	59	7.1	✓	618	937	319	11.4	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	657	502	-155	6.4	✗	107	59	-48	5.3	✓	52	32	-20	3.1	✓	816	593	-223	8.4	✗
		WB	SCC_Y189_WB	828	715	-113	4.1	✓	134	74	-60	5.9	✓	65	45	-20	2.7	✓	1027	834	-193	6.3	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	227	222	-5	0.3	✓	49	37	-12	1.8	✓	8	9	1	0.3	✓	284	268	-16	1.0	✓
		EB	MCC_302_B_EB	256	251	-5	0.3	✓	76	59	-17	2.1	✓	11	11	0	0.0	✓	343	321	-22	1.2	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	138	136	-2	0.2	✓	46	30	-16	2.6	✓	10	4	-6	2.3	✓	194	170	-24	1.8	✓
		SB	MCC_302_C_SB	116	119	3	0.3	✓	48	35	-13	2.0	✓	9	6	-3	1.1	✓	173	160	-13	1.0	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	213	211	-2	0.1	✓	77	70	-7	0.8	✓	15	15	0	0.0	✓	305	296	-9	0.5	✓
		WB	MCC_302_D_WB	192	198	6	0.4	✓	47	43	-4	0.6	✓	12	11	-1	0.3	✓	251	252	1	0.1	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	165	156	-9	0.7	✓	46	32	-14	2.2	✓	14	6	-8	2.5	✓	225	194	-31	2.1	✓
		SB	MCC_303_A_SB	194	189	-5	0.4	✓	39	29	-10	1.7	✓	10	6	-4	1.4	✓	243	224	-19	1.2	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	110	123	13	1.2	✓	22	16	-6	1.4	✓	4	6	2	0.9	✓	136	145	9	0.8	✓
		WB	MCC_303_B_WB	115	126	11	1.0	✓	17	20	3	0.7	✓	5	6	1	0.4	✓	137	152	15	1.2	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	228	223	-5	0.3	✓	27	30	3	0.6	✓	6	7	1	0.4	✓	261	260	-1	0.1	✓
		NB	MCC_303_C_NB	206	196	-10	0.7	✓	35	29	-6	1.1	✓	13	9	-4	1.2	✓	254	234	-20	1.3	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	190	160	-30	2.3	✓	21	14	-7	1.7	✓	5	5	0	0.0	✓	216	179	-37	2.6	✓
		EB	MCC_303_D_EB	178	149	-29	2.3	✓	25	14	-11	2.5	✓	1	4	3	1.9	✓	204	167	-37	2.7	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	78	101	23	2.4	✓	13	10	-3	0.9	✓	3	4	1	0.5	✓	94	115	21	2.1	✓
		NB	MCC_304_A_NB	160	135	-25	2.1	✓	21	13	-8	1.9	✓	7	5	-2	0.8	✓	188	153	-35	2.7	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	132	141	9	0.8	✓	33	27	-6	1.1	✓	7	3	-4	1.8	✓	172	171	-1	0.1	✓
		EB	MCC_304_B_EB	222	245	23	1.5	✓	33	27	-6	1.1	✓	4	2	-2	1.2	✓	259	274	15	0.9	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	152	129	-23	1.9	✓	21	5	-16	4.4	✓	5	2	-3	1.6	✓	178	136	-42	3.4	✓
		SB	MCC_304_C_SB	56	51	-5	0.7	✓	16	5	-11	3.4	✓	4	1	-3	1.9	✓	76	57	-19	2.3	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	149	133	-16	1.3	✓	27	16	-11	2.4	✓	2	0	-2	2.0	✓	178	149	-29	2.3	✓
		WB	MCC_304_D_WB	73	72	-1	0.1	✓	24	14	-10	2.3	✓	2	0	-2	2.0	✓	99	86	-13	1.4	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	845	719	-126	4.5	✓	35	26	-9	1.6	✓	44	45	1	0.1	✓	924	790	-134	4.6	✓
30013377		SB	30013377	710	695	-15	0.6	✓	37	30	-7	1.2	✓	44	44	0	0.0	✓	791	769	-22	0.8	✓
30013396	A14 - J56 Through	EB	30013396	2215	1890	-325	7.2	✓	156	144	-12	1.0	✓	289	278	-11	0.7	✓	2660	2312	-348	7.0	✓
30013397	A14 - J56 EXIT	EB	30013397	513	334	-179	8.7	✗	28	36	8	1.4	✓	48	46	-2	0.3	✓	589	416	-173	7.7	✗
30013398	A14 - J57 Through	EB	30013398	1588	1487	-101	2.6	✓	129	154	25	2.1	✓	245	250	5	0.3	✓	1962	1891	-71	1.6	✓
30013399	A14 - J57 EXIT	EB	30013399	891	805	-86	3.0	✓	80	53	-27	3.3	✓	221	129	-92	7.0	✓	1192	987	-205	6.2	✗
30013402	A14 - J57 Through	WB	30013402	1475	1339	-136	3.6	✓	80	94	14	1.5	✓	322	315	-7	0.4	✓	1877	1748	-129	3.0	✓
30013403	A14 - J57 EXIT	WB	30013403	454	457	3	0.1	✓	19	37	18	3.4	✓	44	25	-19	3.2	✓	517	519	2	0.1	✓
30013406	A14 - J55 Through	WB	30013406	1058	903	-155	5.0	✓	85	67	-18	2.1	✓	269	238	-31	1.9	✓	1412	1208	-204	5.6	✓
30013407	A14 - J55 EXIT	WB	30013407	926	1014	88	2.8	✓	74	75	1	0.1	✓	182	161	-21	1.6	✓	1182	1250	68	2.0	✓
30013408	A14 - J55 Through	EB	30013408	1473	1238	-235	6.4	✗	97	72	-25	2.7	✓	185	142	-43	3.4	✓	1755	1452	-303	7.6	✗
30013410	A14 - J53 Through	NB	30013410	1451	1186	-265	7.3	✗	126	110	-16	1.5	✓	419	311	-108	5.7	✗	1996	1607	-389	9.2	✗
30013411	A14 - J53 EXIT	NB	30013411	463	293	-170	8.7	✗	32	19	-13	2.6	✓	21	4	-17	4.8	✓	516	316	-200	9.8	✗
30013415	A14 - J51 EXIT	NB	30013415	518	482	-36	1.6	✓	63	73	10	1.2	✓	119	105	-14	1.3	✓	700	660	-40	1.5	✓
30013417	A14 - J51 EXIT	SB	30013417	227	166	-61	4.4	✓	21	28	7	1.4	✓	35	31	-4	0.7	✓	283	225	-58	3.6	✓
30013418	A14 - between J51 and J50	NB	30013418	1540	1479	-61	1.6	✓	130	147	17	1.4	✓	356	309	-47	2.6	✓	2026	1935	-91	2.0	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	1	97	89%
LGV	114	0	106	100%
HGV	114	0	111	99%
Total Vehs	114	2	92	87%

www.wsp.com

Table A.7 – Traffic Flow Calibration – Screenlines – 3-4pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	41	48	7	1.0	6	2	-4	2.0	3	0	-3	2.4	50	50	0	0.0
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	121	87	-34	3.3	18	5	-13	3.8	8	6	-2	0.8	147	98	-49	4.4
SCC_M017_NB	M017 (A144 Ilketshall)	NB	191	194	3	0.2	29	29	0	0.0	13	20	7	1.7	233	243	10	0.6
ATC_16_NB	A145 North of Blythburgh and B1123	NB	118	98	-20	1.9	24	12	-12	2.8	18	13	-5	1.3	160	123	-37	3.1
ATC_17_NB	A12 North of Blythburgh and A1095	NB	337	362	25	1.3	34	32	-2	0.3	17	17	0	0.0	388	411	23	1.2
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	50	61	11	1.5	7	1	-6	3.0	3	0	-3	2.4	60	62	2	0.3
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	124	89	-35	3.4	19	6	-13	3.7	9	6	-3	1.1	152	101	-51	4.5
SCC_M017_SB	M017 (A144 Ilketshall)	SB	176	182	6	0.4	26	18	-8	1.7	12	15	3	0.8	214	215	1	0.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	59	73	14	1.7	16	11	-5	1.4	6	13	7	2.3	81	97	16	1.7
ATC_17_SB	A12 North of Blythburgh and A1095	SB	228	240	12	0.8	41	44	3	0.5	16	21	5	1.2	285	305	20	1.2
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	591	516	-75	3.2	64	91	27	3.1	114	104	-10	1.0	769	711	-58	2.1
SCC_M055_NB	M055 (B1077 Swilland)	NB	45	104	59	6.8	7	4	-3	1.3	3	1	-2	1.4	55	109	54	6.0
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	903	753	-150	5.2	68	92	24	2.7	44	39	-5	0.8	1015	884	-131	4.3
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	263	282	19	1.2	15	20	5	1.2	13	8	-5	1.5	291	310	19	1.1
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	71	98	27	2.9	11	9	-2	0.6	5	1	-4	2.3	87	108	21	2.1
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	760	657	-103	3.9	118	111	-7	0.7	45	42	-3	0.5	923	810	-113	3.8
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	181	209	28	2.0	28	22	-6	1.2	11	8	-3	1.0	220	239	19	1.3
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	120	120	0	0.0	19	20	1	0.2	12	4	-8	2.8	151	144	-7	0.6
ATC_14_EB	B1078 West of Wickham Market	EB	100	102	2	0.2	20	15	-5	1.2	5	3	-2	1.0	125	120	-5	0.5
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	681	722	41	1.5	101	107	6	0.6	28	26	-2	0.4	810	855	45	1.6
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	367	412	45	2.3	51	19	-32	5.4	16	6	-10	3.0	434	437	3	0.1
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	927	854	-73	2.4	167	113	-54	4.6	99	96	-3	0.3	1193	1063	-130	3.9
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	145	144	-1	0.1	21	14	-7	1.7	10	4	-6	2.3	176	162	-14	1.1
ATC_14_WB	B1078 West of Wickham Market	WB	86	91	5	0.5	20	18	-2	0.5	5	5	0	0.0	111	114	3	0.3
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	805	936	131	4.4	88	113	25	2.5	29	34	5	0.9	922	1083	161	5.1
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	442	458	16	0.8	97	59	-38	4.3	22	15	-7	1.6	561	532	-29	1.2
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	829	777	-52	1.8	185	150	-35	2.7	100	100	0	0.0	1114	1027	-87	2.7

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	96	102	6	0.6	16	16	0	0.0	6	5	-1	0.4	118	123	5	0.5
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	172	170	-2	0.2	12	8	-4	1.3	6	3	-3	1.4	190	181	-9	0.7
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	641	673	32	1.2	41	69	28	3.8	33	46	13	2.1	715	788	73	2.7
ATC_103-1_EB	Road to Martlesham	EB	105	111	6	0.6	36	32	-4	0.7	6	0	-6	3.5	147	143	-4	0.3
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	178	200	22	1.6	41	57	16	2.3	23	20	-3	0.6	242	277	35	2.2
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	391	512	121	5.7	39	77	38	5.0	21	24	3	0.6	451	613	162	7.0
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	130	129	-1	0.1	19	17	-2	0.5	10	5	-5	1.8	159	151	-8	0.6
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	120	125	5	0.5	47	17	-30	5.3	7	4	-3	1.3	174	146	-28	2.2
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	646	715	69	2.6	78	107	29	3.0	31	58	27	4.0	755	880	125	4.4
ATC_103-1_WB	Road to Martlesham	WB	154	277	123	8.4	62	31	-31	4.5	5	0	-5	3.2	221	308	87	5.3
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	190	216	26	1.8	49	55	6	0.8	23	25	2	0.4	262	296	34	2.0
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	439	516	77	3.5	66	86	20	2.3	28	28	0	0.0	533	630	97	4.0
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	46	47	1	0.1	7	1	-6	3.0	3	1	-2	1.4	56	49	-7	1.0
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	169	171	2	0.2	22	12	-10	2.4	6	5	-1	0.4	197	188	-9	0.6
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	161	173	12	0.9	28	23	-5	1.0	9	5	-4	1.5	198	201	3	0.2
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	122	111	-11	1.0	15	7	-8	2.4	6	1	-5	2.7	143	119	-24	2.1
Outbound																		
ATC_4_NB	Lovers Lane	NB	98	100	2	0.2	12	2	-10	3.8	3	2	-1	0.6	113	104	-9	0.9
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	127	141	14	1.2	13	11	-2	0.6	3	5	2	1.0	143	157	14	1.1
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	190	196	6	0.4	23	27	4	0.8	9	7	-2	0.7	222	230	8	0.5
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	117	100	-17	1.6	17	6	-11	3.2	5	1	-4	2.3	139	107	-32	2.9

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	808	789	-19	0.7	111	80	-31	3.2	59	56	-3	0.4	978	925	-53	1.7
	Southbound	637	645	8	0.3	109	80	-29	3.0	46	55	9	1.3	792	780	-12	0.4
Northern	Northbound	1802	1655	-147	3.5	154	207	53	3.9	174	152	-22	1.7	2130	2014	-116	2.5
	Southbound	1012	964	-48	1.5	157	142	-15	1.2	61	51	-10	1.3	1230	1157	-73	2.1
West of A12	Eastbound	2195	2210	15	0.3	358	274	-84	4.7	160	135	-25	2.1	2713	2619	-94	1.8
	Westbound	2307	2406	99	2.0	411	354	-57	2.9	166	158	-8	0.6	2884	2918	34	0.6
East of A12	Eastbound	1583	1768	185	4.5	185	259	74	5.0	95	98	3	0.3	1863	2125	262	5.9
	Westbound	1679	1978	299	7.0	321	313	-8	0.4	104	120	16	1.5	2104	2411	307	6.5
Leiston	Inbound	498	502	4	0.2	72	43	-29	3.8	24	12	-12	2.8	594	557	-37	1.5
	Outbound	532	537	5	0.2	65	46	-19	2.6	20	15	-5	1.2	617	598	-19	0.8

www.wsp.com

Table A.8 – Traffic Flow Calibration – All Counts – 3-4pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	NB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	190	194	4	0.3	✓	32	20	-12	2.4	✓	17	5	-12	3.6	✓	239	219	-20	1.3	✓
		SB	ATC_2_SB	158	153	-5	0.4	✓	24	20	-4	0.9	✓	8	4	-4	1.6	✓	190	177	-13	1.0	✓
3	King Georges Avenue	EB	ATC_3_EB	107	79	-28	2.9	✓	19	1	-18	5.7	✓	5	0	-5	3.2	✓	131	80	-51	5.0	✓
		WB	ATC_3_WB	156	141	-15	1.2	✓	20	1	-19	5.9	✓	6	0	-6	3.5	✓	182	142	-40	3.1	✓
4	Lovers Lane	NB	ATC_4_NB	98	100	2	0.2	✓	12	2	-10	3.8	✓	3	2	-1	0.6	✓	113	104	-9	0.9	✓
		SB	ATC_4_SB	46	47	1	0.1	✓	7	1	-6	3.0	✓	3	1	-2	1.4	✓	56	49	-7	1.0	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	161	173	12	0.9	✓	28	23	-5	1.0	✓	9	5	-4	1.5	✓	198	201	3	0.2	✓
		SB	ATC_7_SB	190	196	6	0.4	✓	23	27	4	0.8	✓	9	7	-2	0.7	✓	222	230	8	0.5	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	122	111	-11	1.0	✓	15	7	-8	2.4	✓	6	1	-5	2.7	✓	143	119	-24	2.1	✓
		SB	ATC_8_SB	117	100	-17	1.6	✓	17	6	-11	3.2	✓	5	1	-4	2.3	✓	139	107	-32	2.9	✓
13	A12 East of Farnham	EB	ATC_13_EB	720	696	-24	0.9	✓	85	76	-9	1.0	✓	39	36	-3	0.5	✓	844	808	-36	1.3	✓
		WB	ATC_13_WB	612	600	-12	0.5	✓	72	84	12	1.4	✓	43	42	-1	0.2	✓	727	726	-1	0.0	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	100	102	2	0.2	✓	20	15	-5	1.2	✓	5	3	-2	1.0	✓	125	120	-5	0.5	✓
		WB	ATC_14_WB	86	91	5	0.5	✓	20	18	-2	0.5	✓	5	5	0	0.0	✓	111	114	3	0.3	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	118	98	-20	1.9	✓	24	12	-12	2.8	✓	18	13	-5	1.3	✓	160	123	-37	3.1	✓
		SB	ATC_16_SB	59	73	14	1.7	✓	16	11	-5	1.4	✓	6	13	7	2.3	✓	81	97	16	1.7	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	337	362	25	1.3	✓	34	32	-2	0.3	✓	17	17	0	0.0	✓	388	411	23	1.2	✓
		SB	ATC_17_SB	228	240	12	0.8	✓	41	44	3	0.5	✓	16	21	5	1.2	✓	285	305	20	1.2	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	263	282	19	1.2	✓	15	20	5	1.2	✓	13	8	-5	1.5	✓	291	310	19	1.1	✓
		WB	ATC_81_WB	181	209	28	2.0	✓	28	22	-6	1.2	✓	11	8	-3	1.0	✓	220	239	19	1.3	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	903	753	-150	5.2	✗	68	92	24	2.7	✓	44	39	-5	0.8	✓	1015	884	-131	4.3	✓
		SB	ATC_82-1_SB	760	657	-103	3.9	✓	118	111	-7	0.7	✓	45	42	-3	0.5	✓	923	810	-113	3.8	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	641	673	32	1.2	✓	41	69	28	3.8	✓	33	46	13	2.1	✓	715	788	73	2.7	✓
		WB	ATC_82-2_WB	646	715	69	2.6	✓	78	107	29	3.0	✓	31	58	27	4.0	✓	755	880	125	4.4	✓
84	A143 North of Beccles to Diss	EB	ATC_84_EB	312	332	20	1.1	✓	36	34	-2	0.3	✓	29	23	-6	1.2	✓	377	389	12	0.6	✓
		WB	ATC_84_WB	251	269	18	1.1	✓	45	47	2	0.3	✓	37	39	2	0.3	✓	333	355	22	1.2	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	90	97	7	0.7	✓	9	14	5	1.5	✓	6	1	-5	2.7	✓	105	112	7	0.7	✓
		WB	ATC_87_WB	63	71	8	1.0	✓	6	19	13	3.7	✓	1	0	-1	1.4	✓	70	90	20	2.2	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	391	512	121	5.7	✗	39	77	38	5.0	✓	21	24	3	0.6	✓	451	613	162	7.0	✗
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	439	516	77	3.5	✓	66	86	20	2.3	✓	28	28	0	0.0	✓	533	630	97	4.0	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	434	374	-60	3.0	✓	25	4	-21	5.5	✓	23	13	-10	2.4	✓	482	391	-91	4.4	✓
		SB	ATC_101-4_SB	409	295	-114	6.1	✗	54	20	-34	5.6	✓	24	16	-8	1.8	✓	487	331	-156	7.7	✗
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	829	777	-52	1.8	✓	185	150	-35	2.7	✓	100	100	0	0.0	✓	1114	1027	-87	2.7	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	927	854	-73	2.4	✓	167	113	-54	4.6	✓	99	96	-3	0.3	✓	1193	1063	-130	3.9	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	367	412	45	2.3	✓	51	19	-32	5.4	✓	16	6	-10	3.0	✓	434	437	3	0.1	✓
		WB	ATC_102-1_WB	442	458	16	0.8	✓	97	59	-38	4.3	✓	22	15	-7	1.6	✓	561	532	-29	1.2	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1312	1325	13	0.4	✓	262	241	-21	1.3	✓	103	106	3	0.3	✓	1677	1672	-5	0.1	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1481	1454	-27	0.7	✓	111	157	46	4.0	✓	102	100	-2	0.2	✓	1694	1711	17	0.4	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	178	200	22	1.6	✓	41	57	16	2.3	✓	23	20	-3	0.6	✓	242	277	35	2.2	✓
		WB	ATC_102-4_WB	190	216	26	1.8	✓	49	55	6	0.8	✓	23	25	2	0.4	✓	262	296	34	2.0	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	105	111	6	0.6	✓	36	32	-4	0.7	✓	6	0	-6	3.5	✓	147	143	-4	0.3	✓
		WB	ATC_103-1_WB	154	277	123	8.4	✗	62	31	-31	4.5	✓	5	0	-5	3.2	✓	221	308	87	5.3	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	681	722	41	1.5	✓	101	107	6	0.6	✓	28	26	-2	0.4	✓	810	855	45	1.6	✓
		WB	ATC_103-4_WB	805	936	131	4.4	✓	88	113	25	2.5	✓	29	34	5	0.9	✓	922	1083	161	5.1	✗
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1371	1179	-192	5.4	✓	263	156	-107	7.4	✗	101	101	0	0.0	✓	1735	1436	-299	7.5	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1248	1069	-179	5.3	✓	253	228	-25	1.6	✓	118	110	-8	0.7	✓	1619	1407	-212	5.5	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	27	27	0	0.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	29	27	-2	0.4	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	9	9	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	9	9	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	EB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	96	102	6	0.6	✓	16	16	0	0.0	✓	6	5	-1	0.4	✓	118	123	5	0.5	✓
		WB	ATC_105-1_WB	130	129	-1	0.1	✓	19	17	-2	0.5	✓	10	5	-5	1.8	✓	159	151	-8	0.6	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	539	508	-31	1.4	✓	70	71	1	0.1	✓	39	35	-4	0.7	✓	648	614	-34	1.4	✓
		SB	ATC_105-2_SB	411	399	-12	0.6	✓	72	69	-3	0.4	✓	37	37	0	0.0	✓	520	505	-15	0.7	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	145	144	-1	0.1	✓	21	14	-7	1.7	✓	10	4	-6	2.3	✓	176	162	-14	1.1	✓
		SB	ATC_202-1_SB	120	120	0	0.0	✓	19	20	1	0.2	✓	12	4	-8	2.8	✓	151	144	-7	0.6	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	554	515	-39	1.7	✓	87	69	-18	2.0	✓	31	30	-1	0.2	✓	672	614	-58	2.3	✓
		WB	ATC_202-2_WB	459	433	-26	1.2	✓	92	68	-24	2.7	✓	33	34	1	0.2	✓	584	535	-49	2.1	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	455	461	6	0.3	✓	57	54	-3	0.4	✓	31	26	-5	0.9	✓	543	541	-2	0.1	✓
		SB	ATC_202-3_SB	335	355	20	1.1	✓	60	59	-1	0.1	✓	35	30	-5	0.9	✓	430	444	14	0.7	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	172	170	-2	0.2	✓	12	8	-4	1.3	✓	6	3	-3	1.4	✓	190	181	-9	0.7	✓
		WB	ATC_204_WB	120	125	5	0.5	✓	47	17	-30	5.3	✓	7	4	-3	1.3	✓	174	146	-28	2.2	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	109	91	-18	1.8	✓	18	12	-6	1.5	✓	13	5	-8	2.7	✓	140	108	-32	2.9	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	168	161	-7	0.5	✓	27	31	4	0.7	✓	7	4	-3	1.3	✓	202	196	-6	0.4	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	160	156	-4	0.3	✓	22	21	-1	0.2	✓	12	5	-7	2.4	✓	194	182	-12	0.9	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	114	102	-12	1.2	✓	18	9	-9	2.4	✓	7	3	-4	1.8	✓	139	114	-25	2.2	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	121	87	-34	3.3	✓	18	5	-13	3.8	✓	8	6	-2	0.8	✓	147	98	-49	4.4	✓
		SB	SCC_A3489_SB	124	89	-35	3.4	✓	19	6	-13	3.7	✓	9	6	-3	1.1	✓	152	101	-51	4.5	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	41	48	7	1.0	✓	6	2	-4	2.0	✓	3	0	-3	2.4	✓	50	50	0	0.0	✓
		SB	SCC_A3527_SB	50	61	11	1.5	✓	7	1	-6	3.0	✓	3	0	-3	2.4	✓	60	62	2	0.3	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	191	194	3	0.2	✓	29	29	0	0.0	✓	13	20	7	1.7	✓	233	243	10	0.6	✓
		SB	SCC_M017_SB	176	182	6	0.4	✓	26	18	-8	1.7	✓	12	15	3	0.8	✓	214	215	1	0.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	45	104	59	6.8	✓	7	4	-3	1.3	✓	3	1	-2	1.4	✓	55	109	54	6.0	✓
		SB	SCC_M055_SB	71	98	27	2.9	✓	11	9	-2	0.6	✓	5	1	-4	2.3	✓	87	108	21	2.1	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	576	739	163	6.4	✗	87	80	-7	0.8	✓	39	48	9	1.4	✓	702	867	165	5.9	✗
		SB	SCC_Y151_SB	642	488	-154	6.5	✗	97	125	28	2.7	✓	44	115	71	8.0	✓	783	728	-55	2.0	✓
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	654	475	-179	7.5	✗	99	68	-31	3.4	✓	45	39	-6	0.9	✓	798	582	-216	8.2	✗
		WB	SCC_Y189_WB	746	526	-220	8.7	✗	112	64	-48	5.1	✓	51	60	9	1.2	✓	909	650	-259	9.3	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	299	279	-20	1.2	✓	60	36	-24	3.5	✓	7	8	1	0.4	✓	366	323	-43	2.3	✓
		EB	MCC_302_B_EB	302	279	-23	1.3	✓	46	29	-17	2.8	✓	6	6	0	0.0	✓	354	314	-40	2.2	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	175	161	-14	1.1	✓	35	9	-26	5.5	✓	5	2	-3	1.6	✓	215	172	-43	3.1	✓
		SB	MCC_302_C_SB	176	164	-12	0.9	✓	29	10	-19	4.3	✓	3	2	-1	0.6	✓	208	176	-32	2.3	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	269	258	-11	0.7	✓	40	31	-9	1.5	✓	6	7	1	0.4	✓	315	296	-19	1.1	✓
		WB	MCC_302_D_WB	254	255	1	0.1	✓	55	38	-17	2.5	✓	8	8	0	0.0	✓	317	301	-16	0.9	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	221	198	-23	1.6	✓	32	19	-13	2.6	✓	9	5	-4	1.5	✓	262	222	-40	2.6	✓
		SB	MCC_303_A_SB	217	199	-18	1.2	✓	35	20	-15	2.9	✓	18	7	-11	3.1	✓	270	226	-44	2.8	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	169	171	2	0.2	✓	22	12	-10	2.4	✓	6	5	-1	0.4	✓	197	188	-9	0.6	✓
		WB	MCC_303_B_WB	127	141	14	1.2	✓	13	11	-2	0.6	✓	3	5	2	1.0	✓	143	157	14	1.1	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	244	231	-13	0.8	✓	31	24	-7	1.3	✓	11	8	-3	1.0	✓	286	263	-23	1.4	✓
		NB	MCC_303_C_NB	211	210	-1	0.1	✓	28	23	-5	1.0	✓	3	6	3	1.4	✓	242	239	-3	0.2	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	136	111	-25	2.2	✓	16	8	-8	2.3	✓	2	4	2	1.2	✓	154	123	-31	2.6	✓
		EB	MCC_303_D_EB	215	160	-55	4.0	✓	25	9	-16	3.9	✓	4	4	0	0.0	✓	244	173	-71	4.9	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	82	101	19	2.0	✓	15	6	-9	2.8	✓	4	4	0	0.0	✓	101	111	10	1.0	✓
		NB	MCC_304_A_NB	134	125	-9	0.8	✓	19	7	-12	3.3	✓	6	4	-2	0.9	✓	159	136	-23	1.9	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	224	254	30	1.9	✓	31	17	-14	2.9	✓	3	3	0	0.0	✓	258	274	16	1.0	✓
		EB	MCC_304_B_EB	172	202	30	2.2	✓	25	14	-11	2.5	✓	3	2	-1	0.6	✓	200	218	18	1.2	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	136	98	-38	3.5	✓	18	2	-16	5.1	✓	5	2	-3	1.6	✓	159	102	-57	5.0	✓
		SB	MCC_304_C_SB	91	71	-20	2.2	✓	16	2	-14	4.7	✓	2	1	-1	0.8	✓	109	74	-35	3.7	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	104	84	-20	2.1	✓	14	8	-6	1.8	✓	2	0	-2	2.0	✓	120	92	-28	2.7	✓
		WB	MCC_304_D_WB	149	139	-10	0.8	✓	18	10	-8	2.1	✓	3	0	-3	2.4	✓	170	149	-21	1.7	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	0	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	716	568	-148	5.8	✗	39	27	-12	2.1	✓	41	42	1	0.2	✓	796	637	-159	5.9	✗
30013377		SB	30013377	724	631	-93	3.6	✓	39	31	-8	1.4	✓	39	43	4	0.6	✓	802	705	-97	3.5	✓
30013396	A14 - J56 Through	EB	30013396	1316	1161	-155	4.4	✓	126	119	-7	0.6	✓	545	462	-83	3.7	✓	1987	1742	-245	5.7	✓
30013397	A14 - J56 EXIT	EB	30013397	376	232	-144	8.3	✗	29	17	-12	2.5	✓	46	38	-8	1.2	✓	451	287	-164	8.5	✗
30013398	A14 - J57 Through	EB	30013398	1045	1007	-38	1.2	✓	95	121	26	2.5	✓	480	410	-70	3.3	✓	1620	1538	-82	2.1	✓
30013399	A14 - J57 EXIT	EB	30013399	623	520	-103	4.3	✓	69	46	-23	3.0	✓	128	79	-49	4.8	✓	820	645	-175	6.5	✗
30013402	A14 - J57 Through	WB	30013402	1135	1228	93	2.7	✓	103	146	43	3.9	✓	315	314	-1	0.1	✓	1553	1688	135	3.4	✓
30013403	A14 - J57 EXIT	WB	30013403	240	249	9	0.6	✓	17	36	19	3.7	✓	43	22	-21	3.7	✓	300	307	7	0.4	✓
30013406	A14 - J55 Through	WB	30013406	800	740	-60	2.2	✓	82	65	-17	2.0	✓	282	242	-40	2.5	✓	1164	1047	-117	3.5	✓
30013407	A14 - J55 EXIT	WB	30013407	971	939	-32	1.0	✓	75	96	21	2.3	✓	157	139	-18	1.5	✓	1203	1174	-29	0.8	✓
30013408	A14 - J55 Through	EB	30013408	736	710	-26	1.0	✓	74	54	-20	2.5	✓	324	265	-59	3.4	✓	1134	1029	-105	3.2	✓
30013410	A14 - J53 Through	NB	30013410	1228	981	-247	7.4	✗	130	140	10	0.9	✓	447	296	-151	7.8	✗	1805	1417	-388	9.7	✗
30013411	A14 - J53 EXIT	NB	30013411	297	164	-133	8.8	✗	29	11	-18	4.0	✓	29	5	-24	5.8	✓	355	180	-175	10.7	✗
30013415	A14 - J51 EXIT	NB	30013415	591	516	-75	3.2	✓	64	91	27	3.1	✓	114	104	-10	1.0	✓	769	711	-58	2.1	✓
30013417	A14 - J51 EXIT	SB	30013417	167	106	-61	5.2	✓	20	23	3	0.6	✓	31	16	-15	3.1	✓	218	145	-73	5.4	✓
30013418	A14 - between J51 and J50	NB	30013418	1082	989	-93	2.9	✓	107	113	6	0.6	✓	337	295	-42	2.4	✓	1526	1397	-129	3.4	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	%GEH or Flow
Car	114	0	98	89%
LGV	114	0	104	99%
HGV	114	0	111	99%
Total Vehs	114	1	97	89%

Table A.9 – Traffic Flow Calibration – Screenlines – 4-5pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	48	49	1	0.1	7	2	-5	2.4	3	0	-3	2.4	58	51	-7	0.9
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	145	132	-13	1.1	21	11	-10	2.5	8	5	-3	1.2	174	148	-26	2.0
SCC_M017_NB	M017 (A144 Ilketshall)	NB	241	241	0	0.0	35	34	-1	0.2	13	15	2	0.5	289	290	1	0.1
ATC_16_NB	A145 North of Blythburgh and B1123	NB	136	134	-2	0.2	22	9	-13	3.3	12	9	-3	0.9	170	152	-18	1.4
ATC_17_NB	A12 North of Blythburgh and A1095	NB	436	439	3	0.1	43	38	-5	0.8	23	21	-2	0.4	502	498	-4	0.2
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	46	51	5	0.7	7	2	-5	2.4	2	0	-2	2.0	55	53	-2	0.3
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	119	108	-11	1.0	17	9	-8	2.2	6	5	-1	0.4	142	122	-20	1.7
SCC_M017_SB	M017 (A144 Ilketshall)	SB	165	160	-5	0.4	24	15	-9	2.0	9	8	-1	0.3	198	183	-15	1.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	75	76	1	0.1	24	11	-13	3.1	10	12	2	0.6	109	99	-10	1.0
ATC_17_SB	A12 North of Blythburgh and A1095	SB	252	255	3	0.2	29	38	9	1.6	13	14	1	0.3	294	307	13	0.7
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	720	594	-126	4.9	70	73	3	0.4	104	91	-13	1.3	894	758	-136	4.7
SCC_M055_NB	M055 (B1077 Swilland)	NB	53	112	59	6.5	8	9	1	0.3	3	1	-2	1.4	64	122	58	6.0
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	1082	800	-282	9.2	78	88	10	1.1	60	31	-29	4.3	1220	919	-301	9.2
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	286	288	2	0.1	26	20	-6	1.3	11	8	-3	1.0	323	316	-7	0.4
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	63	72	9	1.1	9	10	1	0.3	3	2	-1	0.6	75	84	9	1.0
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	835	748	-87	3.1	115	101	-14	1.3	35	39	4	0.7	985	888	-97	3.2
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	197	220	23	1.6	21	22	1	0.2	11	12	1	0.3	229	254	25	1.6
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	119	119	0	0.0	24	28	4	0.8	12	9	-3	0.9	155	156	1	0.1
ATC_14_EB	B1078 West of Wickham Market	EB	125	107	-18	1.7	15	16	1	0.3	6	4	-2	0.9	146	127	-19	1.6
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	779	729	-50	1.8	94	102	8	0.8	23	23	0	0.0	896	854	-42	1.4
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	382	411	29	1.5	48	25	-23	3.8	11	6	-5	1.7	441	442	1	0.0
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	1121	1086	-35	1.1	181	121	-60	4.9	70	64	-6	0.7	1372	1271	-101	2.8
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	147	149	2	0.2	34	34	0	0.0	7	4	-3	1.3	188	187	-1	0.1
ATC_14_WB	B1078 West of Wickham Market	WB	102	90	-12	1.2	15	21	6	1.4	7	7	0	0.0	124	118	-6	0.5
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	882	1074	192	6.1	80	92	12	1.3	22	20	-2	0.4	984	1186	202	6.1
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	557	474	-83	3.7	135	91	-44	4.1	22	16	-6	1.4	714	581	-133	5.2
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	957	946	-11	0.4	196	141	-55	4.2	81	80	-1	0.1	1234	1167	-67	1.9

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	98	98	0	0.0	14	14	0	0.0	8	4	-4	1.6	120	116	-4	0.4
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	190	184	-6	0.4	16	11	-5	1.4	2	2	0	0.0	208	197	-11	0.8
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	621	647	26	1.0	47	68	21	2.8	30	43	13	2.2	698	758	60	2.2
ATC_103-1_EB	Road to Martlesham	EB	111	111	0	0.0	34	28	-6	1.1	5	0	-5	3.2	150	139	-11	0.9
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	189	197	8	0.6	41	52	11	1.6	17	12	-5	1.3	247	261	14	0.9
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	443	485	42	1.9	66	82	16	1.9	12	20	8	2.0	521	587	66	2.8
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	168	169	1	0.1	24	26	2	0.4	10	5	-5	1.8	202	200	-2	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	146	148	2	0.2	54	28	-26	4.1	9	6	-3	1.1	209	182	-27	1.9
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	690	781	91	3.4	79	112	33	3.4	34	70	36	5.0	803	963	160	5.4
ATC_103-1_WB	Road to Martlesham	WB	156	259	103	7.2	54	30	-24	3.7	8	0	-8	4.0	218	289	71	4.5
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	198	209	11	0.8	42	67	25	3.4	19	19	0	0.0	259	295	36	2.2
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	444	508	64	2.9	82	106	24	2.5	26	23	-3	0.6	552	637	85	3.5
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	32	30	-2	0.4	4	0	-4	2.8	4	1	-3	1.9	40	31	-9	1.5
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	172	169	-3	0.2	25	19	-6	1.3	0	4	4	2.8	197	192	-5	0.4
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	208	206	-2	0.1	21	25	4	0.8	7	4	-3	1.3	236	235	-1	0.1
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	123	119	-4	0.4	22	10	-12	3.0	3	1	-2	1.4	148	130	-18	1.5
Outbound																		
ATC_4_NB	Lovers Lane	NB	196	185	-11	0.8	16	3	-13	4.2	4	1	-3	1.9	216	189	-27	1.9
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	148	155	7	0.6	25	19	-6	1.3	0	6	6	3.5	173	180	7	0.5
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	191	197	6	0.4	25	31	6	1.1	9	5	-4	1.5	225	233	8	0.5
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	122	116	-6	0.6	13	7	-6	1.9	2	0	-2	2.0	137	123	-14	1.2

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	1006	995	-11	0.3	128	94	-34	3.2	59	50	-9	1.2	1193	1139	-54	1.6
	Southbound	657	650	-7	0.3	101	75	-26	2.8	40	39	-1	0.2	798	764	-34	1.2
Northern	Northbound	2141	1794	-347	7.8	182	190	8	0.6	178	131	-47	3.8	2501	2115	-386	8.0
	Southbound	1095	1040	-55	1.7	145	133	-12	1.0	49	53	4	0.6	1289	1226	-63	1.8
West of A12	Eastbound	2526	2452	-74	1.5	362	292	-70	3.9	122	106	-16	1.5	3010	2850	-160	3.0
	Westbound	2645	2733	88	1.7	460	379	-81	4.0	139	127	-12	1.0	3244	3239	-5	0.1
East of A12	Eastbound	1652	1722	70	1.7	218	255	37	2.4	74	81	7	0.8	1944	2058	114	2.5
	Westbound	1802	2074	272	6.2	335	369	34	1.8	106	123	17	1.6	2243	2566	323	6.6
Leiston	Inbound	535	524	-11	0.5	72	54	-18	2.3	14	10	-4	1.2	621	588	-33	1.3
	Outbound	657	653	-4	0.2	79	60	-19	2.3	15	12	-3	0.8	751	725	-26	1.0

Table A.10 – Traffic Flow Calibration – All Counts – 4-5pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	267	280	13	0.8	✓	51	28	-23	3.7	✓	12	4	-8	2.8	✓	330	312	-18	1.0	✓
		SB	ATC_2_SB	142	140	-2	0.2	✓	27	17	-10	2.1	✓	7	3	-4	1.8	✓	176	160	-16	1.2	✓
3	King Georges Avenue	EB	ATC_3_EB	113	70	-43	4.5	✓	15	2	-13	4.5	✓	3	0	-3	2.4	✓	131	72	-59	5.9	✓
		WB	ATC_3_WB	236	153	-83	6.0	✓	21	0	-21	6.5	✓	3	0	-3	2.4	✓	260	153	-107	7.4	×
4	Lovers Lane	NB	ATC_4_NB	196	185	-11	0.8	✓	16	3	-13	4.2	✓	4	1	-3	1.9	✓	216	189	-27	1.9	✓
		SB	ATC_4_SB	32	30	-2	0.4	✓	4	0	-4	2.8	✓	4	1	-3	1.9	✓	40	31	-9	1.5	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	208	206	-2	0.1	✓	21	25	4	0.8	✓	7	4	-3	1.3	✓	236	235	-1	0.1	✓
		SB	ATC_7_SB	191	197	6	0.4	✓	25	31	6	1.1	✓	9	5	-4	1.5	✓	225	233	8	0.5	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	123	119	-4	0.4	✓	22	10	-12	3.0	✓	3	1	-2	1.4	✓	148	130	-18	1.5	✓
		SB	ATC_8_SB	122	116	-6	0.6	✓	13	7	-6	1.9	✓	2	0	-2	2.0	✓	137	123	-14	1.2	✓
13	A12 East of Farnham	EB	ATC_13_EB	800	745	-55	2.0	✓	83	73	-10	1.1	✓	32	30	-2	0.4	✓	915	848	-67	2.3	✓
		WB	ATC_13_WB	701	682	-19	0.7	✓	83	87	4	0.4	✓	37	37	0	0.0	✓	821	806	-15	0.5	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	125	107	-18	1.7	✓	15	16	1	0.3	✓	6	4	-2	0.9	✓	146	127	-19	1.6	✓
		WB	ATC_14_WB	102	90	-12	1.2	✓	15	21	6	1.4	✓	7	7	0	0.0	✓	124	118	-6	0.5	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	136	134	-2	0.2	✓	22	9	-13	3.3	✓	12	9	-3	0.9	✓	170	152	-18	1.4	✓
		SB	ATC_16_SB	75	76	1	0.1	✓	24	11	-13	3.1	✓	10	12	2	0.6	✓	109	99	-10	1.0	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	436	439	3	0.1	✓	43	38	-5	0.8	✓	23	21	-2	0.4	✓	502	498	-4	0.2	✓
		SB	ATC_17_SB	252	255	3	0.2	✓	29	38	9	1.6	✓	13	14	1	0.3	✓	294	307	13	0.7	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	286	288	2	0.1	✓	26	20	-6	1.3	✓	11	8	-3	1.0	✓	323	316	-7	0.4	✓
		WB	ATC_81_WB	197	220	23	1.6	✓	21	22	1	0.2	✓	11	12	1	0.3	✓	229	254	25	1.6	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	1082	800	-282	9.2	×	78	88	10	1.1	✓	60	31	-29	4.3	✓	1220	919	-301	9.2	×
		SB	ATC_82-1_SB	835	748	-87	3.1	✓	115	101	-14	1.3	✓	35	39	4	0.7	✓	985	888	-97	3.2	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	621	647	26	1.0	✓	47	68	21	2.8	✓	30	43	13	2.2	✓	698	758	60	2.2	✓
		WB	ATC_82-2_WB	690	781	91	3.4	✓	79	112	33	3.4	✓	34	70	36	5.0	✓	803	963	160	5.4	×
84	A143 North of Beccles to Diss	EB	ATC_84_EB	409	412	3	0.1	✓	35	40	5	0.8	✓	20	12	-8	2.0	✓	464	464	0	0.0	✓
		WB	ATC_84_WB	303	326	23	1.3	✓	60	62	2	0.3	✓	33	33	0	0.0	✓	396	421	25	1.2	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	124	124	0	0.0	✓	14	12	-2	0.6	✓	5	1	-4	2.3	✓	143	137	-6	0.5	✓
		WB	ATC_87_WB	61	64	3	0.4	✓	12	13	1	0.3	✓	2	0	-2	2.0	✓	75	77	2	0.2	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	443	485	42	1.9	✓	66	82	16	1.9	✓	12	20	8	2.0	✓	521	587	66	2.8	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	444	508	64	2.9	✓	82	106	24	2.5	✓	26	23	-3	0.6	✓	552	637	85	3.5	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	437	381	-56	2.8	✓	40	16	-24	4.5	✓	24	13	-11	2.6	✓	501	410	-91	4.3	✓
		SB	ATC_101-4_SB	477	424	-53	2.5	✓	77	44	-33	4.2	✓	18	15	-3	0.7	✓	572	483	-89	3.9	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	957	946	-11	0.4	✓	196	141	-55	4.2	✓	81	80	-1	0.1	✓	1234	1167	-67	1.9	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	1121	1086	-35	1.1	✓	181	121	-60	4.9	✓	70	64	-6	0.7	✓	1372	1271	-101	2.8	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	382	411	29	1.5	✓	48	25	-23	3.8	✓	11	6	-5	1.7	✓	441	442	1	0.0	✓
		WB	ATC_102-1_WB	557	474	-83	3.7	✓	135	91	-44	4.1	✓	22	16	-6	1.4	✓	714	581	-133	5.2	×
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1529	1471	-58	1.5	✓	257	213	-44	2.9	✓	95	87	-8	0.8	✓	1881	1771	-110	2.6	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1541	1540	-1	0.0	✓	118	138	20	1.8	✓	86	70	-16	1.8	✓	1745	1748	3	0.1	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	189	197	8	0.6	✓	41	52	11	1.6	✓	17	12	-5	1.3	✓	247	261	14	0.9	✓
		WB	ATC_102-4_WB	198	209	11	0.8	✓	42	67	25	3.4	✓	19	19	0	0.0	✓	259	295	36	2.2	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	111	111	0	0.0	✓	34	28	-6	1.1	✓	5	0	-5	3.2	✓	150	139	-11	0.9	✓
		WB	ATC_103-1_WB	156	259	103	7.2	×	54	30	-24	3.7	✓	8	0	-8	4.0	✓	218	289	71	4.5	✓
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	779	729	-50	1.8	✓	94	102	8	0.8	✓	23	23	0	0.0	✓	896	854	-42	1.4	✓
		WB	ATC_103-4_WB	882	1074	192	6.1	×	80	92	12	1.3	✓	22	20	-2	0.4	✓	984	1186	202	6.1	×
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1372	1294	-78	2.1	✓	235	137	-98	7.2	✓	74	70	-4	0.5	✓	1681	1501	-180	4.5	✓
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1395	1197	-198	5.5	✓	239	201	-38	2.6	✓	112	93	-19	1.9	✓	1746	1491	-255	6.3	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	38	38	0	0.0	✓	0	0	0	0.0	✓	1	0	-1	1.4	✓	39	38	-1	0.2	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	98	98	0	0.0	✓	14	14	0	0.0	✓	8	4	-4	1.6	✓	120	116	-4	0.4	✓
		WB	ATC_105-1_WB	168	169	1	0.1	✓	24	26	2	0.4	✓	10	5	-5	1.8	✓	202	200	-2	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	663	621	-42	1.7	✓	86	81	-5	0.5	✓	36	34	-2	0.3	✓	785	736	-49	1.8	✓
		SB	ATC_105-2_SB	487	463	-24	1.1	✓	78	70	-8	0.9	✓	22	24	2	0.4	✓	587	557	-30	1.3	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	147	149	2	0.2	✓	34	34	0	0.0	✓	7	4	-3	1.3	✓	188	187	-1	0.1	✓
		SB	ATC_202-1_SB	119	119	0	0.0	✓	24	28	4	0.8	✓	12	9	-3	0.9	✓	155	156	1	0.1	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	594	564	-30	1.2	✓	95	79	-16	1.7	✓	38	31	-7	1.2	✓	727	674	-53	2.0	✓
		WB	ATC_202-2_WB	487	476	-11	0.5	✓	97	79	-18	1.9	✓	25	23	-2	0.4	✓	609	578	-31	1.3	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	509	502	-7	0.3	✓	60	55	-5	0.7	✓	27	23	-4	0.8	✓	596	580	-16	0.7	✓
		SB	ATC_202-3_SB	374	383	9	0.5	✓	52	50	-2	0.3	✓	18	19	1	0.2	✓	444	452	8	0.4	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	190	184	-6	0.4	✓	16	11	-5	1.4	✓	2	2	0	0.0	✓	208	197	-11	0.8	✓
		WB	ATC_204_WB	146	148	2	0.2	✓	54	28	-26	4.1	✓	9	6	-3	1.1	✓	209	182	-27	1.9	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	114	99	-15	1.5	✓	25	17	-8	1.7	✓	7	5	-2	0.8	✓	146	121	-25	2.2	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	181	166	-15	1.1	✓	26	24	-2	0.4	✓	6	5	-1	0.4	✓	213	195	-18	1.3	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	227	207	-20	1.4	✓	30	20	-10	2.0	✓	10	4	-6	2.3	✓	267	231	-36	2.3	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	132	111	-21	1.9	✓	15	10	-5	1.4	✓	6	4	-2	0.9	✓	153	125	-28	2.4	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	145	132	-13	1.1	✓	21	11	-10	2.5	✓	8	5	-3	1.2	✓	174	148	-26	2.0	✓
		SB	SCC_A3489_SB	119	108	-11	1.0	✓	17	9	-8	2.2	✓	6	5	-1	0.4	✓	142	122	-20	1.7	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	48	49	1	0.1	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	58	51	-7	0.9	✓
		SB	SCC_A3527_SB	46	51	5	0.7	✓	7	2	-5	2.4	✓	2	0	-2	2.0	✓	55	53	-2	0.3	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	241	241	0	0.0	✓	35	34	-1	0.2	✓	13	15	2	0.5	✓	289	290	1	0.1	✓
		SB	SCC_M017_SB	165	160	-5	0.4	✓	24	15	-9	2.0	✓	9	8	-1	0.3	✓	198	183	-15	1.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	53	112	59	6.5	✓	8	9	1	0.3	✓	3	1	-2	1.4	✓	64	122	58	6.0	✓
		SB	SCC_M055_SB	63	72	9	1.1	✓	9	10	1	0.3	✓	3	2	-1	0.6	✓	75	84	9	1.0	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	572	750	178	6.9	✗	84	76	-8	0.9	✓	30	30	0	0.0	✓	686	856	170	6.1	✗
		SB	SCC_Y151_SB	662	610	-52	2.1	✓	97	164	67	5.9	✓	35	65	30	4.2	✓	794	839	45	1.6	✓
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	668	459	-209	8.8	✗	97	61	-36	4.1	✓	35	19	-16	3.1	✓	800	539	-261	10.1	✗
		WB	SCC_Y189_WB	797	511	-286	11.2	✗	116	84	-32	3.2	✓	42	32	-10	1.6	✓	955	627	-328	11.7	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	327	319	-8	0.4	✓	66	44	-22	3.0	✓	6	7	1	0.4	✓	399	370	-29	1.5	✓
		EB	MCC_302_B_EB	334	312	-22	1.2	✓	53	35	-18	2.7	✓	4	4	0	0.0	✓	391	351	-40	2.1	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	170	171	1	0.1	✓	51	27	-24	3.8	✓	5	2	-3	1.6	✓	226	200	-26	1.8	✓
		SB	MCC_302_C_SB	205	198	-7	0.5	✓	28	16	-12	2.6	✓	2	1	-1	0.8	✓	235	215	-20	1.3	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	303	290	-13	0.8	✓	32	34	2	0.3	✓	2	5	3	1.6	✓	337	329	-8	0.4	✓
		WB	MCC_302_D_WB	267	270	3	0.2	✓	59	54	-5	0.7	✓	6	8	2	0.8	✓	332	332	0	0.0	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	239	271	32	2.0	✓	37	34	-3	0.5	✓	4	3	-1	0.5	✓	280	308	28	1.6	✓
		SB	MCC_303_A_SB	238	222	-16	1.1	✓	46	27	-19	3.1	✓	4	2	-2	1.2	✓	288	251	-37	2.3	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	172	169	-3	0.2	✓	25	19	-6	1.3	✓	0	4	4	2.8	✓	197	192	-5	0.4	✓
		WB	MCC_303_B_WB	148	155	7	0.6	✓	25	19	-6	1.3	✓	0	6	6	3.5	✓	173	180	7	0.5	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	240	237	-3	0.2	✓	39	29	-10	1.7	✓	3	4	1	0.5	✓	282	270	-12	0.7	✓
		NB	MCC_303_C_NB	256	249	-7	0.4	✓	41	32	-9	1.5	✓	7	5	-2	0.8	✓	304	286	-18	1.0	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	195	129	-66	5.2	✓	34	7	-27	6.0	✓	6	4	-2	0.9	✓	235	140	-95	6.9	✓
		EB	MCC_303_D_EB	204	179	-25	1.8	✓	23	10	-13	3.2	✓	2	2	0	0.0	✓	229	191	-38	2.6	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	98	98	0	0.0	✓	15	8	-7	2.1	✓	0	2	2	2.0	✓	113	108	-5	0.5	✓
		NB	MCC_304_A_NB	125	89	-36	3.5	✓	19	1	-18	5.7	✓	0	4	4	2.8	✓	144	94	-50	4.6	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	260	281	21	1.3	✓	29	20	-9	1.8	✓	2	3	1	0.6	✓	291	304	13	0.8	✓
		EB	MCC_304_B_EB	175	185	10	0.7	✓	33	21	-12	2.3	✓	3	2	-1	0.6	✓	211	208	-3	0.2	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	111	98	-13	1.3	✓	24	5	-19	5.0	✓	0	2	2	2.0	✓	135	105	-30	2.7	✓
		SB	MCC_304_C_SB	94	86	-8	0.8	✓	12	2	-10	3.8	✓	1	1	0	0.0	✓	107	89	-18	1.8	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	102	94	-8	0.8	✓	22	11	-11	2.7	✓	4	0	-4	2.8	✓	128	105	-23	2.1	✓
		WB	MCC_304_D_WB	177	211	34	2.4	✓	26	20	-6	1.3	✓	2	0	-2	2.0	✓	205	231	26	1.8	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	696	585	-111	4.4	✓	34	21	-13	2.5	✓	26	22	-4	0.8	✓	756	628	-128	4.9	✓
30013377		SB	30013377	879	859	-20	0.7	✓	37	33	-4	0.7	✓	29	31	2	0.4	✓	945	923	-22	0.7	✓
30013396	A14 - J56 Through	EB	30013396	1603	1469	-134	3.4	✓	145	112	-33	2.9	✓	423	377	-46	2.3	✓	2171	1958	-213	4.7	✓
30013397	A14 - J56 EXIT	EB	30013397	425	353	-72	3.7	✓	26	25	-1	0.2	✓	32	33	1	0.2	✓	483	411	-72	3.4	✓
30013398	A14 - J57 Through	EB	30013398	1348	1286	-62	1.7	✓	101	112	11	1.1	✓	365	326	-39	2.1	✓	1814	1724	-90	2.1	✓
30013399	A14 - J57 EXIT	EB	30013399	713	645	-68	2.6	✓	88	45	-43	5.3	✓	139	83	-56	5.3	✓	940	773	-167	5.7	×
30013402	A14 - J57 Through	WB	30013402	1469	1542	73	1.9	✓	122	144	22	1.9	✓	282	297	15	0.9	✓	1873	1983	110	2.5	✓
30013403	A14 - J57 EXIT	WB	30013403	196	206	10	0.7	✓	17	34	17	3.4	✓	43	28	-15	2.5	✓	256	268	12	0.7	✓
30013406	A14 - J55 Through	WB	30013406	1126	1073	-53	1.6	✓	94	60	-34	3.9	✓	254	230	-24	1.5	✓	1474	1363	-111	2.9	✓
30013407	A14 - J55 EXIT	WB	30013407	1066	1185	119	3.5	✓	75	87	12	1.3	✓	152	130	-22	1.9	✓	1293	1402	109	3.0	✓
30013408	A14 - J55 Through	EB	30013408	971	949	-22	0.7	✓	79	50	-29	3.6	✓	249	225	-24	1.6	✓	1299	1224	-75	2.1	✓
30013410	A14 - J53 Through	NB	30013410	1620	1289	-331	8.7	×	139	107	-32	2.9	✓	397	324	-73	3.8	✓	2156	1720	-436	9.9	×
30013411	A14 - J53 EXIT	NB	30013411	374	294	-80	4.4	✓	39	8	-31	6.4	✓	28	3	-25	6.4	✓	441	305	-136	7.0	×
30013415	A14 - J51 EXIT	NB	30013415	720	594	-126	4.9	✓	70	73	3	0.4	✓	104	91	-13	1.3	✓	894	758	-136	4.7	✓
30013417	A14 - J51 EXIT	SB	30013417	229	188	-41	2.8	✓	26	41	15	2.6	✓	27	25	-2	0.4	✓	282	254	-28	1.7	✓
30013418	A14 - between J51 and J50	NB	30013418	1533	1398	-135	3.5	✓	125	125	0	0.0	✓	331	300	-31	1.7	✓	1989	1823	-166	3.8	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	1	103	94%
LGV	114	0	107	100%
HGV	114	0	112	100%
Total Vehs	114	2	99	90%

www.wsp.com

Table A.11 – Traffic Flow Calibration – Screenlines – 5-6pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	47	50	3	0.4	6	1	-5	2.7	2	0	-2	2.0	55	51	-4	0.5
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	116	102	-14	1.3	14	4	-10	3.3	4	3	-1	0.5	134	109	-25	2.3
SCC_M017_NB	M017 (A144 Ilketshall)	NB	229	223	-6	0.4	27	19	-8	1.7	8	9	1	0.3	264	251	-13	0.8
ATC_16_NB	A145 North of Blythburgh and B1123	NB	115	90	-25	2.5	19	6	-13	3.7	5	4	-1	0.5	139	100	-39	3.6
ATC_17_NB	A12 North of Blythburgh and A1095	NB	419	443	24	1.2	43	35	-8	1.3	14	11	-3	0.8	476	489	13	0.6
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	63	69	6	0.7	7	1	-6	3.0	2	0	-2	2.0	72	70	-2	0.2
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	123	109	-14	1.3	15	5	-10	3.2	4	4	0	0.0	142	118	-24	2.1
SCC_M017_SB	M017 (A144 Ilketshall)	SB	175	170	-5	0.4	21	10	-11	2.8	6	5	-1	0.4	202	185	-17	1.2
ATC_16_SB	A145 North of Blythburgh and B1123	SB	77	79	2	0.2	24	7	-17	4.3	4	8	4	1.6	105	94	-11	1.1
ATC_17_SB	A12 North of Blythburgh and A1095	SB	214	211	-3	0.2	29	33	4	0.7	10	11	1	0.3	253	255	2	0.1
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	803	674	-129	4.7	44	56	12	1.7	82	72	-10	1.1	929	802	-127	4.3
SCC_M055_NB	M055 (B1077 Swilland)	NB	37	94	57	7.0	4	7	3	1.3	1	1	0	0.0	42	102	60	7.1
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	953	716	-237	8.2	52	80	28	3.4	38	22	-16	2.9	1043	818	-225	7.4
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	326	329	3	0.2	17	12	-5	1.3	10	7	-3	1.0	353	348	-5	0.3
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	42	57	15	2.1	5	7	2	0.8	2	1	-1	0.8	49	65	16	2.1
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	737	643	-94	3.6	81	70	-11	1.3	34	29	-5	0.9	852	742	-110	3.9
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	198	228	30	2.1	19	17	-2	0.5	6	10	4	1.4	223	255	32	2.1
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	123	128	5	0.4	23	21	-2	0.4	4	3	-1	0.5	150	152	2	0.2
ATC_14_EB	B1078 West of Wickham Market	EB	131	113	-18	1.6	22	16	-6	1.4	6	3	-3	1.4	159	132	-27	2.2
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	694	779	85	3.1	67	79	12	1.4	16	20	4	0.9	777	878	101	3.5
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	400	379	-21	1.1	38	13	-25	5.0	6	4	-2	0.9	444	396	-48	2.3
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	1356	1293	-63	1.7	159	115	-44	3.8	57	52	-5	0.7	1572	1460	-112	2.9
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	133	140	7	0.6	19	17	-2	0.5	4	2	-2	1.2	156	159	3	0.2
ATC_14_WB	B1078 West of Wickham Market	WB	90	88	-2	0.2	13	15	2	0.5	5	4	-1	0.5	108	107	-1	0.1
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	1023	1087	64	2.0	82	99	17	1.8	22	20	-2	0.4	1127	1206	79	2.3
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	679	626	-53	2.1	144	88	-56	5.2	17	8	-9	2.5	840	722	-118	4.2
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	968	981	13	0.4	118	104	-14	1.3	59	64	5	0.6	1145	1149	4	0.1

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	103	102	-1	0.1	13	7	-6	1.9	3	2	-1	0.6	119	111	-8	0.7
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	168	166	-2	0.2	14	9	-5	1.5	2	2	0	0.0	184	177	-7	0.5
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	662	700	38	1.5	35	57	22	3.2	12	36	24	4.9	709	793	84	3.1
ATC_103-1_EB	Road to Martlesham	EB	134	130	-4	0.3	37	25	-12	2.2	2	0	-2	2.0	173	155	-18	1.4
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	182	192	10	0.7	35	48	13	2.0	10	7	-3	1.0	227	247	20	1.3
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	520	573	53	2.3	31	64	33	4.8	15	18	3	0.7	566	655	89	3.6
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	110	113	3	0.3	11	11	0	0.0	3	1	-2	1.4	124	125	1	0.1
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	194	193	-1	0.1	18	7	-11	3.1	2	2	0	0.0	214	202	-12	0.8
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	623	948	325	11.6	40	92	52	6.4	16	51	35	6.0	679	1091	412	13.8
ATC_103-1_WB	Road to Martlesham	WB	170	337	167	10.5	73	34	-39	5.3	6	0	-6	3.5	249	371	122	6.9
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	206	224	18	1.2	36	64	28	4.0	9	12	3	0.9	251	300	49	3.0
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	539	640	101	4.2	51	81	30	3.7	15	12	-3	0.8	605	733	128	4.9
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	32	32	0	0.0	2	0	-2	2.0	2	0	-2	2.0	36	32	-4	0.7
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	155	158	3	0.2	19	12	-7	1.8	0	3	3	2.4	174	173	-1	0.1
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	202	206	4	0.3	18	17	-1	0.2	6	3	-3	1.4	226	226	0	0.0
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	118	116	-2	0.2	12	4	-8	2.8	3	0	-3	2.4	133	120	-13	1.2
Outbound																		
ATC_4_NB	Lovers Lane	NB	59	66	7	0.9	4	1	-3	1.9	1	0	-1	1.4	64	67	3	0.4
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	146	154	8	0.7	25	11	-14	3.3	0	3	3	2.4	171	168	-3	0.2
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	166	172	6	0.5	14	14	0	0.0	3	3	0	0.0	183	189	6	0.4
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	118	110	-8	0.7	11	4	-7	2.6	2	0	-2	2.0	131	114	-17	1.5

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	926	908	-18	0.6	109	65	-44	4.7	33	27	-6	1.1	1068	1000	-68	2.1
	Southbound	652	638	-14	0.6	96	56	-40	4.6	26	28	2	0.4	774	722	-52	1.9
Northern	Northbound	2119	1813	-306	6.9	117	155	38	3.3	131	102	-29	2.7	2367	2070	-297	6.3
	Southbound	977	928	-49	1.6	105	94	-11	1.1	42	40	-2	0.3	1124	1062	-62	1.9
West of A12	Eastbound	2704	2692	-12	0.2	309	244	-65	3.9	89	82	-7	0.8	3102	3018	-84	1.5
	Westbound	2893	2922	29	0.5	376	323	-53	2.8	107	98	-9	0.9	3376	3343	-33	0.6
East of A12	Eastbound	1769	1863	94	2.2	165	210	45	3.3	44	65	21	2.8	1978	2138	160	3.5
	Westbound	1842	2455	613	13.2	229	289	60	3.7	51	78	27	3.4	2122	2822	700	14.1
Leiston	Inbound	507	512	5	0.2	51	33	-18	2.8	11	6	-5	1.7	569	551	-18	0.8
	Outbound	489	502	13	0.6	54	30	-24	3.7	6	6	0	0.0	549	538	-11	0.5

www.wsp.com

Table A.12 – Traffic Flow Calibration – All Counts – 5-6pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	154	162	8	0.6	✓	27	11	-16	3.7	✓	3	1	-2	1.4	✓	184	174	-10	0.7	✓
		SB	ATC_2_SB	126	128	2	0.2	✓	20	8	-12	3.2	✓	5	1	-4	2.3	✓	151	137	-14	1.2	✓
3	King Georges Avenue	EB	ATC_3_EB	86	66	-20	2.3	✓	6	1	-5	2.7	✓	1	0	-1	1.4	✓	93	67	-26	2.9	✓
		WB	ATC_3_WB	145	123	-22	1.9	✓	15	0	-15	5.5	✓	1	0	-1	1.4	✓	161	123	-38	3.2	✓
4	Lovers Lane	NB	ATC_4_NB	59	66	7	0.9	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	64	67	3	0.4	✓
		SB	ATC_4_SB	32	32	0	0.0	✓	2	0	-2	2.0	✓	2	0	-2	2.0	✓	36	32	-4	0.7	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	202	206	4	0.3	✓	18	17	-1	0.2	✓	6	3	-3	1.4	✓	226	226	0	0.0	✓
		SB	ATC_7_SB	166	172	6	0.5	✓	14	14	0	0.0	✓	3	3	0	0.0	✓	183	189	6	0.4	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	118	116	-2	0.2	✓	12	4	-8	2.8	✓	3	0	-3	2.4	✓	133	120	-13	1.2	✓
		SB	ATC_8_SB	118	110	-8	0.7	✓	11	4	-7	2.6	✓	2	0	-2	2.0	✓	131	114	-17	1.5	✓
13	A12 East of Farnham	EB	ATC_13_EB	763	735	-28	1.0	✓	74	68	-6	0.7	✓	22	22	0	0.0	✓	859	825	-34	1.2	✓
		WB	ATC_13_WB	569	565	-4	0.2	✓	40	53	13	1.9	✓	18	25	7	1.5	✓	627	643	16	0.6	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	131	113	-18	1.6	✓	22	16	-6	1.4	✓	6	3	-3	1.4	✓	159	132	-27	2.2	✓
		WB	ATC_14_WB	90	88	-2	0.2	✓	13	15	2	0.5	✓	5	4	-1	0.5	✓	108	107	-1	0.1	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	115	90	-25	2.5	✓	19	6	-13	3.7	✓	5	4	-1	0.5	✓	139	100	-39	3.6	✓
		SB	ATC_16_SB	77	79	2	0.2	✓	24	7	-17	4.3	✓	4	8	4	1.6	✓	105	94	-11	1.1	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	419	443	24	1.2	✓	43	35	-8	1.3	✓	14	11	-3	0.8	✓	476	489	13	0.6	✓
		SB	ATC_17_SB	214	211	-3	0.2	✓	29	33	4	0.7	✓	10	11	1	0.3	✓	253	255	2	0.1	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	326	329	3	0.2	✓	17	12	-5	1.3	✓	10	7	-3	1.0	✓	353	348	-5	0.3	✓
		WB	ATC_81_WB	198	228	30	2.1	✓	19	17	-2	0.5	✓	6	10	4	1.4	✓	223	255	32	2.1	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	953	716	-237	8.2	✗	52	80	28	3.4	✓	38	22	-16	2.9	✓	1043	818	-225	7.4	✗
		SB	ATC_82-1_SB	737	643	-94	3.6	✓	81	70	-11	1.3	✓	34	29	-5	0.9	✓	852	742	-110	3.9	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	662	700	38	1.5	✓	35	57	22	3.2	✓	12	36	24	4.9	✓	709	793	84	3.1	✓
		WB	ATC_82-2_WB	623	948	325	11.6	✗	40	92	52	6.4	✓	16	51	35	6.0	✓	679	1091	412	13.8	✗
84	A143 North of Beccles to Diss	EB	ATC_84_EB	476	469	-7	0.3	✓	39	38	-1	0.2	✓	11	5	-6	2.1	✓	526	512	-14	0.6	✓
		WB	ATC_84_WB	281	304	23	1.3	✓	44	47	3	0.4	✓	23	24	1	0.2	✓	348	375	27	1.4	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	138	140	2	0.2	✓	11	8	-3	1.0	✓	7	0	-7	3.7	✓	156	148	-8	0.6	✓
		WB	ATC_87_WB	71	77	6	0.7	✓	5	8	3	1.2	✓	2	0	-2	2.0	✓	78	85	7	0.8	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	520	573	53	2.3	✓	31	64	33	4.8	✓	15	18	3	0.7	✓	566	655	89	3.6	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	539	640	101	4.2	✓	51	81	30	3.7	✓	15	12	-3	0.8	✓	605	733	128	4.9	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	494	483	-11	0.5	✓	30	7	-23	5.3	✓	13	10	-3	0.9	✓	537	500	-37	1.6	✓
		SB	ATC_101-4_SB	572	581	9	0.4	✓	57	18	-39	6.4	✓	13	8	-5	1.5	✓	642	607	-35	1.4	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	968	981	13	0.4	✓	118	104	-14	1.3	✓	59	64	5	0.6	✓	1145	1149	4	0.1	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	1356	1293	-63	1.7	✓	159	115	-44	3.8	✓	57	52	-5	0.7	✓	1572	1460	-112	2.9	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	400	379	-21	1.1	✓	38	13	-25	5.0	✓	6	4	-2	0.9	✓	444	396	-48	2.3	✓
		WB	ATC_102-1_WB	679	626	-53	2.1	✓	144	88	-56	5.2	✓	17	8	-9	2.5	✓	840	722	-118	4.2	✓
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1484	1552	68	1.7	✓	213	182	-31	2.2	✓	71	69	-2	0.2	✓	1768	1803	35	0.8	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1640	1618	-22	0.5	✓	91	138	47	4.4	✓	57	53	-4	0.5	✓	1788	1809	21	0.5	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	182	192	10	0.7	✓	35	48	13	2.0	✓	10	7	-3	1.0	✓	227	247	20	1.3	✓
		WB	ATC_102-4_WB	206	224	18	1.2	✓	36	64	28	4.0	✓	9	12	3	0.9	✓	251	300	49	3.0	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	134	130	-4	0.3	✓	37	25	-12	2.2	✓	2	0	-2	2.0	✓	173	155	-18	1.4	✓
		WB	ATC_103-1_WB	170	337	167	10.5	✗	73	34	-39	5.3	✓	6	0	-6	3.5	✓	249	371	122	6.9	✗
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	694	779	85	3.1	✓	67	79	12	1.4	✓	16	20	4	0.9	✓	777	878	101	3.5	✓
		WB	ATC_103-4_WB	1023	1087	64	2.0	✓	82	99	17	1.8	✓	22	20	-2	0.4	✓	1127	1206	79	2.3	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1467	1248	-219	5.9	✓	248	138	-110	7.9	✗	53	54	1	0.1	✓	1768	1440	-328	8.2	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	1273	1264	-9	0.3	✓	193	173	-20	1.5	✓	71	70	-1	0.1	✓	1537	1507	-30	0.8	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	41	41	0	0.0	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	43	41	-2	0.3	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	7	7	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	7	7	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	103	102	-1	0.1	✓	13	7	-6	1.9	✓	3	2	-1	0.6	✓	119	111	-8	0.7	✓
		WB	ATC_105-1_WB	110	113	3	0.3	✓	11	11	0	0.0	✓	3	1	-2	1.4	✓	124	125	1	0.1	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	573	570	-3	0.1	✓	66	61	-5	0.6	✓	18	16	-2	0.5	✓	657	647	-10	0.4	✓
		SB	ATC_105-2_SB	411	404	-7	0.3	✓	61	51	-10	1.3	✓	20	19	-1	0.2	✓	492	474	-18	0.8	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	133	140	7	0.6	✓	19	17	-2	0.5	✓	4	2	-2	1.2	✓	156	159	3	0.2	✓
		SB	ATC_202-1_SB	123	128	5	0.4	✓	23	21	-2	0.4	✓	4	3	-1	0.5	✓	150	152	2	0.2	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	596	584	-12	0.5	✓	80	60	-20	2.4	✓	16	16	0	0.0	✓	692	660	-32	1.2	✓
		WB	ATC_202-2_WB	443	429	-14	0.7	✓	73	53	-20	2.5	✓	18	18	0	0.0	✓	534	500	-34	1.5	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	499	510	11	0.5	✓	47	42	-5	0.7	✓	14	13	-1	0.3	✓	560	565	5	0.2	✓
		SB	ATC_202-3_SB	336	342	6	0.3	✓	44	39	-5	0.8	✓	16	16	0	0.0	✓	396	397	1	0.1	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	168	166	-2	0.2	✓	14	9	-5	1.5	✓	2	2	0	0.0	✓	184	177	-7	0.5	✓
		WB	ATC_204_WB	194	193	-1	0.1	✓	18	7	-11	3.1	✓	2	2	0	0.0	✓	214	202	-12	0.8	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	96	86	-10	1.0	✓	13	9	-4	1.2	✓	4	2	-2	1.2	✓	113	97	-16	1.6	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	179	169	-10	0.8	✓	18	18	0	0.0	✓	10	5	-5	1.8	✓	207	192	-15	1.1	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	189	182	-7	0.5	✓	20	13	-7	1.7	✓	6	2	-4	2.0	✓	215	197	-18	1.3	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	115	102	-13	1.2	✓	15	8	-7	2.1	✓	4	2	-2	1.2	✓	134	112	-22	2.0	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	116	102	-14	1.3	✓	14	4	-10	3.3	✓	4	3	-1	0.5	✓	134	109	-25	2.3	✓
		SB	SCC_A3489_SB	123	109	-14	1.3	✓	15	5	-10	3.2	✓	4	4	0	0.0	✓	142	118	-24	2.1	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	47	50	3	0.4	✓	6	1	-5	2.7	✓	2	0	-2	2.0	✓	55	51	-4	0.5	✓
		SB	SCC_A3527_SB	63	69	6	0.7	✓	7	1	-6	3.0	✓	2	0	-2	2.0	✓	72	70	-2	0.2	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	229	223	-6	0.4	✓	27	19	-8	1.7	✓	8	9	1	0.3	✓	264	251	-13	0.8	✓
		SB	SCC_M017_SB	175	170	-5	0.4	✓	21	10	-11	2.8	✓	6	5	-1	0.4	✓	202	185	-17	1.2	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	37	94	57	7.0	✓	4	7	3	1.3	✓	1	1	0	0.0	✓	42	102	60	7.1	✓
		SB	SCC_M055_SB	42	57	15	2.1	✓	5	7	2	0.8	✓	2	1	-1	0.8	✓	49	65	16	2.1	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	596	722	126	4.9	✓	71	70	-1	0.1	✓	21	28	7	1.4	✓	688	820	132	4.8	✓
		SB	SCC_Y151_SB	656	719	63	2.4	✓	78	125	47	4.7	✓	24	51	27	4.4	✓	758	895	137	4.8	✓
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	742	466	-276	11.2	✗	88	46	-42	5.1	✓	27	14	-13	2.9	✓	857	526	-331	12.6	✗
		WB	SCC_Y189_WB	783	573	-210	8.1	✗	93	69	-24	2.7	✓	28	20	-8	1.6	✓	904	662	-242	8.6	✗
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	298	289	-9	0.5	✓	32	17	-15	3.0	✓	3	4	1	0.5	✓	333	310	-23	1.3	✓
		EB	MCC_302_B_EB	317	306	-11	0.6	✓	29	22	-7	1.4	✓	3	4	1	0.5	✓	349	332	-17	0.9	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	180	181	1	0.1	✓	30	9	-21	4.8	✓	4	1	-3	1.9	✓	214	191	-23	1.6	✓
		SB	MCC_302_C_SB	178	176	-2	0.2	✓	19	6	-13	3.7	✓	4	1	-3	1.9	✓	201	183	-18	1.3	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	276	270	-6	0.4	✓	19	24	5	1.1	✓	1	5	4	2.3	✓	296	299	3	0.2	✓
		WB	MCC_302_D_WB	251	258	7	0.4	✓	27	22	-5	1.0	✓	1	5	4	2.3	✓	279	285	6	0.4	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	204	236	32	2.2	✓	30	17	-13	2.7	✓	1	1	0	0.0	✓	235	254	19	1.2	✓
		SB	MCC_303_A_SB	177	169	-8	0.6	✓	23	10	-13	3.2	✓	0	1	1	1.4	✓	200	180	-20	1.5	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	155	158	3	0.2	✓	19	12	-7	1.8	✓	0	3	3	2.4	✓	174	173	-1	0.1	✓
		WB	MCC_303_B_WB	146	154	8	0.7	✓	25	11	-14	3.3	✓	0	3	3	2.4	✓	171	168	-3	0.2	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	208	205	-3	0.2	✓	21	13	-8	1.9	✓	0	3	3	2.4	✓	229	221	-8	0.5	✓
		NB	MCC_303_C_NB	227	222	-5	0.3	✓	22	17	-5	1.1	✓	1	2	1	0.8	✓	250	241	-9	0.6	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	168	107	-61	5.2	✓	19	2	-17	5.2	✓	0	2	2	2.0	✓	187	111	-76	6.2	✓
		EB	MCC_303_D_EB	185	162	-23	1.7	✓	19	6	-13	3.7	✓	0	2	2	2.0	✓	204	170	-34	2.5	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	87	91	4	0.4	✓	17	4	-13	4.0	✓	0	2	2	2.0	✓	104	97	-7	0.7	✓
		NB	MCC_304_A_NB	101	73	-28	3.0	✓	21	0	-21	6.5	✓	2	2	0	0.0	✓	124	75	-49	4.9	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	202	221	19	1.3	✓	27	11	-16	3.7	✓	0	1	1	1.4	✓	229	233	4	0.3	✓
		EB	MCC_304_B_EB	169	180	11	0.8	✓	18	10	-8	2.1	✓	1	1	0	0.0	✓	188	191	3	0.2	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	100	83	-17	1.8	✓	21	2	-19	5.6	✓	2	1	-1	0.8	✓	123	86	-37	3.6	✓
		SB	MCC_304_C_SB	98	84	-14	1.5	✓	23	2	-21	5.9	✓	0	1	1	1.4	✓	121	87	-34	3.3	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	107	99	-8	0.8	✓	12	6	-6	2.0	✓	1	0	-1	1.4	✓	120	105	-15	1.4	✓
		WB	MCC_304_D_WB	128	158	30	2.5	✓	15	10	-5	1.4	✓	0	0	0	0.0	✓	143	168	25	2.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	696	584	-112	4.4	✓	22	12	-10	2.4	✓	18	14	-4	1.0	✓	736	610	-126	4.9	✓
30013377		SB	30013377	843	830	-13	0.4	✓	33	26	-7	1.3	✓	21	24	3	0.6	✓	897	880	-17	0.6	✓
30013396	A14 - J56 Through	EB	30013396	1833	1708	-125	3.0	✓	108	102	-6	0.6	✓	307	294	-13	0.7	✓	2248	2104	-144	3.1	✓
30013397	A14 - J56 EXIT	EB	30013397	456	395	-61	3.0	✓	23	19	-4	0.9	✓	13	21	8	1.9	✓	492	435	-57	2.6	✓
30013398	A14 - J57 Through	EB	30013398	1743	1674	-69	1.7	✓	89	115	26	2.6	✓	262	244	-18	1.1	✓	2094	2033	-61	1.3	✓
30013399	A14 - J57 EXIT	EB	30013399	406	380	-26	1.3	✓	47	19	-28	4.9	✓	133	73	-60	5.9	✓	586	472	-114	5.0	✓
30013402	A14 - J57 Through	WB	30013402	1502	1586	84	2.1	✓	76	108	32	3.3	✓	224	240	16	1.1	✓	1802	1934	132	3.1	✓
30013403	A14 - J57 EXIT	WB	30013403	172	186	14	1.0	✓	11	24	13	3.1	✓	47	20	-27	4.7	✓	230	230	0	0.0	✓
30013406	A14 - J55 Through	WB	30013406	1263	1227	-36	1.0	✓	51	29	-22	3.5	✓	185	165	-20	1.5	✓	1499	1421	-78	2.0	✓
30013407	A14 - J55 EXIT	WB	30013407	1058	1077	19	0.6	✓	47	71	24	3.1	✓	116	99	-17	1.6	✓	1221	1247	26	0.7	✓
30013408	A14 - J55 Through	EB	30013408	1163	1105	-58	1.7	✓	60	39	-21	3.0	✓	180	158	-22	1.7	✓	1403	1302	-101	2.7	✓
30013410	A14 - J53 Through	NB	30013410	1843	1408	-435	10.8	✗	90	70	-20	2.2	✓	279	241	-38	2.4	✓	2212	1719	-493	11.1	✗
30013411	A14 - J53 EXIT	NB	30013411	399	441	42	2.0	✓	20	7	-13	3.5	✓	15	2	-13	4.5	✓	434	450	16	0.8	✓
30013415	A14 - J51 EXIT	NB	30013415	803	674	-129	4.7	✓	44	56	12	1.7	✓	82	72	-10	1.1	✓	929	802	-127	4.3	✓
30013417	A14 - J51 EXIT	SB	30013417	248	196	-52	3.5	✓	18	36	18	3.5	✓	18	20	2	0.5	✓	284	252	-32	2.0	✓
30013418	A14 - between J51 and J50	NB	30013418	1683	1527	-156	3.9	✓	79	86	7	0.8	✓	239	219	-20	1.3	✓	2001	1832	-169	3.9	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	4	105	95%
LGV	114	0	102	99%
HGV	114	0	112	100%
Total Vehs	114	3	105	94%

Table A.13 – Traffic Flow Calibration – Screenlines – 6-7pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern Screenline																		
Northbound																		
SCC_A3527_NB	A3527 (B1117 Cookley Road, Horham)	NB	31	35	4	0.7	4	1	-3	1.9	1	0	-1	1.4	36	36	0	0.0
SCC_A3489_NB	A3489 (B1118 Queen Street, Stradbroke)	NB	78	65	-13	1.5	9	2	-7	3.0	2	2	0	0.0	89	69	-20	2.3
SCC_M017_NB	M017 (A144 Ilketshall)	NB	126	129	3	0.3	15	7	-8	2.4	4	6	2	0.9	145	142	-3	0.3
ATC_16_NB	A145 North of Blythburgh and B1123	NB	79	81	2	0.2	13	2	-11	4.0	2	3	1	0.6	94	86	-8	0.8
ATC_17_NB	A12 North of Blythburgh and A1095	NB	252	259	7	0.4	19	21	2	0.4	9	9	0	0.0	280	289	9	0.5
Southbound																		
SCC_A3527_SB	A3527 (B1117 Cookley Road, Horham)	SB	44	50	6	0.9	5	1	-4	2.3	1	0	-1	1.4	50	51	1	0.1
SCC_A3489_SB	A3489 (B1118 Queen Street, Stradbroke)	SB	93	79	-14	1.5	11	3	-8	3.0	3	3	0	0.0	107	85	-22	2.2
SCC_M017_SB	M017 (A144 Ilketshall)	SB	116	114	-2	0.2	14	5	-9	2.9	4	3	-1	0.5	134	122	-12	1.1
ATC_16_SB	A145 North of Blythburgh and B1123	SB	53	55	2	0.3	14	4	-10	3.3	3	6	3	1.4	70	65	-5	0.6
ATC_17_SB	A12 North of Blythburgh and A1095	SB	176	186	10	0.7	27	25	-2	0.4	8	8	0	0.0	211	219	8	0.5
Southern Screenline																		
Northbound																		
30013415	A14 - J51 EXIT	NB	624	544	-80	3.3	28	45	17	2.8	46	44	-2	0.3	698	633	-65	2.5
SCC_M055_NB	M055 (B1077 Swilland)	NB	17	63	46	7.3	2	5	3	1.6	1	1	0	0.0	20	69	49	7.3
ATC_82-1_NB	A12, North of Woodbridge and A12 / A1152 Rbt	NB	826	664	-162	5.9	45	78	33	4.2	48	19	-29	5.0	919	761	-158	5.5
ATC_81_EB	A1152 between Woodbridge and Tunstall	EB	233	245	12	0.8	14	10	-4	1.2	7	6	-1	0.4	254	261	7	0.4
Southbound																		
SCC_M055_SB	M055 (B1077 Swilland)	SB	29	45	16	2.6	3	5	2	1.0	1	1	0	0.0	33	51	18	2.8
ATC_82-1_SB	A12, North of Woodbridge and A12 / A1152 Rbt	SB	544	472	-72	3.2	58	51	-7	0.9	15	18	3	0.7	617	541	-76	3.2
ATC_81_WB	A1152 between Woodbridge and Tunstall	WB	153	177	24	1.9	19	13	-6	1.5	2	5	3	1.6	174	195	21	1.5
West of A12																		
Eastbound																		
ATC_202-1_SB	A1120 High Street at Yoxford, North of A12 in Yoxford	SB	92	99	7	0.7	13	9	-4	1.2	2	2	0	0.0	107	110	3	0.3
ATC_14_EB	B1078 West of Wickham Market	EB	91	90	-1	0.1	12	9	-3	0.9	4	2	-2	1.2	107	101	-6	0.6
ATC_103-4_EB	A1214 to Ipswich, W of the Martlesham Rbt	EB	665	729	64	2.4	70	76	6	0.7	16	18	2	0.5	751	823	72	2.6
ATC_102-1_EB	Road to Foxhall, W of the A12 Rbt	EB	274	253	-21	1.3	31	8	-23	5.2	5	3	-2	1.0	310	264	-46	2.7
ATC_101-6_EB	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	965	917	-48	1.6	80	77	-3	0.3	35	42	7	1.1	1080	1036	-44	1.4
Westbound																		
ATC_202-1_NB	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	95	99	4	0.4	14	10	-4	1.2	2	1	-1	0.8	111	110	-1	0.1
ATC_14_WB	B1078 West of Wickham Market	WB	60	61	1	0.1	8	10	2	0.7	1	2	1	0.8	69	73	4	0.5
ATC_103-4_WB	A1214 to Ipswich, W of the Martlesham Rbt	WB	872	969	97	3.2	80	87	7	0.8	12	11	-1	0.3	964	1067	103	3.2
ATC_102-1_WB	Road to Foxhall, W of the A12 Rbt	WB	360	299	-61	3.4	94	34	-60	7.5	16	5	-11	3.4	470	338	-132	6.6
ATC_101-5_WB	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	606	626	20	0.8	55	61	6	0.8	23	35	12	2.2	684	722	38	1.4

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
East of A12																		
Eastbound																		
ATC_105-1_EB	B1122, just South of the A12 (Road to Leiston)	EB	91	89	-2	0.2	6	3	-3	1.4	3	1	-2	1.4	100	93	-7	0.7
ATC_204_EB	B119 Rendham Road, E of the A12 in Saxmundham	EB	127	125	-2	0.2	5	7	2	0.8	2	2	0	0.0	134	134	0	0.0
ATC_82-2_EB	A1152 Wood Lane, East of the A12 Rbt	EB	543	585	42	1.8	29	53	24	3.7	6	30	24	5.7	578	668	90	3.6
ATC_103-1_EB	Road to Martlesham	EB	99	184	85	7.1	36	21	-15	2.8	2	0	-2	2.0	137	205	68	5.2
ATC_102-4_EB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	144	156	12	1.0	23	34	11	2.1	7	5	-2	0.8	174	195	21	1.5
ATC_101-2_EB	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	457	508	51	2.3	21	56	35	5.6	6	11	5	1.7	484	575	91	4.0
Westbound																		
ATC_105-1_WB	B1122, just South of the A12 (Road to Leiston)	WB	77	80	3	0.3	3	4	1	0.5	2	1	-1	0.8	82	85	3	0.3
ATC_204_WB	B119 Rendham Road, E of the A12 in Saxmundham	WB	103	108	5	0.5	11	4	-7	2.6	2	1	-1	0.8	116	113	-3	0.3
ATC_82-2_WB	A1152 Wood Lane, East of the A12 Rbt	WB	428	713	285	11.9	19	68	49	7.4	4	28	24	6.0	451	809	358	14.3
ATC_103-1_WB	Road to Martlesham	WB	123	345	222	14.5	49	18	-31	5.4	3	0	-3	2.4	175	363	188	11.5
ATC_102-4_WB	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	WB	123	140	17	1.5	27	43	16	2.7	5	8	3	1.2	155	191	36	2.7
ATC_101-3_WB	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	470	487	17	0.8	29	66	37	5.4	11	8	-3	1.0	510	561	51	2.2
Leiston Cordon																		
Inbound																		
ATC_4_SB	Lovers Lane	SB	28	33	5	0.9	1	0	-1	1.4	1	0	-1	1.4	30	33	3	0.5
MCC_303_B_EB	B1119 / B1112 / B1069 (B1119 West)	EB	117	120	3	0.3	13	9	-4	1.2	0	3	3	2.4	130	132	2	0.2
ATC_7_NB	B1069 Snape Road (south-west of Knodishall)	NB	157	163	6	0.5	11	15	4	1.1	3	2	-1	0.6	171	180	9	0.7
ATC_8_NB	B1122 Leiston Road (south-east of Aldringham)	NB	88	85	-3	0.3	8	2	-6	2.7	2	0	-2	2.0	98	87	-11	1.1
Outbound																		
ATC_4_NB	Lovers Lane	NB	37	39	2	0.3	4	0	-4	2.8	1	0	-1	1.4	42	39	-3	0.5
MCC_303_B_WB	B1119 / B1112 / B1069 (B1119 West)	WB	111	118	7	0.7	10	5	-5	1.8	0	2	2	2.0	121	125	4	0.4
ATC_7_SB	B1069 Snape Road (south-west of Knodishall)	SB	122	127	5	0.4	9	8	-1	0.3	3	2	-1	0.6	134	137	3	0.3
ATC_8_SB	B1122 Leiston Road (south-east of Aldringham)	SB	97	92	-5	0.5	6	2	-4	2.0	1	0	-1	1.4	104	94	-10	1.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Northern	Northbound	566	569	3	**0.1**	60	33	-27	**4.0**	18	20	2	**0.5**	644	622	-22	**0.9**
	Southbound	482	484	2	**0.1**	71	38	-33	**4.5**	19	20	1	**0.2**	572	542	-30	**1.3**
Northern	Northbound	1700	1516	-184	**4.6**	89	138	49	**4.6**	102	70	-32	**3.5**	1891	1724	-167	**3.9**
	Southbound	726	694	-32	**1.2**	80	69	-11	**1.3**	18	24	6	**1.3**	824	787	-37	**1.3**
West of A12	Eastbound	2087	2088	1	**0.0**	206	179	-27	**1.9**	62	67	5	**0.6**	2355	2334	-21	**0.4**
	Westbound	1993	2054	61	**1.4**	251	202	-49	**3.3**	54	54	0	**0.0**	2298	2310	12	**0.3**
East of A12	Eastbound	1461	1647	186	**4.7**	120	174	54	**4.5**	26	49	23	**3.8**	1607	1870	263	**6.3**
	Westbound	1324	1873	549	**13.7**	138	203	65	**5.0**	27	46	19	**3.1**	1489	2122	633	**14.9**
Leiston	Inbound	390	401	11	**0.6**	33	26	-7	**1.3**	6	5	-1	**0.4**	429	432	3	**0.1**
	Outbound	367	376	9	**0.5**	29	15	-14	**3.0**	5	4	-1	**0.5**	401	395	-6	**0.3**

Table A.14 – Traffic Flow Calibration – All Counts – 6-7pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
2	B1122 south of Onner's Lane (Theberton)	NB	ATC_2_NB	98	109	11	1.1	✓	14	4	-10	3.3	✓	2	0	-2	2.0	✓	114	113	-1	0.1	✓
		SB	ATC_2_SB	118	117	-1	0.1	✓	8	3	-5	2.1	✓	3	1	-2	1.4	✓	129	121	-8	0.7	✓
3	King Georges Avenue	EB	ATC_3_EB	75	82	7	0.8	✓	4	0	-4	2.8	✓	0	0	0	0.0	✓	79	82	3	0.3	✓
		WB	ATC_3_WB	92	86	-6	0.6	✓	13	0	-13	5.1	✓	1	0	-1	1.4	✓	106	86	-20	2.0	✓
4	Lovers Lane	NB	ATC_4_NB	37	39	2	0.3	✓	4	0	-4	2.8	✓	1	0	-1	1.4	✓	42	39	-3	0.5	✓
		SB	ATC_4_SB	28	33	5	0.9	✓	1	0	-1	1.4	✓	1	0	-1	1.4	✓	30	33	3	0.5	✓
7	B1069 Snape Road (south-west of Knodishall)	NB	ATC_7_NB	157	163	6	0.5	✓	11	15	4	1.1	✓	3	2	-1	0.6	✓	171	180	9	0.7	✓
		SB	ATC_7_SB	122	127	5	0.4	✓	9	8	-1	0.3	✓	3	2	-1	0.6	✓	134	137	3	0.3	✓
8	B1122 Leiston Road (south-east of Aldringham)	NB	ATC_8_NB	88	85	-3	0.3	✓	8	2	-6	2.7	✓	2	0	-2	2.0	✓	98	87	-11	1.1	✓
		SB	ATC_8_SB	97	92	-5	0.5	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	104	94	-10	1.0	✓
13	A12 East of Farnham	EB	ATC_13_EB	623	609	-14	0.6	✓	53	60	7	0.9	✓	17	19	2	0.5	✓	693	688	-5	0.2	✓
		WB	ATC_13_WB	409	407	-2	0.1	✓	31	38	7	1.2	✓	10	16	6	1.7	✓	450	461	11	0.5	✓
14	B1078 West of Wickham Market	EB	ATC_14_EB	91	90	-1	0.1	✓	12	9	-3	0.9	✓	4	2	-2	1.2	✓	107	101	-6	0.6	✓
		WB	ATC_14_WB	60	61	1	0.1	✓	8	10	2	0.7	✓	1	2	1	0.8	✓	69	73	4	0.5	✓
16	A145 North of Blythburgh and B1123	NB	ATC_16_NB	79	81	2	0.2	✓	13	2	-11	4.0	✓	2	3	1	0.6	✓	94	86	-8	0.8	✓
		SB	ATC_16_SB	53	55	2	0.3	✓	14	4	-10	3.3	✓	3	6	3	1.4	✓	70	65	-5	0.6	✓
17	A12 North of Blythburgh and A1095	NB	ATC_17_NB	252	259	7	0.4	✓	19	21	2	0.4	✓	9	9	0	0.0	✓	280	289	9	0.5	✓
		SB	ATC_17_SB	176	186	10	0.7	✓	27	25	-2	0.4	✓	8	8	0	0.0	✓	211	219	8	0.5	✓
81	A1152 between Woodbridge and Tunstall	EB	ATC_81_EB	233	245	12	0.8	✓	14	10	-4	1.2	✓	7	6	-1	0.4	✓	254	261	7	0.4	✓
		WB	ATC_81_WB	153	177	24	1.9	✓	19	13	-6	1.5	✓	2	5	3	1.6	✓	174	195	21	1.5	✓
82-1	A12, North of Woodbridge and A12 / A1152 Rbt	NB	ATC_82-1_NB	826	664	-162	5.9	✗	45	78	33	4.2	✓	48	19	-29	5.0	✓	919	761	-158	5.5	✗
		SB	ATC_82-1_SB	544	472	-72	3.2	✓	58	51	-7	0.9	✓	15	18	3	0.7	✓	617	541	-76	3.2	✓
82-2	A1152 Wood Lane, East of the A12 Rbt	EB	ATC_82-2_EB	543	585	42	1.8	✓	29	53	24	3.7	✓	6	30	24	5.7	✓	578	668	90	3.6	✓
		WB	ATC_82-2_WB	428	713	285	11.9	✗	19	68	49	7.4	✓	4	28	24	6.0	✓	451	809	358	14.3	✗
84	A143 North of Beccles to Diss	EB	ATC_84_EB	396	395	-1	0.1	✓	23	25	2	0.4	✓	14	4	-10	3.3	✓	433	424	-9	0.4	✓
		WB	ATC_84_WB	179	187	8	0.6	✓	30	33	3	0.5	✓	9	14	5	1.5	✓	218	234	16	1.1	✓
87	B1116 between Dennington and Framlington	EB	ATC_87_EB	82	86	4	0.4	✓	9	5	-4	1.5	✓	2	0	-2	2.0	✓	93	91	-2	0.2	✓
		WB	ATC_87_WB	49	57	8	1.1	✓	7	6	-1	0.4	✓	1	0	-1	1.4	✓	57	63	6	0.8	✓
101-2	A14 Eastbound On-Slip, E of A12 / A14 Rbt	EB	ATC_101-2_EB	457	508	51	2.3	✓	21	56	35	5.6	✓	6	11	5	1.7	✓	484	575	91	4.0	✓
101-3	A14 Westbound Off-Slip, E of the A12 / A14 Rbt	WB	ATC_101-3_WB	470	487	17	0.8	✓	29	66	37	5.4	✓	11	8	-3	1.0	✓	510	561	51	2.2	✓
101-4	A1156 to Ipswich & Levington, S of the A12 / A14 Rbt	NB	ATC_101-4_NB	406	397	-9	0.4	✓	19	5	-14	4.0	✓	4	5	1	0.5	✓	429	407	-22	1.1	✓
		SB	ATC_101-4_SB	385	351	-34	1.8	✓	30	5	-25	6.0	✓	6	4	-2	0.9	✓	421	360	-61	3.1	✓
101-5	A14 Westbound On-Slip, W of the A12 / A14 Rbt	WB	ATC_101-5_WB	606	626	20	0.8	✓	55	61	6	0.8	✓	23	35	12	2.2	✓	684	722	38	1.4	✓
101-6	A14 Eastbound Off-Slip, W of the A12 / A14 Rbt	EB	ATC_101-6_EB	965	917	-48	1.6	✓	80	77	-3	0.3	✓	35	42	7	1.1	✓	1080	1036	-44	1.4	✓
102-1	Road to Foxhall, W of the A12 Rbt	EB	ATC_102-1_EB	274	253	-21	1.3	✓	31	8	-23	5.2	✓	5	3	-2	1.0	✓	310	264	-46	2.7	✓
		WB	ATC_102-1_WB	360	299	-61	3.4	✓	94	34	-60	7.5	✓	16	5	-11	3.4	✓	470	338	-132	6.6	✗
102-2	A12 Southbound, N of the Foxhall Rbt	SB	ATC_102-2_SB	1002	1001	-1	0.0	✓	156	133	-23	1.9	✓	39	40	1	0.2	✓	1197	1174	-23	0.7	✓
102-3	A12 Northbound, N of the Foxhall Rbt	NB	ATC_102-3_NB	1368	1255	-113	3.1	✓	80	143	63	6.0	✓	50	45	-5	0.7	✓	1498	1443	-55	1.4	✓
102-4	Road to Waldringfield & Newbourne, E of the Foxhall Rbt	EB	ATC_102-4_EB	144	156	12	1.0	✓	23	34	11	2.1	✓	7	5	-2	0.8	✓	174	195	21	1.5	✓
		WB	ATC_102-4_WB	123	140	17	1.5	✓	27	43	16	2.7	✓	5	8	3	1.2	✓	155	191	36	2.7	✓
103-1	Road to Martlesham	EB	ATC_103-1_EB	99	184	85	7.1	✓	36	21	-15	2.8	✓	2	0	-2	2.0	✓	137	205	68	5.2	✓
		WB	ATC_103-1_WB	123	345	222	14.5	✗	49	18	-31	5.4	✓	3	0	-3	2.4	✓	175	363	188	11.5	✗
103-4	A1214 to Ipswich, W of the Martlesham Rbt	EB	ATC_103-4_EB	665	729	64	2.4	✓	70	76	6	0.7	✓	16	18	2	0.5	✓	751	823	72	2.6	✓
		WB	ATC_103-4_WB	872	969	97	3.2	✓	80	87	7	0.8	✓	12	11	-1	0.3	✓	964	1067	103	3.2	✓
103-5	A12 Northbound, S of the Martlesham Rbt	NB	ATC_103-5_NB	1355	1025	-330	9.6	✗	247	143	-104	7.4	✗	49	47	-2	0.3	✓	1651	1215	-436	11.5	✗
103-6	A12 Southbound, S of the Martlesham Rbt	SB	ATC_103-6_SB	951	862	-89	3.0	✓	146	126	-20	1.7	✓	46	41	-5	0.8	✓	1143	1029	-114	3.5	✓
103-7	Exit from the Park & Ride Car Park	EB	ATC_103-7_EB	17	17	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	17	17	0	0.0	✓
103-8	Entrance to the Park & Ride Car Park	WB	ATC_103-8_WB	4	4	0	0.0	✓	0	0	0	0.0	✓	0	0	0	0.0	✓	4	4	0	0.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
105-1	B1122, just South of the A12 (Road to Leiston)	EB	ATC_105-1_EB	91	89	-2	0.2	✓	6	3	-3	1.4	✓	3	1	-2	1.4	✓	100	93	-7	0.7	✓
		WB	ATC_105-1_WB	77	80	3	0.3	✓	3	4	1	0.5	✓	2	1	-1	0.8	✓	82	85	3	0.3	✓
105-2	A12, just East of the B1122 at Yoxford	NB	ATC_105-2_NB	416	414	-2	0.1	✓	31	31	0	0.0	✓	13	13	0	0.0	✓	460	458	-2	0.1	✓
		SB	ATC_105-2_SB	299	293	-6	0.3	✓	44	34	-10	1.6	✓	13	13	0	0.0	✓	356	340	-16	0.9	✓
202-1	A1120 High Street at Yoxford, North of A12 in Yoxford	NB	ATC_202-1_NB	95	99	4	0.4	✓	14	10	-4	1.2	✓	2	1	-1	0.8	✓	111	110	-1	0.1	✓
		SB	ATC_202-1_SB	92	99	7	0.7	✓	13	9	-4	1.2	✓	2	2	0	0.0	✓	107	110	3	0.3	✓
202-2	A12 between A1120 (Road to Yoxford) & B1122 (Road to Leiston)	EB	ATC_202-2_EB	437	430	-7	0.3	✓	43	30	-13	2.2	✓	15	13	-2	0.5	✓	495	473	-22	1.0	✓
		WB	ATC_202-2_WB	307	300	-7	0.4	✓	54	36	-18	2.7	✓	15	12	-3	0.8	✓	376	348	-28	1.5	✓
202-3	A12 , just South of A1120 in Yoxford	NB	ATC_202-3_NB	367	371	4	0.2	✓	22	23	1	0.2	✓	11	11	0	0.0	✓	400	405	5	0.2	✓
		SB	ATC_202-3_SB	234	241	7	0.5	✓	32	27	-5	0.9	✓	12	11	-1	0.3	✓	278	279	1	0.1	✓
204	B119 Rendham Road, E of the A12 in Saxmundham	EB	ATC_204_EB	127	125	-2	0.2	✓	5	7	2	0.8	✓	2	2	0	0.0	✓	134	134	0	0.0	✓
		WB	ATC_204_WB	103	108	5	0.5	✓	11	4	-7	2.6	✓	2	1	-1	0.8	✓	116	113	-3	0.3	✓
300-1	A12 Southbound Off-Slip	SB	ATC_300-1_SB	60	55	-5	0.7	✓	7	6	-1	0.4	✓	2	1	-1	0.8	✓	69	62	-7	0.9	✓
300-2	A12 Southbound On-Slip	SB	ATC_300-2_SB	129	124	-5	0.4	✓	9	12	3	0.9	✓	3	2	-1	0.6	✓	141	138	-3	0.3	✓
300-3	A12 Northbound Off-Slip	NB	ATC_300-3_NB	178	167	-11	0.8	✓	19	11	-8	2.1	✓	1	1	0	0.0	✓	198	179	-19	1.4	✓
300-4	A12 Northbound On-Slip	NB	ATC_300-4_NB	98	88	-10	1.0	✓	11	4	-7	2.6	✓	5	2	-3	1.6	✓	114	94	-20	2.0	✓
200001	A3489 (B1118 Queen Street, Stradbroke)	NB	SCC_A3489_NB	78	65	-13	1.5	✓	9	2	-7	3.0	✓	2	2	0	0.0	✓	89	69	-20	2.3	✓
		SB	SCC_A3489_SB	93	79	-14	1.5	✓	11	3	-8	3.0	✓	3	3	0	0.0	✓	107	85	-22	2.2	✓
200002	A3527 (B1117 Cookley Road, Horham)	NB	SCC_A3527_NB	31	35	4	0.7	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	36	36	0	0.0	✓
		SB	SCC_A3527_SB	44	50	6	0.9	✓	5	1	-4	2.3	✓	1	0	-1	1.4	✓	50	51	1	0.1	✓
200003	M017 (A144 Ilketshall)	NB	SCC_M017_NB	126	129	3	0.3	✓	15	7	-8	2.4	✓	4	6	2	0.9	✓	145	142	-3	0.3	✓
		SB	SCC_M017_SB	116	114	-2	0.2	✓	14	5	-9	2.9	✓	4	3	-1	0.5	✓	134	122	-12	1.1	✓
200004	M055 (B1077 Swilland)	NB	SCC_M055_NB	17	63	46	7.3	✓	2	5	3	1.6	✓	1	1	0	0.0	✓	20	69	49	7.3	✓
		SB	SCC_M055_SB	29	45	16	2.6	✓	3	5	2	1.0	✓	1	1	0	0.0	✓	33	51	18	2.8	✓
200005	Y151 (A1214 London Road, Ipswich)	NB	SCC_Y151_NB	564	763	199	7.7	✗	66	65	-1	0.1	✓	17	24	7	1.5	✓	647	852	205	7.5	✗
		SB	SCC_Y151_SB	495	737	242	9.8	✗	58	99	41	4.6	✓	15	41	26	4.9	✓	568	877	309	11.5	✗
200006	Y189 (A1214 Valley Road, Ipswich)	EB	SCC_Y189_EB	660	527	-133	5.5	✗	77	41	-36	4.7	✓	20	13	-7	1.7	✓	757	581	-176	6.8	✗
		WB	SCC_Y189_WB	640	673	33	1.3	✓	75	51	-24	3.0	✓	20	14	-6	1.5	✓	735	738	3	0.1	✓
302	A1094 / B1069 (A1094 East)	WB	MCC_302_B_WB	211	204	-7	0.5	✓	18	10	-8	2.1	✓	1	3	2	1.4	✓	230	217	-13	0.9	✓
		EB	MCC_302_B_EB	301	290	-11	0.6	✓	24	21	-3	0.6	✓	1	3	2	1.4	✓	326	314	-12	0.7	✓
	A1094 / B1069 (B1069 South)	NB	MCC_302_C_NB	138	137	-1	0.1	✓	11	2	-9	3.5	✓	0	0	0	0.0	✓	149	139	-10	0.8	✓
		SB	MCC_302_C_SB	131	130	-1	0.1	✓	9	3	-6	2.4	✓	1	1	0	0.0	✓	141	134	-7	0.6	✓
	A1094 / B1069 (A1094 West)	EB	MCC_302_D_EB	264	260	-4	0.2	✓	20	22	2	0.4	✓	1	4	3	1.9	✓	285	286	1	0.1	✓
		WB	MCC_302_D_WB	176	181	5	0.4	✓	15	11	-4	1.1	✓	0	3	3	2.4	✓	191	195	4	0.3	✓
303	B1119 / B1112 / B1069 (B1069 South)	NB	MCC_303_A_NB	180	207	27	1.9	✓	13	6	-7	2.3	✓	1	1	0	0.0	✓	194	214	20	1.4	✓
		SB	MCC_303_A_SB	159	150	-9	0.7	✓	20	5	-15	4.2	✓	4	1	-3	1.9	✓	183	156	-27	2.1	✓
	B1119 / B1112 / B1069 (B1119 West)	EB	MCC_303_B_EB	117	120	3	0.3	✓	13	9	-4	1.2	✓	0	3	3	2.4	✓	130	132	2	0.2	✓
		WB	MCC_303_B_WB	111	118	7	0.7	✓	10	5	-5	1.8	✓	0	2	2	2.0	✓	121	125	4	0.4	✓
	B1119 / B1112 / B1069 (B1112 North)	SB	MCC_303_C_SB	163	162	-1	0.1	✓	18	6	-12	3.5	✓	4	2	-2	1.2	✓	185	170	-15	1.1	✓
		NB	MCC_303_C_NB	205	199	-6	0.4	✓	18	10	-8	2.1	✓	1	1	0	0.0	✓	224	210	-14	1.0	✓
	B1119 / B1112 / B1069 (B1112 East)	WB	MCC_303_D_WB	140	82	-58	5.5	✓	15	1	-14	4.9	✓	0	1	1	1.4	✓	155	84	-71	6.5	✓
		EB	MCC_303_D_EB	125	106	-19	1.8	✓	11	3	-8	3.0	✓	0	2	2	2.0	✓	136	111	-25	2.2	✓
304	B1122 / Sizewell Road (B1122 North)	SB	MCC_304_A_SB	90	86	-4	0.4	✓	8	1	-7	3.3	✓	0	2	2	2.0	✓	98	89	-9	0.9	✓
		NB	MCC_304_A_NB	103	63	-40	4.4	✓	13	0	-13	5.1	✓	0	1	1	1.4	✓	116	64	-52	5.5	✓
	B1122 / Sizewell Road (Sizewell Road East)	WB	MCC_304_B_WB	166	182	16	1.2	✓	23	6	-17	4.5	✓	0	1	1	1.4	✓	189	189	0	0.0	✓
		EB	MCC_304_B_EB	150	163	13	1.0	✓	14	6	-8	2.5	✓	0	1	1	1.4	✓	164	170	6	0.5	✓
	B1122 / Sizewell Road (B1122 South)	NB	MCC_304_C_NB	92	74	-18	2.0	✓	10	1	-9	3.8	✓	0	0	0	0.0	✓	102	75	-27	2.9	✓
		SB	MCC_304_C_SB	87	71	-16	1.8	✓	9	1	-8	3.6	✓	0	1	1	1.4	✓	96	73	-23	2.5	✓
	B1122 / Sizewell Road (Cross Street West)	EB	MCC_304_D_EB	86	81	-5	0.5	✓	9	5	-4	1.5	✓	0	0	0	0.0	✓	95	86	-9	0.9	✓
		WB	MCC_304_D_WB	94	125	31	3.0	✓	14	5	-9	2.9	✓	0	0	0	0.0	✓	108	130	22	2.0	✓

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
30013376	A12 - between A1117 and B1375	NB	30013376	565	500	-65	2.8	✓	12	7	-5	1.6	✓	13	11	-2	0.6	✓	590	518	-72	3.1	✓
30013377		SB	30013377	555	552	-3	0.1	✓	19	16	-3	0.7	✓	11	16	5	1.4	✓	585	584	-1	0.0	✓
30013396	A14 - J56 Through	EB	30013396	1397	1325	-72	2.0	✓	64	75	11	1.3	✓	257	233	-24	1.5	✓	1718	1633	-85	2.1	✓
30013397	A14 - J56 EXIT	EB	30013397	359	249	-110	6.3	✗	13	11	-2	0.6	✓	9	16	7	2.0	✓	381	276	-105	5.8	✗
30013398	A14 - J57 Through	EB	30013398	1270	1221	-49	1.4	✓	47	79	32	4.0	✓	214	212	-2	0.1	✓	1531	1512	-19	0.5	✓
30013399	A14 - J57 EXIT	EB	30013399	539	522	-17	0.7	✓	31	18	-13	2.6	✓	60	29	-31	4.6	✓	630	569	-61	2.5	✓
30013402	A14 - J57 Through	WB	30013402	982	1063	81	2.5	✓	34	67	33	4.6	✓	211	210	-1	0.1	✓	1227	1340	113	3.2	✓
30013403	A14 - J57 EXIT	WB	30013403	226	234	8	0.5	✓	8	13	5	1.5	✓	26	4	-22	5.7	✓	260	251	-9	0.6	✓
30013406	A14 - J55 Through	WB	30013406	731	719	-12	0.4	✓	26	16	-10	2.2	✓	167	150	-17	1.4	✓	924	885	-39	1.3	✓
30013407	A14 - J55 EXIT	WB	30013407	901	866	-35	1.2	✓	28	50	22	3.5	✓	87	74	-13	1.4	✓	1016	990	-26	0.8	✓
30013408	A14 - J55 Through	EB	30013408	740	691	-49	1.8	✓	31	23	-8	1.5	✓	156	135	-21	1.7	✓	927	849	-78	2.6	✓
30013410	A14 - J53 Through	NB	30013410	1195	1008	-187	5.6	✗	50	49	-1	0.1	✓	227	205	-22	1.5	✓	1472	1262	-210	5.7	✓
30013411	A14 - J53 EXIT	NB	30013411	285	123	-162	11.3	✗	12	5	-7	2.4	✓	9	2	-7	3.0	✓	306	130	-176	11.9	✗
30013415	A14 - J51 EXIT	NB	30013415	624	544	-80	3.3	✓	28	45	17	2.8	✓	46	44	-2	0.3	✓	698	633	-65	2.5	✓
30013417	A14 - J51 EXIT	SB	30013417	164	131	-33	2.7	✓	9	26	17	4.1	✓	11	13	2	0.6	✓	184	170	-14	1.1	✓
30013418	A14 - between J51 and J50	NB	30013418	1164	1124	-40	1.2	✓	44	58	14	2.0	✓	205	191	-14	1.0	✓	1413	1373	-40	1.1	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	114	3	101	91%
LGV	114	0	103	99%
HGV	114	0	110	100%
Total Vehs	114	5	99	91%

Table A.15 – Traffic Flow Validation – Screenlines – 6-7am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Site	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	38	41	3	0.5	6	2	-4	2.0	1	0	-1	1.4	45	43	-2	0.3
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	99	192	93	7.7	25	42	17	2.9	24	24	0	0.0	148	258	110	7.7
ATC_10_EB	A1120 West of Peasenhall	EB	23	21	-2	0.4	4	3	-1	0.5	5	4	-1	0.5	32	28	-4	0.7
ATC_12_EB	A12 West of Marlesford	EB	215	170	-45	3.2	34	35	1	0.2	32	24	-8	1.5	281	229	-52	3.3
ATC_85_EB	B1069 between Tunstall and Snape	EB	28	31	3	0.6	4	5	1	0.5	1	1	0	0.0	33	37	4	0.7
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	18	29	11	2.3	4	1	-3	1.9	1	0	-1	1.4	23	30	7	1.4
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	210	101	-109	8.7	40	26	-14	2.4	22	25	3	0.6	272	152	-120	8.2
ATC_10_WB	A1120 West of Peasenhall	WB	23	32	9	1.7	6	7	1	0.4	3	3	0	0.0	32	42	10	1.6
ATC_12_WB	A12 West of Marlesford	WB	251	254	3	0.2	45	50	5	0.7	26	22	-4	0.8	322	326	4	0.2
ATC_85_WB	B1069 between Tunstall and Snape	WB	25	43	18	3.1	5	5	0	0.0	2	2	0	0.0	32	50	18	2.8

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	403	455	52	**2.5**	73	87	14	**1.6**	63	53	-10	**1.3**	539	595	56	**2.4**
	Outbound	527	459	-68	**3.1**	100	89	-11	**1.1**	54	52	-2	**0.3**	681	600	-81	**3.2**

Table A.16 – Traffic Flow Validation – All Counts – 6-7am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	210	101	-109	8.7	✗	40	26	-14	2.4	✓	22	25	3	0.6	✓	272	152	-120	8.2	✗
		SB	ATC_1_SB	99	192	93	7.7	✓	25	42	17	2.9	✓	24	24	0	0.0	✓	148	258	110	7.7	✗
9	B1125 South of Westleton	NB	ATC_9_NB	18	29	11	2.3	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	23	30	7	1.4	✓
		SB	ATC_9_SB	38	41	3	0.5	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	45	43	-2	0.3	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	23	21	-2	0.4	✓	4	3	-1	0.5	✓	5	4	-1	0.5	✓	32	28	-4	0.7	✓
		WB	ATC_10_WB	23	32	9	1.7	✓	6	7	1	0.4	✓	3	3	0	0.0	✓	32	42	10	1.6	✓
12	A12 West of Marlesford	EB	ATC_12_EB	215	171	-44	3.2	✓	34	35	1	0.2	✓	32	24	-8	1.5	✓	281	230	-51	3.2	✓
		WB	ATC_12_WB	251	254	3	0.2	✓	45	50	5	0.7	✓	26	22	-4	0.8	✓	322	326	4	0.2	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	457	513	56	2.5	✓	149	111	-38	3.3	✓	41	45	4	0.6	✓	647	669	22	0.9	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	347	315	-32	1.8	✓	119	87	-32	3.2	✓	54	48	-6	0.8	✓	520	450	-70	3.2	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	28	31	3	0.6	✓	4	5	1	0.5	✓	1	1	0	0.0	✓	33	37	4	0.7	✓
		WB	ATC_85_WB	25	43	18	3.1	✓	5	5	0	0.0	✓	2	2	0	0.0	✓	32	50	18	2.8	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	34	37	3	0.5	✓	4	4	0	0.0	✓	2	3	1	0.6	✓	40	44	4	0.6	✓
		SB	ATC_90_SB	37	44	7	1.1	✓	6	4	-2	0.9	✓	3	3	0	0.0	✓	46	51	5	0.7	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	20	19	-1	0.2	✓	4	1	-3	1.9	✓	1	0	-1	1.4	✓	25	20	-5	1.1	✓
		SB	ATC_91_SB	35	44	9	1.4	✓	8	2	-6	2.7	✓	1	0	-1	1.4	✓	44	46	2	0.3	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	75%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Table A.17 – Traffic Flow Validation – Screenlines – 7-8am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	116	136	20	1.8	16	9	-7	2.0	2	0	-2	2.0	134	145	11	0.9
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	253	417	164	9.0	62	89	27	3.1	36	40	4	0.6	351	546	195	9.2
ATC_10_EB	A1120 West of Peasenhall	EB	79	77	-2	0.2	28	13	-15	3.3	10	8	-2	0.7	117	98	-19	1.8
ATC_12_EB	A12 West of Marlesford	EB	478	440	-38	1.8	90	100	10	1.0	45	45	0	0.0	613	585	-28	1.1
ATC_85_EB	B1069 between Tunstall and Snape	EB	96	95	-1	0.1	14	15	1	0.3	2	2	0	0.0	112	112	0	0.0
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	42	64	22	3.0	9	4	-5	2.0	2	1	-1	0.8	53	69	16	2.0
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	441	265	-176	9.4	77	69	-8	0.9	36	40	4	0.6	554	374	-180	8.4
ATC_10_WB	A1120 West of Peasenhall	WB	72	87	15	1.7	18	15	-3	0.7	7	6	-1	0.4	97	108	11	1.1
ATC_12_WB	A12 West of Marlesford	WB	552	606	54	2.2	68	76	8	0.9	29	30	1	0.2	649	712	63	2.4
ATC_85_WB	B1069 between Tunstall and Snape	WB	99	133	34	3.2	18	28	10	2.1	5	4	-1	0.5	122	165	43	3.6

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1022	1165	143	**4.3**	210	226	16	**1.1**	95	95	0	**0.0**	1327	1486	159	**4.2**
	Outbound	1206	1155	-51	**1.5**	190	192	2	**0.1**	79	81	2	**0.2**	1475	1428	-47	**1.2**

Table A.18 – Traffic Flow Validation – All Counts – 7-8am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	441	265	-176	9.4	✗	77	69	-8	0.9	✓	36	40	4	0.6	✓	554	374	-180	8.4	✗
		SB	ATC_1_SB	253	417	164	9.0	✗	62	89	27	3.1	✓	36	40	4	0.6	✓	351	546	195	9.2	✗
9	B1125 South of Westleton	NB	ATC_9_NB	42	64	22	3.0	✓	9	4	-5	2.0	✓	2	1	-1	0.8	✓	53	69	16	2.0	✓
		SB	ATC_9_SB	116	136	20	1.8	✓	16	9	-7	2.0	✓	2	0	-2	2.0	✓	134	145	11	0.9	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	79	77	-2	0.2	✓	28	13	-15	3.3	✓	10	8	-2	0.7	✓	117	98	-19	1.8	✓
		WB	ATC_10_WB	72	87	15	1.7	✓	18	15	-3	0.7	✓	7	6	-1	0.4	✓	97	108	11	1.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	478	440	-38	1.8	✓	90	100	10	1.0	✓	45	45	0	0.0	✓	613	585	-28	1.1	✓
		WB	ATC_12_WB	552	606	54	2.2	✓	68	76	8	0.9	✓	29	30	1	0.2	✓	649	712	63	2.4	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1147	1318	171	4.9	✓	294	210	-84	5.3	✓	65	75	10	1.2	✓	1506	1603	97	2.5	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	818	830	12	0.4	✓	284	212	-72	4.6	✓	121	98	-23	2.2	✓	1223	1140	-83	2.4	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	96	95	-1	0.1	✓	14	15	1	0.3	✓	2	2	0	0.0	✓	112	112	0	0.0	✓
		WB	ATC_85_WB	99	133	34	3.2	✓	18	28	10	2.1	✓	5	4	-1	0.5	✓	122	165	43	3.6	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	76	91	15	1.6	✓	15	10	-5	1.4	✓	4	5	1	0.5	✓	95	106	11	1.1	✓
		SB	ATC_90_SB	102	95	-7	0.7	✓	16	6	-10	3.0	✓	7	5	-2	0.8	✓	125	106	-19	1.8	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	33	42	9	1.5	✓	5	3	-2	1.0	✓	3	0	-3	2.4	✓	41	45	4	0.6	✓
		SB	ATC_91_SB	106	139	33	3.0	✓	15	9	-6	1.7	✓	5	0	-5	3.2	✓	126	148	22	1.9	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Table A.19 – Traffic Flow Validation – Screenlines – 8-9am

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	80	100	20	2.1	14	10	-4	1.2	4	0	-4	2.8	98	110	12	1.2
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	320	423	103	5.3	70	84	14	1.6	43	49	6	0.9	433	556	123	5.5
ATC_10_EB	A1120 West of Peasenhall	EB	95	79	-16	1.7	21	11	-10	2.5	12	9	-3	0.9	128	99	-29	2.7
ATC_12_EB	A12 West of Marlesford	EB	480	483	3	0.1	91	106	15	1.5	45	47	2	0.3	616	636	20	0.8
ATC_85_EB	B1069 between Tunstall and Snape	EB	85	115	30	3.0	9	24	15	3.7	5	3	-2	1.0	99	142	43	3.9
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	59	86	27	3.2	12	5	-7	2.4	4	1	-3	1.9	75	92	17	1.9
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	402	313	-89	4.7	72	75	3	0.3	44	48	4	0.6	518	436	-82	3.8
ATC_10_WB	A1120 West of Peasenhall	WB	87	107	20	2.0	24	18	-6	1.3	10	8	-2	0.7	121	133	12	1.1
ATC_12_WB	A12 West of Marlesford	WB	680	689	9	0.3	71	67	-4	0.5	40	40	0	0.0	791	796	5	0.2
ATC_85_WB	B1069 between Tunstall and Snape	WB	64	156	92	8.8	16	30	14	2.9	5	4	-1	0.5	85	190	105	9.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1060	1200	140	4.2	205	235	30	2.0	109	108	-1	0.1	1374	1543	169	4.4
	Outbound	1292	1351	59	1.6	195	195	0	0.0	103	101	-2	0.2	1590	1647	57	1.4

Table A.20 – Traffic Flow Validation – All Counts – 8-9am

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	402	313	-89	4.7	✓	72	75	3	0.3	✓	44	48	4	0.6	✓	518	436	-82	3.8	✓
		SB	ATC_1_SB	320	423	103	5.3	✗	70	84	14	1.6	✓	43	49	6	0.9	✓	433	556	123	5.5	✗
9	B1125 South of Westleton	NB	ATC_9_NB	59	86	27	3.2	✓	12	5	-7	2.4	✓	4	1	-3	1.9	✓	75	92	17	1.9	✓
		SB	ATC_9_SB	80	100	20	2.1	✓	14	10	-4	1.2	✓	4	0	-4	2.8	✓	98	110	12	1.2	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	95	79	-16	1.7	✓	21	11	-10	2.5	✓	12	9	-3	0.9	✓	128	99	-29	2.7	✓
		WB	ATC_10_WB	87	107	20	2.0	✓	24	18	-6	1.3	✓	10	8	-2	0.7	✓	121	133	12	1.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	480	483	3	0.1	✓	91	106	15	1.5	✓	45	47	2	0.3	✓	616	636	20	0.8	✓
		WB	ATC_12_WB	680	689	9	0.3	✓	71	67	-4	0.5	✓	40	40	0	0.0	✓	791	796	5	0.2	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1426	1457	31	0.8	✓	147	195	48	3.7	✓	96	92	-4	0.4	✓	1669	1744	75	1.8	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	843	954	111	3.7	✓	255	204	-51	3.4	✓	127	116	-11	1.0	✓	1225	1274	49	1.4	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	85	115	30	3.0	✓	9	24	15	3.7	✓	5	3	-2	1.0	✓	99	142	43	3.9	✓
		WB	ATC_85_WB	64	156	92	8.8	✓	16	30	14	2.9	✓	5	4	-1	0.5	✓	85	190	105	9.0	✗
90	B1121 South West of Saxmundham	NB	ATC_90_NB	176	116	-60	5.0	✓	26	9	-17	4.1	✓	10	7	-3	1.0	✓	212	132	-80	6.1	✓
		SB	ATC_90_SB	155	124	-31	2.6	✓	14	5	-9	2.9	✓	8	6	-2	0.8	✓	177	135	-42	3.4	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	45	54	9	1.3	✓	9	3	-6	2.4	✓	2	0	-2	2.0	✓	56	57	1	0.1	✓
		SB	ATC_91_SB	66	92	26	2.9	✓	17	9	-8	2.2	✓	4	0	-4	2.8	✓	87	101	14	1.4	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	3	75%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	3	75%

Table A.21 – Traffic Flow Validation – Screenlines – 3-4pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	86	90	4	0.4	13	6	-7	2.3	6	1	-5	2.7	105	97	-8	0.8
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	497	367	-130	6.3	72	69	-3	0.4	42	37	-5	0.8	611	473	-138	5.9
ATC_10_EB	A1120 West of Peasenhall	EB	103	105	2	0.2	17	5	-12	3.6	9	5	-4	1.5	129	115	-14	1.3
ATC_12_EB	A12 West of Marlesford	EB	751	721	-30	1.1	78	77	-1	0.1	35	36	1	0.2	864	834	-30	1.0
ATC_85_EB	B1069 between Tunstall and Snape	EB	108	166	58	5.0	9	7	-2	0.7	4	2	-2	1.2	121	175	54	4.4
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	100	94	-6	0.6	15	5	-10	3.2	5	0	-5	3.2	120	99	-21	2.0
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	379	491	112	5.4	60	71	11	1.4	28	35	7	1.2	467	597	130	5.6
ATC_10_WB	A1120 West of Peasenhall	WB	103	86	-17	1.7	22	12	-10	2.4	11	4	-7	2.6	136	102	-34	3.1
ATC_12_WB	A12 West of Marlesford	WB	584	614	30	1.2	66	86	20	2.3	41	42	1	0.2	691	742	51	1.9
ATC_85_WB	B1069 between Tunstall and Snape	WB	101	147	46	4.1	15	9	-6	1.7	6	2	-4	2.0	122	158	36	3.0

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1545	1449	-96	2.5	189	164	-25	1.9	96	81	-15	1.6	1830	1694	-136	3.2
	Outbound	1267	1432	165	4.5	178	183	5	0.4	91	83	-8	0.9	1536	1698	162	4.0

Table A.22 – Traffic Flow Validation – All Counts – 3-4pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	NB	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	379	491	112	5.4	✗	60	71	11	1.4	✓	28	35	7	1.2	✓	467	597	130	5.6	✗
		SB	ATC_1_SB	497	367	-130	6.3	✗	72	69	-3	0.4	✓	42	37	-5	0.8	✓	611	473	-138	5.9	✗
9	B1125 South of Westleton	NB	ATC_9_NB	100	94	-6	0.6	✓	15	5	-10	3.2	✓	5	0	-5	3.2	✓	120	99	-21	2.0	✓
		SB	ATC_9_SB	86	90	4	0.4	✓	13	6	-7	2.3	✓	6	1	-5	2.7	✓	105	97	-8	0.8	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	103	105	2	0.2	✓	17	5	-12	3.6	✓	9	5	-4	1.5	✓	129	115	-14	1.3	✓
		WB	ATC_10_WB	103	86	-17	1.7	✓	22	12	-10	2.4	✓	11	4	-7	2.6	✓	136	102	-34	3.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	751	721	-30	1.1	✓	78	77	-1	0.1	✓	35	36	1	0.2	✓	864	834	-30	1.0	✓
		WB	ATC_12_WB	584	614	30	1.2	✓	66	86	20	2.3	✓	41	42	1	0.2	✓	691	742	51	1.9	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1174	1275	101	2.9	✓	275	215	-60	3.8	✓	95	98	3	0.3	✓	1544	1588	44	1.1	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1312	1330	18	0.5	✓	188	158	-30	2.3	✓	96	82	-14	1.5	✓	1596	1570	-26	0.7	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	108	166	58	5.0	✓	9	7	-2	0.7	✓	4	2	-2	1.2	✓	121	175	54	4.4	✓
		WB	ATC_85_WB	101	147	46	4.1	✓	15	9	-6	1.7	✓	6	2	-4	2.0	✓	122	158	36	3.0	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	226	121	-105	8.0	✗	17	10	-7	1.9	✓	7	5	-2	0.8	✓	250	136	-114	8.2	✗
		SB	ATC_90_SB	216	121	-95	7.3	✓	28	7	-21	5.0	✓	10	6	-4	1.4	✓	254	134	-120	8.6	✗
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	90	82	-8	0.9	✓	9	4	-5	2.0	✓	3	0	-3	2.4	✓	102	86	-16	1.7	✓
		SB	ATC_91_SB	40	59	19	2.7	✓	6	5	-1	0.4	✓	4	0	-4	2.8	✓	50	64	14	1.9	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	%GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Table A.23 – Traffic Flow Validation – Screenlines – 4-5pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	61	78	17	2.0	12	5	-7	2.4	3	1	-2	1.4	76	84	8	0.9
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	597	415	-182	8.1	79	69	-10	1.2	34	24	-10	1.9	710	508	-202	8.2
ATC_10_EB	A1120 West of Peasenhall	EB	120	128	8	0.7	20	19	-1	0.2	7	8	1	0.4	147	155	8	0.7
ATC_12_EB	A12 West of Marlesford	EB	828	773	-55	1.9	67	76	9	1.1	31	30	-1	0.2	926	879	-47	1.6
ATC_85_EB	B1069 between Tunstall and Snape	EB	116	187	71	5.8	18	24	6	1.3	6	2	-4	2.0	140	213	73	5.5
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	133	128	-5	0.4	21	4	-17	4.8	6	1	-5	2.7	160	133	-27	2.2
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	420	609	189	8.3	60	81	21	2.5	24	34	10	1.9	504	724	220	8.9
ATC_10_WB	A1120 West of Peasenhall	WB	112	95	-17	1.7	30	20	-10	2.0	6	4	-2	0.9	148	119	-29	2.5
ATC_12_WB	A12 West of Marlesford	WB	701	697	-4	0.2	85	90	5	0.5	37	38	1	0.2	823	825	2	0.1
ATC_85_WB	B1069 between Tunstall and Snape	WB	127	178	51	4.1	20	14	-6	1.5	5	2	-3	1.6	152	194	42	3.2

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1722	1581	-141	**3.5**	196	193	-3	**0.2**	81	65	-16	**1.9**	1999	1839	-160	**3.7**
	Outbound	1493	1707	214	**5.4**	216	209	-7	**0.5**	78	79	1	**0.1**	1787	1995	208	**4.8**

Table A.24 – Traffic Flow Validation – All Counts – 4-5pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	420	609	189	8.3	✗	60	81	21	2.5	✓	24	34	10	1.9	✓	504	724	220	8.9	✗
		SB	ATC_1_SB	597	415	-182	8.1	✗	79	69	-10	1.2	✓	34	24	-10	1.9	✓	710	508	-202	8.2	✗
9	B1125 South of Westleton	NB	ATC_9_NB	133	128	-5	0.4	✓	21	4	-17	4.8	✓	6	1	-5	2.7	✓	160	133	-27	2.2	✓
		SB	ATC_9_SB	61	78	17	2.0	✓	12	5	-7	2.4	✓	3	1	-2	1.4	✓	76	84	8	0.9	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	120	128	8	0.7	✓	20	19	-1	0.2	✓	7	8	1	0.4	✓	147	155	8	0.7	✓
		WB	ATC_10_WB	112	95	-17	1.7	✓	30	20	-10	2.0	✓	6	4	-2	0.9	✓	148	119	-29	2.5	✓
12	A12 West of Marlesford	EB	ATC_12_EB	828	773	-55	1.9	✓	67	76	9	1.1	✓	31	30	-1	0.2	✓	926	879	-47	1.6	✓
		WB	ATC_12_WB	701	697	-4	0.2	✓	85	90	5	0.5	✓	37	38	1	0.2	✓	823	825	2	0.1	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1213	1388	175	4.9	✓	323	209	-114	7.0	✗	79	107	28	2.9	✓	1615	1704	89	2.2	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1390	1307	-83	2.3	✓	253	152	-101	7.1	✗	100	72	-28	3.0	✓	1743	1531	-212	5.2	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	116	187	71	5.8	✓	18	24	6	1.3	✓	6	2	-4	2.0	✓	140	213	73	5.5	✓
		WB	ATC_85_WB	127	178	51	4.1	✓	20	14	-6	1.5	✓	5	2	-3	1.6	✓	152	194	42	3.2	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	236	123	-113	8.4	✗	29	13	-16	3.5	✓	9	5	-4	1.5	✓	274	141	-133	9.2	✗
		SB	ATC_90_SB	217	161	-56	4.1	✓	20	9	-11	2.9	✓	6	7	1	0.4	✓	243	177	-66	4.6	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	103	129	26	2.4	✓	11	3	-8	3.0	✓	3	0	-3	2.4	✓	117	132	15	1.3	✓
		SB	ATC_91_SB	39	55	16	2.3	✓	6	3	-3	1.4	✓	0	0	0	0.0	✓	45	58	13	1.8	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Table A.25 – Traffic Flow Validation – Screenlines – 5-6pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	60	79	19	2.3	7	2	-5	2.4	3	0	-3	2.4	70	81	11	1.3
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	548	360	-188	8.8	71	51	-20	2.6	20	19	-1	0.2	639	430	-209	9.0
ATC_10_EB	A1120 West of Peasenhall	EB	115	132	17	1.5	19	17	-2	0.5	6	3	-3	1.4	140	152	12	1.0
ATC_12_EB	A12 West of Marlesford	EB	784	755	-29	1.0	60	71	11	1.4	25	22	-3	0.6	869	848	-21	0.7
ATC_85_EB	B1069 between Tunstall and Snape	EB	124	192	68	5.4	12	9	-3	0.9	5	1	-4	2.3	141	202	61	4.7
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	85	84	-1	0.1	14	2	-12	4.2	1	0	-1	1.4	100	86	-14	1.5
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	392	558	166	7.6	50	61	11	1.5	18	16	-2	0.5	460	635	175	7.5
ATC_10_WB	A1120 West of Peasenhall	WB	97	93	-4	0.4	18	13	-5	1.3	5	2	-3	1.6	120	108	-12	1.1
ATC_12_WB	A12 West of Marlesford	WB	553	582	29	1.2	49	56	7	1.0	19	25	6	1.3	621	663	42	1.7
ATC_85_WB	B1069 between Tunstall and Snape	WB	123	162	39	3.3	16	7	-9	2.7	7	1	-6	3.0	146	170	24	1.9

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1631	1518	-113	**2.8**	169	150	-19	**1.5**	59	45	-14	**1.9**	1859	1713	-146	**3.5**
	Outbound	1250	1479	229	**6.2**	147	139	-8	**0.7**	50	44	-6	**0.9**	1447	1662	215	**5.5**

Table A.26 – Traffic Flow Validation – All Counts – 5-6pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	392	558	166	7.6	✗	50	61	11	1.5	✓	18	16	-2	0.5	✓	460	635	175	7.5	✗
		SB	ATC_1_SB	548	360	-188	8.8	✗	71	51	-20	2.6	✓	20	19	-1	0.2	✓	639	430	-209	9.0	✗
9	B1125 South of Westleton	NB	ATC_9_NB	85	84	-1	0.1	✓	14	2	-12	4.2	✓	1	0	-1	1.4	✓	100	86	-14	1.5	✓
		SB	ATC_9_SB	60	79	19	2.3	✓	7	2	-5	2.4	✓	3	0	-3	2.4	✓	70	81	11	1.3	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	115	132	17	1.5	✓	19	17	-2	0.5	✓	6	3	-3	1.4	✓	140	152	12	1.0	✓
		WB	ATC_10_WB	97	93	-4	0.4	✓	18	13	-5	1.3	✓	5	2	-3	1.6	✓	120	108	-12	1.1	✓
12	A12 West of Marlesford	EB	ATC_12_EB	784	755	-29	1.0	✓	60	71	11	1.4	✓	25	22	-3	0.6	✓	869	848	-21	0.7	✓
		WB	ATC_12_WB	553	582	29	1.2	✓	49	56	7	1.0	✓	19	25	6	1.3	✓	621	663	42	1.7	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	1158	1461	303	8.4	✗	257	159	-98	6.8	✓	63	78	15	1.8	✓	1478	1698	220	5.5	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1413	1285	-128	3.5	✓	223	134	-89	6.7	✓	63	56	-7	0.9	✓	1699	1475	-224	5.6	✓
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	124	192	68	5.4	✓	12	9	-3	0.9	✓	5	1	-4	2.3	✓	141	202	61	4.7	✓
		WB	ATC_85_WB	123	162	39	3.3	✓	16	7	-9	2.7	✓	7	1	-6	3.0	✓	146	170	24	1.9	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	208	136	-72	5.5	✓	20	12	-8	2.0	✓	3	4	1	0.5	✓	231	152	-79	5.7	✓
		SB	ATC_90_SB	213	146	-67	5.0	✓	18	6	-12	3.5	✓	3	4	1	0.5	✓	234	156	-78	5.6	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	69	80	11	1.3	✓	8	1	-7	3.3	✓	0	0	0	0.0	✓	77	81	4	0.5	✓
		SB	ATC_91_SB	40	52	12	1.8	✓	6	2	-4	2.0	✓	1	0	-1	1.4	✓	47	54	7	1.0	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	% GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

Table A.27 – Traffic Flow Validation – Screenlines – 6-7pm

Screenline			Cars				LGVs				HGVs				Total Vehicles			
Ref	Location	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Saxmundham Cordon																		
Inbound																		
ATC_9_SB	B1125 South of Westleton	SB	53	63	10	1.3	5	1	-4	2.3	1	0	-1	1.4	59	64	5	0.6
ATC_1_SB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	SB	372	268	-104	5.8	37	34	-3	0.5	12	13	1	0.3	421	315	-106	5.5
ATC_10_EB	A1120 West of Peasenhall	EB	71	90	19	2.1	9	7	-2	0.7	2	2	0	0.0	82	99	17	1.8
ATC_12_EB	A12 West of Marlesford	EB	585	634	49	2.0	40	63	23	3.2	18	19	1	0.2	643	716	73	2.8
ATC_85_EB	B1069 between Tunstall and Snape	EB	73	143	70	6.7	6	4	-2	0.9	2	1	-1	0.8	81	148	67	6.3
Outbound																		
ATC_9_NB	B1125 South of Westleton	NB	45	60	15	2.1	10	1	-9	3.8	1	0	-1	1.4	56	61	5	0.7
ATC_1_NB	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	282	395	113	6.1	29	30	1	0.2	11	13	2	0.6	322	438	116	6.0
ATC_10_WB	A1120 West of Peasenhall	WB	71	74	3	0.4	14	8	-6	1.8	2	1	-1	0.8	87	83	-4	0.4
ATC_12_WB	A12 West of Marlesford	WB	398	418	20	1.0	35	40	5	0.8	10	17	7	1.9	443	475	32	1.5
ATC_85_WB	B1069 between Tunstall and Snape	WB	78	126	48	4.8	8	3	-5	2.1	1	1	0	0.0	87	130	43	4.1

Summary:

Screenline		Cars				LGVs				HGVs				Total Vehicles			
Screenline/Cordon	Direction	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH	Obs	Mod	Diff	GEH
Leiston	Inbound	1154	1198	44	**1.3**	97	109	12	**1.2**	35	35	0	**0.0**	1286	1342	56	**1.5**
	Outbound	874	1073	199	**6.4**	96	82	-14	**1.5**	25	32	7	**1.3**	995	1187	192	**5.8**

Table A.28 – Traffic Flow Validation – All Counts – 6-7pm

Count Location				Cars					LGVs					HGVs					Total Vehicles				
Site	Location	Dir	Count_ID	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow	Obs	Mod	Diff	GEH	GEH or Flow
1	A12 London Road between Willow Marsh Lane and A144 (Darsham)	NB	ATC_1_NB	282	395	113	6.1	✗	29	30	1	0.2	✓	11	13	2	0.6	✓	322	438	116	6.0	✗
		SB	ATC_1_SB	372	268	-104	5.8	✗	37	34	-3	0.5	✓	12	13	1	0.3	✓	421	315	-106	5.5	✗
9	B1125 South of Westleton	NB	ATC_9_NB	45	60	15	2.1	✓	10	1	-9	3.8	✓	1	0	-1	1.4	✓	56	61	5	0.7	✓
		SB	ATC_9_SB	53	63	10	1.3	✓	5	1	-4	2.3	✓	1	0	-1	1.4	✓	59	64	5	0.6	✓
10	A1120 West of Peasenhall	EB	ATC_10_EB	71	90	19	2.1	✓	9	7	-2	0.7	✓	2	2	0	0.0	✓	82	99	17	1.8	✓
		WB	ATC_10_WB	71	74	3	0.4	✓	14	8	-6	1.8	✓	2	1	-1	0.8	✓	87	83	-4	0.4	✓
12	A12 West of Marlesford	EB	ATC_12_EB	585	634	49	2.0	✓	40	63	23	3.2	✓	18	19	1	0.2	✓	643	716	73	2.8	✓
		WB	ATC_12_WB	398	418	20	1.0	✓	35	40	5	0.8	✓	10	17	7	1.9	✓	443	475	32	1.5	✓
82-3	A12 Southbound, S of the A1152 Rbt	SB	ATC_82-3_SB	864	1082	218	7.0	✗	260	117	-143	10.4	✗	26	45	19	3.2	✓	1150	1244	94	2.7	✓
82-4	A12 Northbound, S of the A1152 Rbt	NB	ATC_82-4_NB	1262	1145	-117	3.4	✓	257	129	-128	9.2	✗	61	48	-13	1.8	✓	1580	1322	-258	6.8	✗
85	B1069 between Tunstall and Snape	EB	ATC_85_EB	73	143	70	6.7	✓	6	4	-2	0.9	✓	2	1	-1	0.8	✓	81	148	67	6.3	✓
		WB	ATC_85_WB	78	126	48	4.8	✓	8	3	-5	2.1	✓	1	1	0	0.0	✓	87	130	43	4.1	✓
90	B1121 South West of Saxmundham	NB	ATC_90_NB	131	101	-30	2.8	✓	8	11	3	1.0	✓	3	3	0	0.0	✓	142	115	-27	2.4	✓
		SB	ATC_90_SB	132	108	-24	2.2	✓	13	4	-9	3.1	✓	3	3	0	0.0	✓	148	115	-33	2.9	✓
91	B1125 between Blythburgh and Middleton	NB	ATC_91_NB	26	51	25	4.0	✓	6	1	-5	2.7	✓	1	0	-1	1.4	✓	33	52	19	2.9	✓
		SB	ATC_91_SB	21	48	27	4.6	✓	6	1	-5	2.7	✓	0	0	0	0.0	✓	27	49	22	3.6	✓

Summary:

Vehicle Class	No. of Counts	GEH > 10	GEH <=5	%GEH or Flow
Car	4	0	2	50%
LGV	4	0	4	100%
HGV	4	0	4	100%
Total Vehs	4	0	2	50%

APPENDIX 8B: VISUM TRAFFIC MODEL REFERENCE CASE TRAFFIC INPUTS AND HIGHWAY ASSUMPTIONS

Contents

- VISUM Traffic Model - 2023 Reference Case Assumptions
- VISUM Traffic Model - 2028 Reference Case Assumptions
- VISUM Traffic Model - 2034 Reference Case Assumptions
- Proposed layout: Western Signalised Access Drawing, Land South and East of Adastral Park, Ipswich.
- Proposed layout: A12 / A14 Junction Drawing, Land South and East of Adastral Park, Ipswich.
- Proposed layout: Adastral Park / Gloster Road / A12 Drawing, Land South and East of Adastral Park, Ipswich.
- Proposed layout: A12 / Martlesham Roundabout Drawing, Land South and East of Adastral Park, Ipswich.
- Proposed layout: A12 / Foxhall Roundabout Drawing, Land South and East of Adastral Park, Ipswich.
- Proposed layout: Nacton Road Site Access Drawing, Land West of Ransomes Way, Ipswich.
- Proposed layout: Nacton Road / The Heavens Roundabout Drawing, Land West of Ransomes Way, Ipswich.
- Proposed layout: Ransomes Way / Central Avenue Roundabout Drawing, Land West of Ransomes Way, Ipswich.
- Proposed layout: Ransomes Way / Felixstowe Road Roundabout Drawing, Land West of Ransomes Way, Ipswich.
- Proposed layout: A1214 / B1077 Roundabout Drawing, Land West of Westerfield Road, Ipswich.
- Proposed layout: Valley Road / Henley Road & Dale Hall Lane Junction Drawing, Land West of Westerfield Road, Ipswich.
- Proposed layout: Henley Road Site Access Junction Drawing, Land West of Westerfield Road, Ipswich.
- Proposed layout: Westerfield Road Site Access Arrangement Drawing, Land West of Westerfield Road, Ipswich.

- Proposed layout: Lake Loathing Third Crossing, Central Bridge Option Drawing, Lowestoft
- Proposed layout: Felixstowe Road Roundabout Drawing, Trinity Park, Suffolk.
- Proposed layout: A1071 / Hadleigh Road Drawing, Wolsey Grange, Ipswich.
- Proposed layout: Poplar Lane Highway Improvements Drawing, Wolsey Grange, Ipswich.
- Proposed layout: A1214 London Road Junction Drawing, Wolsey Grange, Ipswich.
- Proposed layout: A1214 / Scrivener Drive High Improvements Drawing, Wolsey Grange, Ipswich.

TECHNICAL NOTE: SIZEWELL C VISUM TRAFFIC MODEL

DATE:	16 January 2020	**CONFIDENTIALITY:**	Public
SUBJECT:	2023 Reference Case Assumptions		
PROJECT:	50400326	**AUTHOR:**	Sally Powell
CHECKED:	Daniel Tarry / Stephanie Biggs	**APPROVED:**	Nick Cottman

1.0 INTRODUCTION

1.1. WSP was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

1.2. The models will be used to identify the location where mitigation schemes may be required to address the impacts of development traffic and demonstrate the effect of those schemes on traffic volumes. The outputs of the VISUM modelling will be incorporated into smaller scale operational models, the Transport Assessment and provide inputs to environmental analysis.

1.3. Base year VISUM transport models have been developed, to represent seven separate hourly periods as follows:

- 06:00-07:00
- 07:00-08:00
- 08:00-09:00
- 15:00-16:00
- 16:00-17:00
- 17:00-18:00
- 18:00-19:00

1.4. In the development of the base year transport models, Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 models have been calibrated and validated, using observed traffic data collected across the study area between March and June 2015, based on the criteria set out in TAG Unit M3.1 Highway Assignment Modelling.

1.5. The 2015 Base models have been used to develop a forecast year highway network and demand, representative of the likely traffic conditions in the 'early years' of construction which is currently expected to be 2023. These 'Reference Case' models include 'committed' developments, as agreed with Suffolk County Council (SCC), and background traffic growth. In addition, all future year scenarios have been modelled including traffic flows generated by an outage at Sizewell B, which is performed periodically (approximately every 18 months and lasting approximately 6 weeks), so that robust traffic flows are reflected in each scenario.

1.6. The 2023 Reference Case models will subsequently be used to assess the addition of SZC construction traffic.

1.7. Previous work has focussed on an early years forecast year of 2022, however the timescales have been revised to provide a more robust basis for assessment.

1.8. A review of traffic growth across Suffolk roads in comparison with forecast growth factors obtained from the DfT's TEMPro software, for the period 2012 to 2018, has been undertaken and presented in section 4 of this technical note for the purposes of demonstrating the reasoning for constraining overall growth to TEMPro. This analysis also provides confidence that the base year of 2015 is a valid basis for forecasting across a long-term timescale. Although traffic growth may fluctuate in reality more than predicted by a TEMPro forecast, in the long-term the actual growth is shown to be broadly in line with that forecasted, so that it can be inferred that the 2015 base model would provide a robust representation of forecast year traffic volumes.

1.9. This document details the methodology applied to develop the 2023 Reference Case models traffic demand and highway network improvements.

2.0 COMMITTED DEVELOPMENT

2.1 Forecast year traffic demand is estimated using one of two methods:

– Specific trip generation and distribution, for committed developments

– Background traffic growth (applied across the model), for other developments and socio-economic factors such as changes in car ownership.

2.2 Although not all developments have been granted planning permission at this stage, the following developments shown in Table 1 are considered by SCC to be 'committed' for the purpose of including them explicitly within the Reference Case models.

Table 1 – Committed Developments

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2023
1	Adastral Park	Suffolk Coastal District Council	60,200m^2 (B1) 2,000 homes (C3) 180 bed hotel (C1) mixed use local centre (1.82ha) – health care provision (D1), community Centre (D1), retail (A1), Café (A3), Public house (A4), Takeaway (A5) Two form entry primary school (D1) expansion of university (2.3ha) (D1)	Partial: approximately 225 homes (25 by 2021, 100 annually thereafter) and no retail
2	Uniserve, Clickett Hill	Suffolk Coastal District Council	B8 distribution facility – 46,575m^2 (warehouse), 990m^2 (office)	100%
3	Martlesham	Suffolk Coastal District Council	180 homes (38 dwellings occupied at June 2015, 142 remaining)	100%
4	Ipswich Garden Suburb (North Ipswich)	Ipswich Borough Council	<u>Four areas:</u> Fonnereau Village Henley Village Red House Village Ipswich School site 3,500 dwellings District Centre – up to 2,000m^2 convenience retail, up to 1,220m^2 comparison retail, up to 1,320m^2 services including A1 to A5, health centre, library, police office, community centre	Partial: approximately 740 dwellings and no retail) as agreed with SCC

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2023
			Two Local Centres – up to 500m^2 convenience retail, up to 600m^2 comparison retail, up to 500m^2 services including A1 to A5	
			Secondary school	
			Three primary schools	
			Public open space and a country park	
5	Trinity Park	Ipswich Borough Council	300 homes	100%
6	Futura Park	Ipswich Borough Council	Phase 1 – 10,008m^2 (A1 – Food Retail), 6,186m^2 (A1 – Non-Food Retail)	100%
			Phase 2 – 10,350^2 (B1), 4,050m^2 (B2), 31,680m^2 (B8)	
7	Brooke Peninsula, Lowestoft	Waveney District Council	850 homes	100%
8	Felixstowe Port	Suffolk Coastal District Council	Further 1,650 HGV movements per day by 2023	100%
9	Belstead House	Babergh	155 homes	100%
10	Wolsey Grange	Babergh	475 homes	100%
			Primary school (210 pupils)	
			Leisure park	
11	Woods Meadow	Suffolk Coastal District Council	180 homes	100%
12	Fairfield Road, Framlingham	Suffolk Coastal District Council	163 homes	100%
13	Mount Pleasant, Framlingham	Suffolk Coastal District Council	95 homes	100%
14	Saxmundham HSA	Suffolk Coastal District Council	800 homes	Partial: approximately 318 homes and 332 jobs
			559 jobs	

2.3 For the developments shown in Table 1, the proposed trip generation has been derived from their respective Transport Assessments. Each individual development is now discussed in more detail.

2.4 The calculation of traffic generated by 'Sizewell B Outage', which is included in all forecast year scenarios, is described in section 6.

Adastral Park

2.5 Adastral Park is located immediately to the east of the A12, 8.5km north of the centre of Ipswich, and the proposal for the site is for a mixed-use development as detailed in Table 1. The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C 'early years' construction phase:

- Approximately 225 homes by 2023, of 2,000 homes at completion
- None of the retail element

2.6 The net trip generation for the full development is set out in Table 2 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 2 – Adastral Park peak hour Car trips (full development)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	50[1]	579	560	302
Primary School	14	0	0	0
Commuting	202	10	8	160
Service	43	4	3	25
Visitors	13	11	11	13
Hotel	26	33	31	24
Postgraduate Research	45	7	3	32
Overall Traffic Generation	**393**	**644**	**616**	**556**

Source: Table 28 within the 'Adastral Park' Transport Assessment (April 2009)

2.7 The residential and primary school trips were factored by 225 / 2,000 homes, whilst all other trip purposes were excluded, to provide 2023 trip generation as shown in Table 3.

Table 3 – Adastral Park peak hour Car trips (2023)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential trips	6	65	63	34
Primary school trips	2	0	0	0
Overall Traffic Generation	**7**	**65**	**63**	**34**

2.8 Trip rates for other hours were taken from Appendix 14 of the TA for residential and primary school trips. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00

[1] Trip volumes in Table 2 were taken from Table 28 of the Transport Assessment (Adastral Park Transport Assessment, April 2009), which had been adjusted to take account of double counting from the original residential trip volumes in Table 19 of the Transport Assessment.

– 15:00-16:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
– 16:00-17:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
– 18:00-19:00 / 17:00-18:00 (08:00-09:00 for primary school trips)

2.9 The resulting ratios are presented in Table 4 and Table *5*.

Table 4 – Adastral Park trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.09	0.35	0.17	0.64	**0**	**0**	**0.51**	**0.54**
Primary school	0.00	0.00	0.02	0.01	0.39	0.28	**0**	**0**	**0.04**	**0.02**

Table 5 – Adastral Park trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.45	0.28	0.45	0.31	0.40	0.34	0.54	0.31	**0.84**	**0.91**	**0.83**	**0.99**	**0.75**	**1.09**
NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		08:00-09:00 (AM PEAK)		**RATIO (3-4PM / 8-9AM)**		**RATIO (4-5PM / 8-9AM)**		**RATIO (6-7PM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Primary school	0.26	0.31	0.03	0.05	0.00	0.00	0.39	0.28	**0.66**	**1.10**	**0.08**	**0.19**	**0**	**0**

2.10 These ratios, once applied to the relevant trip volumes shown in Table 3, yielded trip volumes for the modelled hours presented in Table 6.

Table 6 – Adastral Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	Arr	Dep	Arr	Dep	Arr	Dep
Residential	0	0	3	35	6	65	53	31	52	34	63	34	47	37
Primary school	0	0	0	0	2	0	1	0	0	0	0	0	0	0
Overall Traffic Generation	**0**	**0**	**3**	**35**	**7**	**65**	**54**	**31**	**52**	**34**	**63**	**34**	**47**	**37**

2.11 Access to the development will be via:

– New highway access from C356 Newbourne Road / Heath Road / Waldringfield Road

2.12 Other highway improvements designed to mitigate the impact of the development on the surrounding highway network, which were set out in an updated TA (December 2017), include the following::

- Partial signalisation of A12 / Foxhall Road, A12 / Barrack Square, and A12 / Anson Road roundabouts and the A12 / A14 Seven Hills junction
- Signalisation of Newbourne Road / site access
- New signalised access on the A12 between Foxhall Road and Barrack Square
- Reduction in speed limit (50mph) between signalised A12 / Foxhall Road and A12 / A1214 junctions in accordance with DfT guidance

2.13 For the purposes of the Sizewell C 2023 Reference Case modelling, it is assumed none of the mitigation will be completed by 2023. This phasing is based on the Section 106 agreement provided by SCC which provides the trigger points for the improvements coming forward in line with housing completion, and the assumed level of build out provided SCC.

2.14 No signal timings were included in the TA for the proposed junction improvements, therefore approximate signal timings were applied in the VISUM models to provide minimal delays to the A12 through movements.

2.15 There is also a bus strategy associated with the development with the existing high quality bus route retained and supplemented by new routes servicing the development and providing a faster, more direct route to and from Ipswich town centre and the railway station along with a new service to Woodbridge. This was not included in the VISUM model as it does not affect the calculations of public transport or private transport demand or the resultant highway assignment, for the Sizewell C assessment.

Martlesham

2.16 The site is located between Main Road on the northern side and Felixstowe Road on the eastern side approximately two miles to the east of Ipswich. The site is surrounded by residential properties on the northern side of Main Road including along the frontage on the eastern side. There is a Tesco superstore on the southern side and the A12 dual carriageway to the west.

2.17 The development comprises 180 houses, and the overall trip generation for the development is set out in Table 7, which is taken from the TA that accompanied the planning application.

Table 7 – Martlesham peak hour Car trips (full 180 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	57	78	85	57
Overall Traffic Generation	**57**	**78**	**85**	**57**

Source: Table 5.2 within the 'Martlesham' Transport Assessment (September 2011)

2.18 The development however is now completed and 38 dwellings were occupied at June 2015, therefore some trips are already included in the 2015 Base model. Trips generated by the remaining 142 dwellings were calculated for inclusion in the Reference Case model, as shown in Table 8.

Table 8 – Martlesham peak hour Car trips (remaining 142 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	45	62	67	45
Overall Traffic Generation	**45**	**62**	**67**	**45**

2.19 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and *Table 5* applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 8. The resulting trips for all seven modelled hours are shown in Table 9.

Table 9 – Martlesham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**23**	**33**	**45**	**62**	**56**	**41**	**56**	**45**	**67**	**45**	**50**	**49**

2.20 Junction improvements associated with the development are as follows:

- Provision of a 7.3m wide access from a new ghost-island right turn junction onto Main Road
- Provision of an emergency access onto Felixstowe Road on the eastern boundary

Ipswich Garden Suburb

2.21 The site is located north of Ipswich in the area bounded by the A1214, Henley Road, Tuddenham Road and Lower Road, and is divided by the B1077 Westerfield Road and the railway line.

2.22 The development is a proposed mixed use including 3,500 dwellings, schools and retail and is spread across four areas:

- Fonnereau Village (Land West of Westerfield Road)
- Henley Village (north of railway line, west of Westerfield Road)
- Red House Village (east of Westerfield Road)
- Ipswich School site

2.23 The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C 'early years' construction phase:

- Approximately 740 homes by 2023
- None of the retail element

2.24 The trip generation for the full development, taken from Appendix 10 of the TA which described the S-Paramics micro-simulation assessment of the Ipswich Garden Suburb development, is shown in Table 10 for five of the seven modelled hours.

Table 10 – Ipswich Garden Suburb peak hour Car trips (full development)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential (Phase 1)	7	25	12	50	30	19	35	21	27	19
Residential (Phase 2)	34	126	60	248	149	96	173	105	134	95
Food Retail	30	16	69	49	118	124	124	127	98	119
Non-Food Retail	26	25	32	32	29	36	45	39	33	34
Ipswich School Site (resi)	14	50	24	99	60	38	69	42	54	38
Henley Village (resi)	50	185	88	363	219	141	253	154	197	139

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Red House Village (resi)	54	202	96	396	239	154	276	168	215	151
Overall Traffic Generation	**215**	**629**	**381**	**1237**	**844**	**608**	**975**	**656**	**758**	**595**

Source: Tables 9 and 12 within Appendix 10 of the 'Ipswich Garden Suburb' Transport Assessment (June 2014)

2.25 The total residential trips were factored by 740 / 3,500 homes and the retail trips were excluded, to provide 2023 trip generation for these hours as shown in Table 11.

Table 11 – Ipswich Garden Suburb peak hour Car trips (2023)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	34	124	59	244	147	95	170	104	133	93
Overall Traffic Generation	**34**	**124**	**59**	**244**	**147**	**95**	**170**	**104**	**133**	**93**

2.26 To identify the vehicle trips for the remaining two modelled hours, the ratios of trip rates taken from the TRICS database, using the same categories quoted in the development TA, were derived as follows:

– 06:00-07:00 / 08:00-09:00

– 15:00-16:00 / 17:00-18:00

2.27 The resulting ratios are presented in Table 12.

Table 12 – Ipswich Garden Suburb trip rate ratios for other hours

NATURE OF TRIPS	06:00-07:00		08:00-09:00 (AM PEAK)		15:00-16:00		17:00-18:00 (PM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (3-4PM / 5-6PM)**	
	ARR	DEP	ARR	DEP			ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.16	0.42	0.27	0.20	0.37	0.21	**0.00**	**0.00**	**0.73**	**0.96**

2.28 These ratios, once applied to the relevant trip volumes shown in Table 11, yielded trip volumes for the modelled hours presented in Table 13.

Table 13 – Ipswich Garden Suburb Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**34**	**124**	**59**	**244**	**124**	**100**	**147**	**95**	**170**	**104**	**133**	**93**

2.29 Access to this part of the development is assumed to be via a new priority junction on Westerfield Road.

2.30 All other highway infrastructure proposals associated with this development are assumed to come forward following further completion of the development beyond Phase 1, therefore are excluded from the 2023 Reference Case models.

Uniserve, Clickett Hill

2.31 The Clickett Hill site is located immediately to the west of the A14 Junction 61. The proposals are for a B8 distribution centre comprising a 46,575m^2 warehouse and 990m^2 of office space. Goods will be transferred via HGV containerised delivery from the Port of Felixstowe to the warehouse, then the HGVs will transfer either back to the Port or onward to another destination.

2.32 Whilst the opening year in the Transport Assessment is 2015, in order to provide a robust assessment the development traffic is assumed to be excluded from the 2015 base year VISUM models and therefore is required to be included as committed development in the 2023 Reference Case models.

2.33 The overall trip generation for the development, for all vehicles and HGVs, is set out below in Table 14, which is taken from the TA that accompanied the planning application. Although the 'Inter Peak Hour' for this development is proposed to fall in the period 14:00-15:00, these trip volumes are inferred for the 15:00-16:00 VISUM modelled hour.

Table 14 – Clickett Hill peak hour vehicle trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)		INTER PEAK (15:00-16:00)	
	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0.067	0.031	0.025	0.077	0.072	0.105
HGV trip rates	0.013	0.008	0.008	0.011	0.018	0.016
Total Vehicle movements	**32**	**15**	**12**	**36**	**34**	**50**

Source: Tables 5.1, 5.2 and 5.3 within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.34 The TRICS data contained within Appendix C of the development TA was used to calculate similar trips for the other four modelled hours, which are shown in Table 15.

Table 15 – Clickett Hill vehicle trips – other hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		16:00-17:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0	0	0.075	0.054	0.056	0.091	0.019	0.045
HGV trip rates	0	0	0.01	0.01	0.018	0.011	0.005	0.008
Total Vehicle movements	**0**	**0**	**36**	**26**	**27**	**43**	**9**	**21**

Source: Appendix C within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.35 As stated in the Transport Assessment (section 5.2), HGV movements to and from the Port are already permitted under the scope of the Port Expansion (discussed later in this technical note). Therefore, for the purposes of including the Clickett Hill development trips within the Sizewell C Reference Case VISUM models, the total vehicle trips shown in Table 14 and Table 15 have been adjusted using the 'HGV' and 'All Vehicle' trip rates to provide an estimate of Car trips only, as shown in Table 16.

Table 16 – Clickett Hill Car trips

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Car trips	**0**	**0**	**31**	**21**	**26**	**11**	**26**	**42**	**18**	**38**	**8**	**31**	**7**	**17**

2.36 Access to the site will be via the existing A14 Junction 61.

Trinity Park

2.37 The site is located between Felixstowe Road and Bucklesham Road in the south-east of Ipswich, to the east of Warren Heath.

2.38 The development comprises 300 homes as a mixture of private and affordable housing, expected to be constructed and occupied by 2017. The overall trip generation for the development is set out below in Table 17, which is taken from the TA that accompanied the planning application.

Table 17 – Trinity Park peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Private Housing	37	92	79	46
Affordable Housing	12	30	25	14
Overall Traffic Generation	**48**	**122**	**104**	**60**

Source: Table 5.6 within the 'Trinity Park' Transport Assessment (August 2012)

2.39 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 17. The resulting trips for all seven modelled hours are shown in Table 18.

Table 18 – Trinity Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**25**	**66**	**48**	**122**	**88**	**55**	**86**	**60**	**104**	**60**	**78**	**65**

2.40 Access to the site is proposed to be via two new roundabouts on Felixstowe Road, to the east of the existing roundabout, which currently serves the Trinity Park Conference and Events Centre.

Futura Park

2.41 Futura Park is located between the A1189 and Nacton Road, to the south east of Ipswich.

2.42 The development proposals comprise a mix of land uses to be completed in two phases, as described in Table 19. Both phases are due to be completed by 2023, so the full development trips are included in the 2023 Reference Case models.

2.43 The overall trip generation for the development is set out in Table 19, which is taken from the Transport Assessment that accompanied the planning application.

Table 19 – Futura Park gross peak hour person trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	152	75	195	211
	Non-Food Retail	48	17	64	72
2	Non-Food Retail	44	28	94	106
	Office	173	23	25	128
	Industrial	15	3	2	14
	Warehousing	42	26	15	38
Overall Traffic Generation		**474**	**172**	**395**	**569**

Source: Tables 6.3 and 6.6 within the 'Futura Park' Transport Assessment (September 2011)

2.44 These trip volumes represent all modes, therefore mode split factors were applied to calculate car trips. The 'Car' mode shares, obtained from the TA, are 54% for retail trips and 80% for employees. The resulting Car trips are shown in Table 20.

Table 20 – Futura Park gross peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	105	114
	Non-Food Retail	26	9	35	39
2	Non-Food Retail	24	15	51	57
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**225**	**353**

2.45 Finally, an assessment was made within the TA to distinguish 'primary' retail trips (additional to the existing traffic) from 'non-primary' retail trips (an existing retail trip that diverts to the new retail location). The TA states that, in the AM peak all retail trips are assumed to be primary, whilst in the PM peak 60% are assumed to be primary and 40% non-primary.

2.46 Non-primary trips are not included in the VISUM model, since the main part of the trip is assumed to be already modelled. The primary trip volumes are shown in Table 21.

Table 21 – Futura Park net peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	63	68
	Non-Food Retail	26	9	21	23
2	Non-Food Retail	24	15	31	34
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**149**	**269**

2.47 Trip rates for other hours were taken from Appendix 14 of the TA for most land uses, although 'Food Retail' was not provided so these were obtained from the TRICS database. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.48 The resulting ratios are presented in Table 22 and Table 23.

Table 22 – Futura Park trip rate ratios for AM hours

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
		ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	0.31	0.06	1.40	0.86	2.55	1.90	**0.12**	**0.03**	**0.55**	**0.45**
	Non-Food Retail	0.00	0.00	0.00	0.00	0.00	0.00	**0**	**0**	**0**	**0**
2	Non-Food Retail	0.00	0.00	0.28	0.01	0.81	0.56	**0.00**	**0.00**	**0.34**	**0.02**
	Office	0.00	0.00	0.71	0.08	1.56	0.17	**0.00**	**0.00**	**0.46**	**0.46**
	Industrial	0.00	0.00	0.25	0.06	0.26	0.06	**0.00**	**0.00**	**0.96**	**0.94**
	Warehousing	0.27	0.21	0.11	0.07	0.13	0.11	**2.09**	**1.97**	**0.85**	**0.69**

Table 23 – Futura Park trip rate ratios for PM hours

PHASE	NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		RATIO (3-4PM / 5-6PM)		RATIO (4-5PM / 5-6PM)		RATIO (6-7PM / 5-6PM)	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	4.62	4.86	4.91	4.84	4.52	4.93	5.08	5.34	**0.91**	**0.91**	**0.97**	**0.91**	**0.89**	**0.92**
	Non-Food Retail	2.19	2.49	1.50	2.03	0.77	1.09	1.32	1.47	**1.66**	**1.70**	**1.14**	**1.38**	**0.58**	**0.75**
2	Non-Food Retail	2.22	2.67	2.03	2.19	1.86	1.70	1.68	1.84	**1.32**	**1.45**	**1.21**	**1.19**	**1.11**	**0.92**
	Office	0.21	0.38	0.19	1.00	0.03	0.27	0.19	1.24	**1.09**	**0.31**	**0.96**	**0.81**	**0.16**	**0.22**
	Industrial	0.07	0.10	0.05	0.30	0.05	0.07	0.03	0.21	**2.74**	**0.50**	**1.96**	**1.46**	**1.67**	**0.32**
	Warehousing	0.07	0.10	0.09	0.11	0.05	0.08	0.06	0.15	**1.15**	**0.69**	**1.50**	**0.71**	**0.85**	**0.56**

2.49 These ratios, once applied to the trip volumes shown in Table 21, yielded trip volumes for the modelled hours presented in Table 24.

Table 24 – Futura Park Car trip volumes

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
1	Food Retail	10	1	45	19	82	41	57	62	61	62	63	68	56	63
	Non-Food Retail	0	0	0	0	26	9	35	40	24	32	21	23	12	17
2	Non-Food Retail	0	0	8	0	24	15	40	50	37	41	31	34	34	32
	Office	0	0	63	8	138	18	22	31	19	82	20	102	3	22
	Industrial	0	0	12	2	12	2	5	5	4	16	2	11	3	4
	Warehousing	71	41	29	14	34	21	14	21	18	21	12	30	10	17
Overall Traffic Generation		**81**	**43**	**157**	**43**	**316**	**106**	**174**	**209**	**163**	**254**	**149**	**269**	**119**	**154**

2.50 Access to the development will be via:

- New access James Bennett Avenue on A1189 / Central Avenue roundabout
- New priority junction access Crane Boulevard with Nacton Road

2.51 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Re-lining of A1189 between Central Avenue and Felixstowe Road roundabouts, to provide two lanes northbound approaching Felixstowe Road roundabout and two lanes southbound approaching Central Avenue roundabout

Brooke Peninsula

2.52 The site is located between the A146 Waveney Drive and Lake Lothing in Lowestoft. The proposal for the site is for a mixed use development including 850 houses as well a café and a primary school, with completion in 2023, so the development is assumed to be fully occupied by 2023.

2.53 The net trip generation for the development is set out below in Table 25 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 25 – Brooke Peninsula peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Taxi	1	4	3	2
Car driver	107	347	283	177
Total Resi	**108**	**351**	**286**	**179**
School	40	18	2	5
Café	3	1	6	4
Overall Traffic Generation	**151**	**370**	**294**	**188**

Source: Table 7.4 within the 'Brooke Peninsula' Transport Assessment (October 2013)

2.54 Trip rates for other hours were taken from Appendix N of the TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

– 06:00-07:00 / 08:00-09:00
– 07:00-08:00 / 08:00-09:00
– 15:00-16:00 / 17:00-18:00
– 16:00-17:00 / 17:00-18:00
– 18:00-19:00 / 17:00-18:00

2.55 The resulting ratios are presented in Table 26 and Table 27.

Table 26 – Brooke Peninsula trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.71	0.23	0.15	0.36	**0.00**	**0.00**	**4.67**	**0.64**
Cafe	0.00	0.00	0.55	0.11	0.55	0.66	**0.00**	**0.00**	**1.00**	**0.17**
Primary school	0.00	0.00	0.02	0.01	0.25	0.18	**0.00**	**0.00**	**0.08**	**0.03**

Table 27 – Brooke Peninsula trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.26	0.21	0.30	0.17	0.23	0.22	0.37	0.24	**0.70**	**0.88**	**0.81**	**0.70**	**0.62**	**0.92**

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Café	0.66	1.43	1.54	0.99	3.19	1.87	1.10	0.77	**0.60**	**1.86**	**1.40**	**1.29**	**2.90**	**2.43**
Primary school	0.16	0.21	0.03	0.05	0.01	0.01	0.01	0.02	**19.63**	**11.56**	**3.75**	**2.67**	**1.38**	**0.72**

2.56 These ratios, once applied to the trip volumes shown in Table 25, yielded trip volumes for the modelled hours presented in Table 28.

Table 28 – Brooke Peninsula Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	504	225	108	351	199	158	232	125	286	179	177	165
Café	0	0	3	0	3	1	4	7	8	5	6	4	17	10
Primary school	0	0	3	1	40	18	39	58	8	13	2	5	3	4
Overall Traffic Generation	**0**	**0**	**511**	**226**	**151**	**370**	**242**	**223**	**247**	**144**	**294**	**188**	**197**	**178**

2.57 Access to the development will be via:

- New signalised access onto A146 Waveney Drive
- Existing accesses Nelson Wharf, School Road and Heath Road

2.58 The signal timings modelled in VISUM for the new main junction with Waveney Drive have been obtained from Appendix P of the Transport Assessment.

Felixstowe Port Expansion

2.59 In November 2003, Felixstowe Port applied for a Harbour Revision Order (HRO), planning permission and other necessary consents for works to expand the capacity of the Port. This was granted in 2006 and subsequently varied in 2008 to allow revised phasing.

2.60 Since the public inquiry in 2004, the background conditions that informed the TA have changed substantially which necessitated a review of the traffic generation assumed at that time. Table 4.1 within the Berth 9 Quay Extension – Statement of Environmental Compliance (January 2013) report suggests that, by 2023, there could be a further 1,650 HGV movements per day with the full expansion of the port.

2.61 Figure 1 shows the HGV arrival profile for the Port of Felixstowe. The 1,650 HGV movements are profiled in the VISUM Reference Case according to the information shown in Figure 1 and, for the purposes of modelling, we assume that all of these HGV movements will be on the A14 south of Ipswich, with the majority (75%) then remaining on the A14 but some (25%) on the A12 south of Ipswich. These destinations are represented by VISUM model zone 11 and zone 14 respectively.

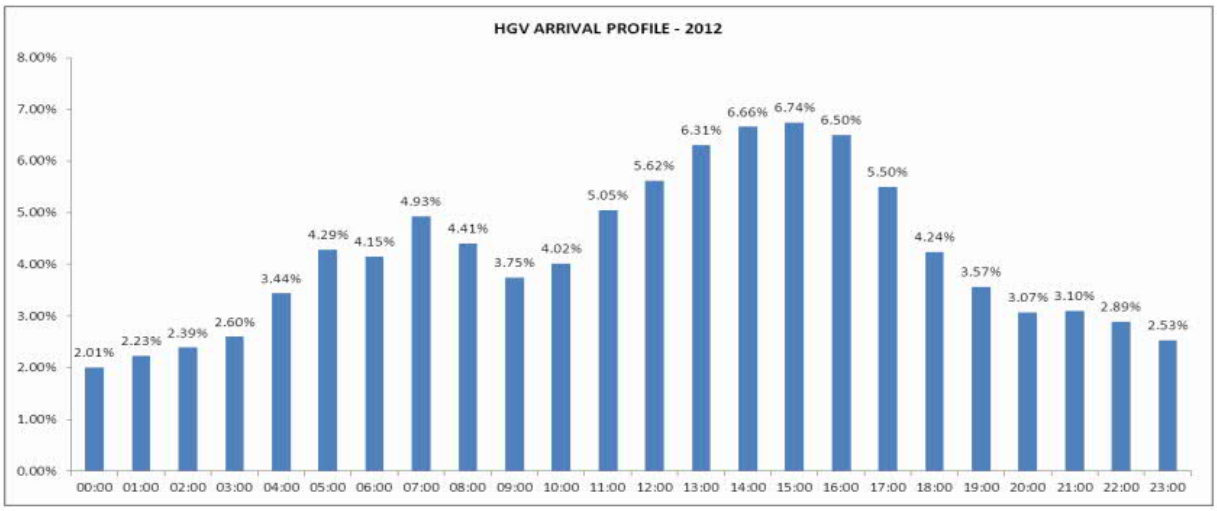


Figure 1 – HGV arrival profile- presentation to EDFE by the Port of Felixstowe (February 2014)

2.62 This results in HGV volumes being added to the matrices as shown in Table 29.

Table 29 – Felixstowe Port Expansion – HGV trip volumes

HOUR	%	TRIPS		TO/FROM A14 (ZONE 11)		TO/FROM A12 (ZONE 14)	
		ARR	DEP	ARR	DEP	ARR	DEP
				75%		**25%**	
06:00-07:00	4.15%	**34**	**34**	26	26	8	8
07:00-08:00	4.93%	**41**	**41**	31	31	10	10
08:00-09:00	4.41%	**36**	**36**	27	27	9	9
15:00-16:00	6.74%	**56**	**56**	42	42	14	14
16:00-17:00	6.50%	**54**	**54**	40	40	14	14
17:00-18:00	5.50%	**45**	**45**	34	34	11	11
18:00-19:00	4.24%	**35**	**35**	26	26	9	9
Total Daily	100%	825	825				
		1,650					

2.63 The port expansion is also likely to be associated with an increased number of employees at the site, which in turn may result in additional staff car movements. In the absence of reliable information these trips were not included explicitly in the model but we assume have been taken into account in the overall growth assumptions.

Belstead House

2.64 The site is located on Belstead Meadows, to the east of the A1214 and north of the A14, to the south-west of Ipswich.

2.65 The development comprises 155 homes which are expected to be constructed and occupied by 2020. The overall trip generation for the development is set out below in Table 30, which is taken from the TA that accompanied the planning application.

Table 30 – Belstead House peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	23	49	56	31
Overall Traffic Generation	**23**	**49**	**56**	**31**

Source: Table 7.1 within the 'Belstead House' Transport Assessment (April 2015)

2.66 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 30. The resulting trips for all seven modelled hours are shown in Table 31.

Table 31 – Belstead House Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**12**	**27**	**23**	**49**	**47**	**28**	**47**	**31**	**56**	**31**	**42**	**34**

2.67 Trips are expected to use the existing Scrivener Drive access from the A1214.

Wolsey Grange

2.68 The site is located to the south of the A1071, in the area bounded by the A14 and A1214, to the south-west of Ipswich.

2.69 The development comprises 475 homes along with a primary school and a leisure park, which are expected to be constructed and occupied by 2023. The overall trip generation for the development is set out below in Table 32, which is taken from the TA that accompanied the planning application.

Table 32 – Wolsey Grange peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	67	201	186	117
Primary school	64	46	2	5
Leisure park	61	49	257	161
Overall Traffic Generation	**192**	**296**	**445**	**283**

Source: Tables 7.5, 7.7 and 7.9 within the 'Wolsey Grange'' Transport Assessment (July 2015)

2.70 Trip rates for other hours were taken from Appendix G of the development TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

– 06:00-07:00 / 08:00-09:00

– 07:00-08:00 / 08:00-09:00

– 15:00-16:00 / 17:00-18:00
– 16:00-17:00 / 17:00-18:00
– 18:00-19:00 / 17:00-18:00

2.71 The resulting ratios are presented in Table 33 and Table 34.

Table 33 – Wolsey Grange trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.00	0.00	0.08	0.28	0.14	0.42	**0.00**	**0.00**	**0.59**	**0.66**
Primary school (vehicles per pupil)	0.01	0.00	0.02	0.01	0.36	0.27	**0.04**	**0.01**	**0.04**	**0.02**
Leisure park (vehicles per 100sqm)	0.46	0.18	0.26	0.23	0.54	0.43	**0.86**	**0.41**	**0.49**	**0.53**

Table 34 – Wolsey Grange trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.31	0.24	0.32	0.19	0.29	0.24	0.39	0.25	**0.78**	**0.95**	**0.81**	**0.78**	**0.74**	**0.97**
Primary school (vehicles per pupil)	0.28	0.31	0.03	0.05	0.01	0.01	0.01	0.03	**28.30**	**12.56**	**2.70**	**1.88**	**0.70**	**0.52**
Leisure park (vehicles per 100sqm)	0.98	1.14	1.55	1.27	2.35	1.73	2.26	1.42	**0.43**	**0.81**	**0.69**	**0.90**	**1.04**	**1.22**

2.72 These ratios, once applied to the relevant trip volumes shown in Table 32, yielded trip volumes for the modelled hours presented in Table 35.

Table 35 – Wolsey Grange Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	40	133	67	201	146	111	150	91	186	117	138	113
Primary school	3	1	3	1	64	46	48	51	5	9	2	5	1	2
Leisurepark	52	20	30	26	61	49	111	130	176	145	257	161	267	197
Overall Traffic Generation	**55**	**21**	**72**	**160**	**192**	**296**	**305**	**292**	**332**	**245**	**445**	**283**	**407**	**312**

2.73 Access to the development will be via:

- Existing modified accesses on A1071 and A1214
- New signalised access onto A1071

2.74 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Signalisation of A1071 / Poplar Lane junction
- Signalisation of southbound arm of A1214 / Scrivener Road roundabout
- Improvements to A1071 / A1214 signalised junction and A1071 / B1113 roundabout

2.75 The signal timings modelled in VISUM were obtained from Appendix H of the Transport Assessment.

Woods Meadow

2.76 The site is located to the north of the A1152 Woods Lane, east of the Bredfield Road junction.

2.77 The development comprises 180 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 36, which is taken from the TA that accompanied the planning application.

Table 36 – Woods Meadow peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	29	96	96	50
Overall Traffic Generation	**29**	**96**	**96**	**50**

Source: Table 5.4 within the 'Woods Meadow' Transport Assessment (March 2014)

2.78 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 36. The resulting trips for all seven modelled hours are shown in Table 37.

Table 37 – Woods Meadow Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**15**	**52**	**29**	**96**	**81**	**45**	**80**	**50**	**96**	**50**	**72**	**55**

2.79 The site will be accessed via a new priority junction on Woods Lane.

Fairfield Road, Framlingham

2.80 The site is located to the south of Framlingham, in the area bounded by Fairfield Road, Brick Lane and Infirmary Lane.

2.81 The development comprises 163 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 38, which is taken from the TA that accompanied the planning application.

Table 38 – Fairfield Road peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	21	91	80	39
Overall Traffic Generation	**21**	**91**	**80**	**39**

Source: Table 6.2 within the 'Fairfield Road' Transport Assessment (August 2014)

2.82 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 38. The resulting trips for all seven modelled hours are shown in Table 39.

Table 39 – Fairfield Road Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**11**	**49**	**21**	**91**	**67**	**35**	**66**	**39**	**80**	**39**	**60**	**43**

2.83 It is assumed that the site will be accessed via a simple priority junction on Fairfield Road.

Mount Pleasant, Framlingham

2.84 The site is located to the west of Framlingham, in the area bounded by Mount Pleasant, New Street and Brook Lane.

2.85 The development comprises 95 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 40, which is taken from the TA that accompanied the planning application.

Table 40 – Mount Pleasant peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	19	42	33	21
Overall Traffic Generation	**19**	**42**	**33**	**21**

Source: Table 5.2 within the 'Mount Pleasant' Transport Assessment (June 2015)

2.86 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 40. The resulting trips for all seven modelled hours are shown in Table 41.

Table 41 – Mount Pleasant Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**10**	**23**	**19**	**42**	**28**	**19**	**27**	**21**	**33**	**21**	**25**	**23**

2.87 It is assumed that the site will be accessed via a simple priority junction on Mount Pleasant.

Saxmundham

2.88 The site is located on either side of the A12 near Saxmundham, between the B1119 Saxmundham junction and the B1121 Benhall Green junction.

2.89 The development comprises 800 homes and employment generating 559 jobs. It has been agreed with SCC that it is likely to be completed by 2034 and, for the purposes of producing a Reference Case to assess the potential impacts of Sizewell C during the 'early years' construction phase, the completion level is expected to be around 318 homes and 332 jobs by 2023.

2.90 The overall trip generation for the development is set out below in Table 42, which was provided by SCC.

Table 42 – Saxmundham peak hour Car trips (full development)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	222	371	301	203
Employment	143	38	21	118
Overall Traffic Generation	**365**	**409**	**322**	**321**

2.91 The residential trips were factored by 318 / 800 homes and the employment trips by 332 / 559 jobs, to provide 2023 trip generation for these hours as shown Table 43.

Table 43 – Saxmundham peak hour Car trips (2023)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	88	147	120	81
Employment	85	23	12	70
Overall Traffic Generation	**173**	**170**	**132**	**151**

2.92 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 43. The resulting trips for all seven modelled hours are shown in Table 44.

Table 44 – Saxmundham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	45	80	88	147	101	73	99	80	120	81	90	88
Employment	0	0	35	11	85	23	16	25	15	50	12	70	7	29
Overall Traffic Generation	**0**	**0**	**80**	**91**	**173**	**170**	**116**	**98**	**115**	**130**	**132**	**151**	**97**	**117**

2.93 The development will be accessed via a new roundabout junction located on the A12 between the B1119 Saxmundham junction and the B1121 Benhall Green junction. Being located on opposite sides of the A12, the employment and housing parts of the development will be accessed via separate arms of the new roundabout.

3.0 DISTRIBUTION

3.1 The committed developments have each been allocated a new zone in the Sizewell C model, and zones containing similar land uses have been used to give trip distributions, which are outlined in Table 45.

Table 45 – Committed development zones

DEVELOPMENT	DEVELOPMENT ZONE	SIMILAR ZONES USED FOR DISTRIBUTION	LAND USE WITHIN DISTRIBUTION ZONE
Adastral Park	1101	339	Mixed use, residential and primary school
Clickett Hill	1102	334	Industrial
Martlesham	1103	339	Mixed use, residential and primary school
Ipswich Garden Suburb	1104	378	Residential, local shops and sports centre
Trinity Park	1105	341	Residential
Futura Park	1106	377	Industrial and retail
Brooke Peninsula	1107	357	Residential and primary school
Felixstowe Port	1108	See Table 20	
Belstead House	1109	381	Mostly residential
Wolsey Grange	1110	369	Residential and retail
Woods Meadow	1111	340	Mostly residential
Fairfield Road	1112	407	Mostly residential
Mount Pleasant	1113	408	Mostly residential
Saxmundham (resi)	1114	463	Mostly residential
Saxmundham (emp)	1115	616	Includes industrial estate

4.0 BACKGROUND TRAFFIC GROWTH

TEMPro

4.1 TEMPro is a software tool that provides projections of growth over time for use in transport models, based on outputs from the National Trip End Model (NTEM). It is a nationally-consistent benchmark of growth and the forecast growth applied in the Sizewell C Reference Case models is consistent with those obtained from TEMPro.

4.2 The Central Growth forecast has been obtained directly from TEMPro using the NTEM version 7.2 datasets. Growth in car trip ends from the unadjusted TEMPro results are presented in Table 46 between 2015 and 2023 for the AM peak, Inter peak and PM peak.

Table 46 – Unadjusted TEMPro growth

TEMPRO ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.0703	1.0745	1.1012	1.1010	1.0743	1.0716
Babergh	1.0080	1.0519	1.0738	1.0708	1.0459	1.0180
Ipswich	1.0726	1.0613	1.0977	1.0985	1.0628	1.0686
Mid Suffolk	1.0058	1.0480	1.0703	1.0672	1.0424	1.0156
South Norfolk	1.0841	1.0635	1.1106	1.1115	1.0712	1.0836
Suffolk Coastal	1.0286	1.0537	1.0839	1.0822	1.0535	1.0381
Waveney	1.0365	1.0602	1.0838	1.0826	1.0568	1.0407

Alternative Planning Assumptions

4.3 The Alternative Planning Assumptions facility within TEMPro was used to remove trips associated with explicitly modelled developments from the forecast total for each district and time period. The resultant growth factors therefore represent the remaining background growth, avoiding double counting of the committed developments with traffic growth forecasts.

4.4 To undertake the adjustment within TEMPro, it is necessary to input the number of jobs and households associated with each of the development modelled explicitly. This information was extracted from the respective TA where available.

Where the data was not available (often true of employment sites where the number of jobs is not usually provided but instead floorspace is given), the number of jobs was estimated from a number of relevant sites in the TRICS database which provides both gross floor area (GFA) and number of jobs. This provided a proxy 'employee floorspace rate' by land use type, shown in Table 47, which was applied to the development floorspace to produce approximate number of jobs, shown in Table 48.

Table 47 – TRICS employee floorspace rate

LAND USE	NUMBER OF SITES SELECTED	TOTAL GFA (M^2)	TOTAL NUMBER OF JOBS	M^2 PER EMPLOYEE
Warehouse	8	70,128	419	167
Office	12	28,455	2,035	14
Food Retail	9	82,135	3,789	22

LAND USE	NUMBER OF SITES SELECTED	TOTAL GFA (M^2)	TOTAL NUMBER OF JOBS	M^2 PER EMPLOYEE
Non-Food Retail	12	86,275	1,290	67
Industrial	13	108,934	1,878	58

Table 48 – Estimated jobs based on GFA

DEVELOPMENT	LAND USE	DEVELOPMENT GFA (M^2)	NUMBER OF JOBS
Clickett Hill	Warehouse	46,575	278
	Office	990	71
	Total	**47,565**	**349**
Futura Park	Office	10,350	740
	Warehouse	31,680	189
	Food Retail	10,008	462
	Non-Food Retail	6,186	92
	Industrial	4,050	70
	Total	**62,274**	**1,553**

4.5 Summarised planning assumptions (households and jobs) for the committed developments are shown in Table 49. The TEMPro planning assumptions for these local authorities, before and after adjustment for the committed developments, are shown in Table 50. The resulting adjusted background growth factors are shown in Table 51.

Table 49 – Committed development planning assumptions

DEVELOPMENT	HOUSEHOLDS	JOBS
Belstead House	155	0
Wolsey Grange	475	0
Babergh Total	**630**	**0**
Adastral Park	225*	0*
Martlesham	142**	0
Clickett Hill	0	349
Woods Meadow	180	0
Fairfield Road	163	0
Mount Pleasant	95	0
Saxmundham	318	332
Suffolk Coastal Total	**1,123**	**681**
Ipswich Garden Suburb	740*	0*

DEVELOPMENT	HOUSEHOLDS	JOBS
Trinity Park	300	0
Futura Park	0	1,553
Ipswich Total	**1,040**	**1,553**
Brooke Peninsula, Lowestoft	850	0
Waveney Total	**850**	**0**

** Level of completion agreed with SCC*

*** 180 homes, of which 38 are occupied at June 2015 = 142 remaining*

Table 50 – TEMPro alternative planning assumptions

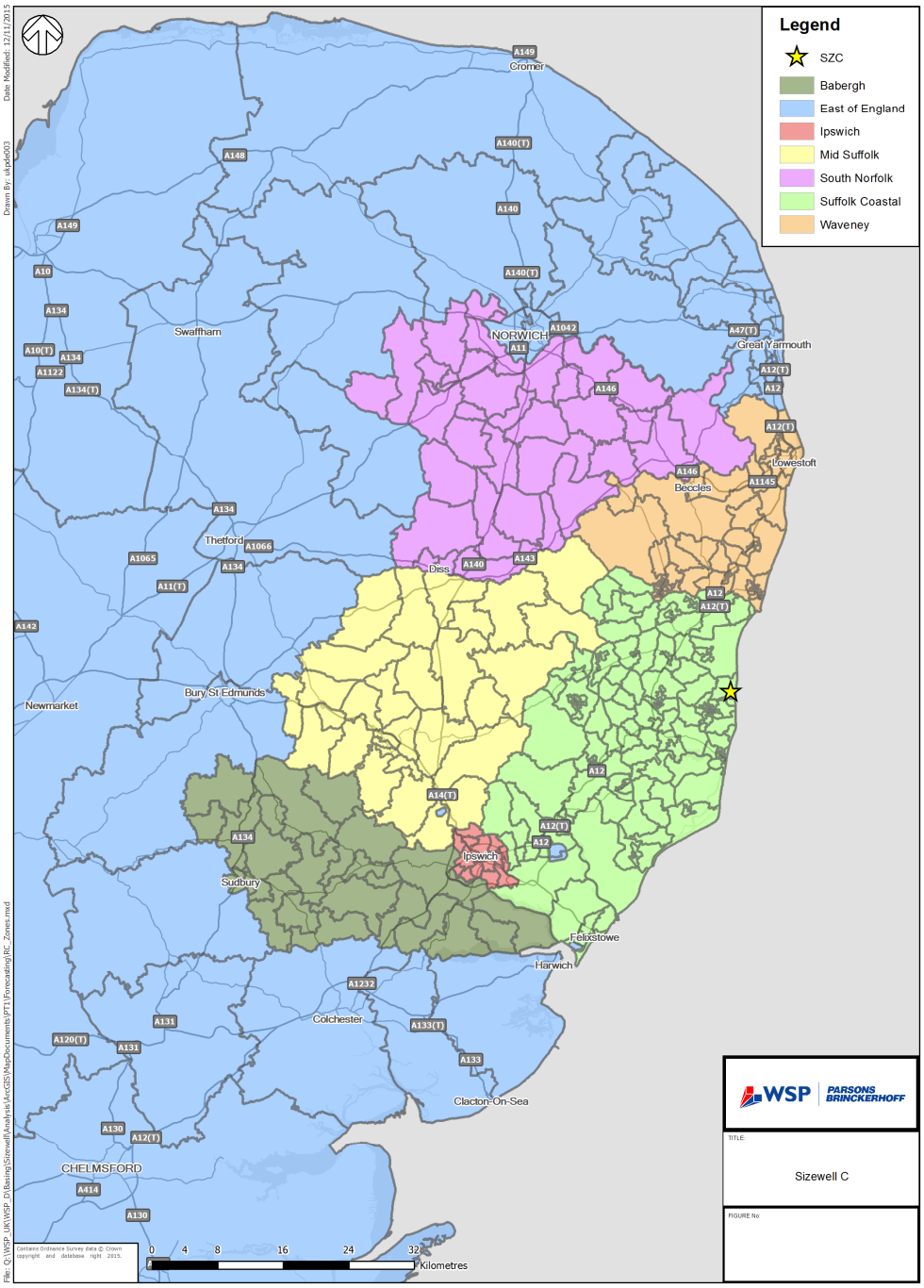
TEMPro ZONE	TEMPro PLANNING ASSUMPTIONS					
	2015		2023 UNADJUSTED		2023 ADJUSTED	
	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS
Babergh	39,374	39,231	41,906	41,148	**41,276**	**41,148**
Ipswich	59,336	78,287	65,156	82,252	**64,116**	**80,699**
Suffolk Coastal	56,191	59,162	60,916	61,943	**59,793**	**61,262**
Waveney	52,639	49,225	56,109	51,762	**55,259**	**51,762**

Table 51 – Adjusted TEMPro growth

TEMPro ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.0704	1.0745	1.1013	1.1010	1.0743	1.0717
Babergh	0.9958	1.0501	1.0663	1.0630	1.0414	1.0069
Ipswich	1.0548	1.0416	1.0782	1.0791	1.0435	1.0506
Mid Suffolk	1.0059	1.0480	1.0704	1.0672	1.0425	1.0156
South Norfolk	1.0841	1.0636	1.1107	1.1115	1.0712	1.0837
Suffolk Coastal	1.0113	1.0412	1.0684	1.0666	1.0399	1.0213
Waveney	1.0244	1.0584	1.0767	1.0752	1.0524	1.0298

4.6 Figure 2 shows the geographical areas to which the adjusted TEMPro growth was applied.

Figure 2 – TEMPro growth geographical areas



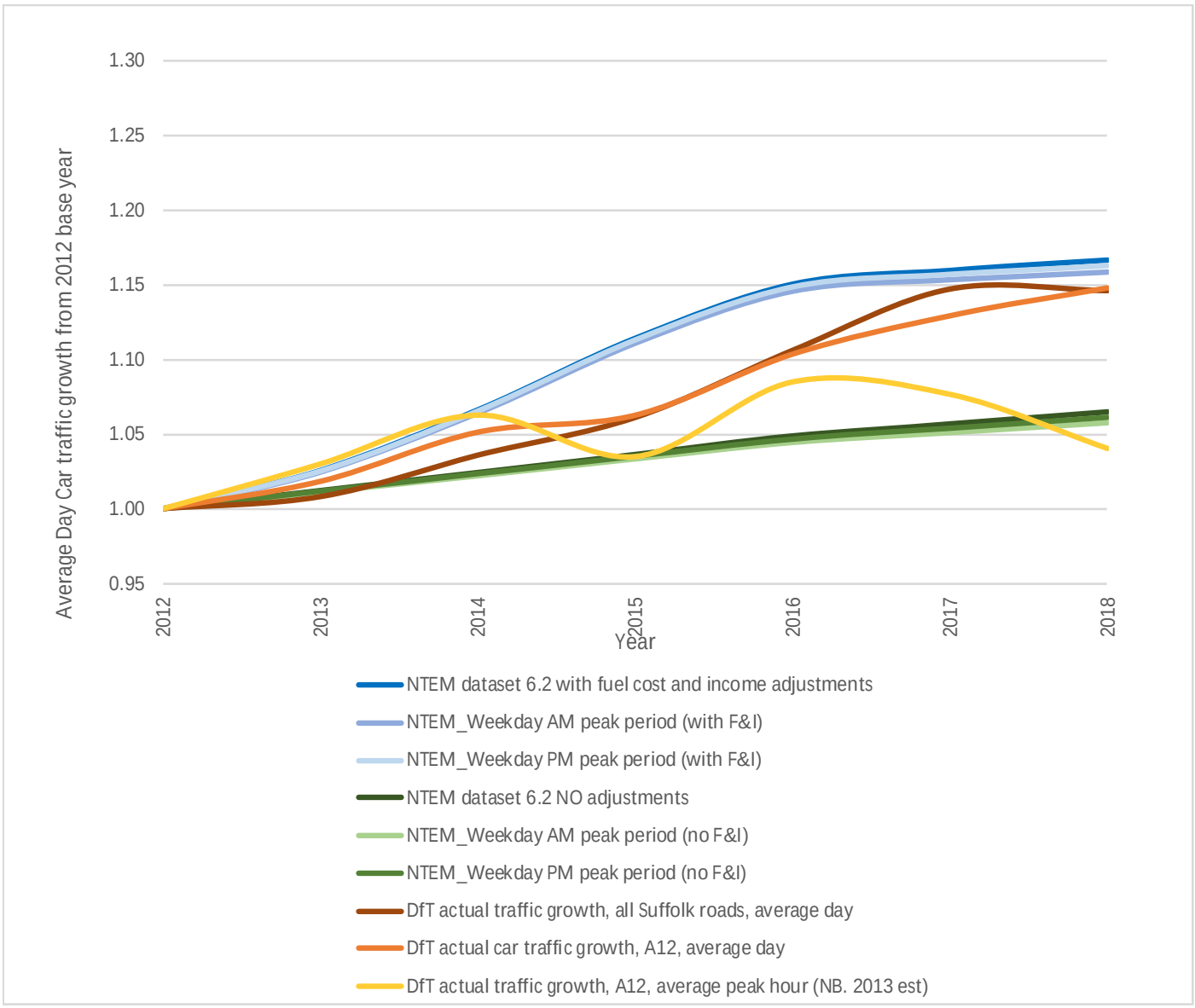
TEMPro Constraint

4.7 The matrix has been constrained to the level of TEMPro growth as set out in Table 51.

4.8 Analysis of historic traffic growth on the A12 and other roads in Suffolk has been undertaken for the period 2012-2018, which demonstrates, as shown in Figure 3, that actual traffic growth was similar or lower than the

forecast TEMPro growth, with application of fuel and income factors, across that period. NTEM dataset 6.2 was used for the comparison, as this would have been the basis for forecasting in 2012.

Figure 3 – Traffic Growth 2012 - 2018



Fuel and income adjustment factors

4.9 As the model being used is "highway only" the forecast demand matrices are uplifted by fuel and income adjustment factors. These represent a combination of factors that result in car travel becoming less expensive over time relative to present day costs and alternative modes, as set out in TAG Unit M4.7. The factors that have been calculated are presented in Table 52.

4.10 The fuel and income factors have been applied post-constraint, but only to those elements of the matrix that do not include the committed developments.

Table 52 – Fuel and income adjustment factors

YEAR	FUEL COST	INCOME	COMBINED
2023	1.0354	1.0101	1.0459

Other user classes

4.11 Information obtained from TEMPro provides forecast growth assumptions for car user classes. Growth factors for other user classes have been obtained from the Regional Traffic Forecasts 2018 (RTF18) published by the DfT. Growth rates for the 'East of England' region have been derived from the 'LGV miles' values from RTF18 for the years 2015 and 2023 to provide growth factors which are applied equally across all time periods.

4.12 The LGV and HGV growth factors are shown in Table 53.

Table 53 – Non-car growth factors

VEHICLE CLASS	2015 TO 2023
LGV	**1.1282**
HGV	**1.0250**

Generalised cost parameters

4.13 Generalised costs have been calculated for the 2023 forecast year using values of time, GDP growth rates, purpose splits, and vehicle operating costs recommended by the DfT for use in economic appraisals of transport projects in England. These values are consistent with the latest guidance (November 2014) contained within TAG Unit A1.3 and in the TAG Databook November 2014[2] release.

4.14 The generalised cost coefficients for input to VISUM, of time (pence per second x 100) and distance pence per metre x 100) for each vehicle class, are shown in Table 54.

4.15 It should be noted that the value of time for HGV has been doubled from the TAG guidance value (2010 perceived cost) to represent a more realistic generalised cost for this vehicle class, as recommended in TAG Unit M3.1 section 2. This adjustment was also applied in the 2015 base modelling.

Table 54 – Generalised cost parameters (input to VISUM)

VEHICLE CLASS	TIME (PENCE PER SECOND X 100)			DISTANCE (PENCE PER METRE X 100)		
	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)
2015						
Car	37.7136	41.3721	35.0955	1.0406	1.0420	1.0374
LGV	40.9974	40.9974	40.9974	1.5610	1.5610	1.5610
HGV	84.2904	84.2904	84.2904	3.9146	3.9146	3.9146
2023						
Car	43.4480	47.5303	40.4179	0.9468	0.9486	0.9436
LGV	47.7016	47.7016	47.7016	1.4958	1.4958	1.4958
HGV	98.0740	98.0740	98.0740	4.1470	4.1470	4.1470

[2] Consistent with the validated 2015 Base Model

5.0 OVERALL MATRIX DEVELOPMENT PROCESS

Car

5.1 Alternative planning assumptions have been applied in TEMPro, taking account of the housing and employment proposals for development 1 to development 7, and 9 to 14, in Table 1. These provide adjusted 'Car' background growth factors from 2015 to 2023. Note that no information is available on specific employment forecasts as part of the Felixstowe Port expansion, so this is included in background growth.

5.2 Since different growth factors exist for different districts, it was necessary to 'furness' the validated 2015 base matrices to the individual origin and destination growth factors for each individual zone. This process adjusts the value of each origin-destination trip pair within the matrix, so that the correct growth factor for each zone origin and destination is achieved.

5.3 .The TEMPro constraining factors were applied to the base matrix to provide the overall level of growth. This was used to calculate scaling factors, revised factors that are applied to the base matrix but ensure that a scaled matrix and development trips match the size of the TEMPro constrained matrix.

5.4 Fuel cost and income adjustment factors were subsequently applied, only to the scaled matrix (i.e. excluding committed development trips). The committed development trips were added to each modelled hour matrix, by applying the distribution of the relevant 'similar zone(s)' (shown in Table 45) to the net vehicle trip totals for each development.

5.5 The total committed development Car trips are summarised in Table 55, whilst overall Reference Case trip totals, including constrained background growth and committed development trips, are shown in Table 56.

LGV and HGV

5.6 Goods vehicle growth factors are consistent across the study area. Therefore, the 2015 validated base matrices for these vehicle classes were simply factored by the values shown in Table 53 to produce 2023 matrices.

5.7 Additional HGV trips were added to the 2023 matrices to reflect the Felixstowe Port expansion as shown in Table 29.

5.8 The total committed development HGV trips are summarised in Table 55, whilst the overall Reference Case LGV and HGV trip totals are shown in Table 56.

Table 55 – Total Committed Development Trips

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Adastral Park	0	38	72	85	86	97	84
Martlesham	0	56	107	97	100	112	99
Ipswich Garden Suburb	0	158	303	224	242	274	226
Clickett Hill	0	52	37	68	56	39	24
Trinity Park	0	91	170	142	146	164	143
Futura Park	124	201	422	383	417	418	273
Brooke Peninsula	0	737	521	466	391	482	375
Belstead House	0	38	72	75	77	87	76
Wolsey Grange	76	232	488	597	577	728	719
Woods Meadow	0	67	125	126	129	146	126
Fairfield Road	0	60	112	103	105	119	102

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Mount Pleasant	0	32	61	47	48	54	48
Saxmundham (resi)	0	125	236	174	180	200	178
Saxmundham (emp)	0	46	107	40	65	83	36
Total Cars	**200**	**1,933**	**2,833**	**2,627**	**2,621**	**3,002**	**2,511**
Felixstowe Port Expansion	68	81	73	111	107	91	70
Total HGVs	**68**	**81**	**73**	**111**	**107**	**91**	**70**

Table 56 – Total 2023 Reference Case Trips

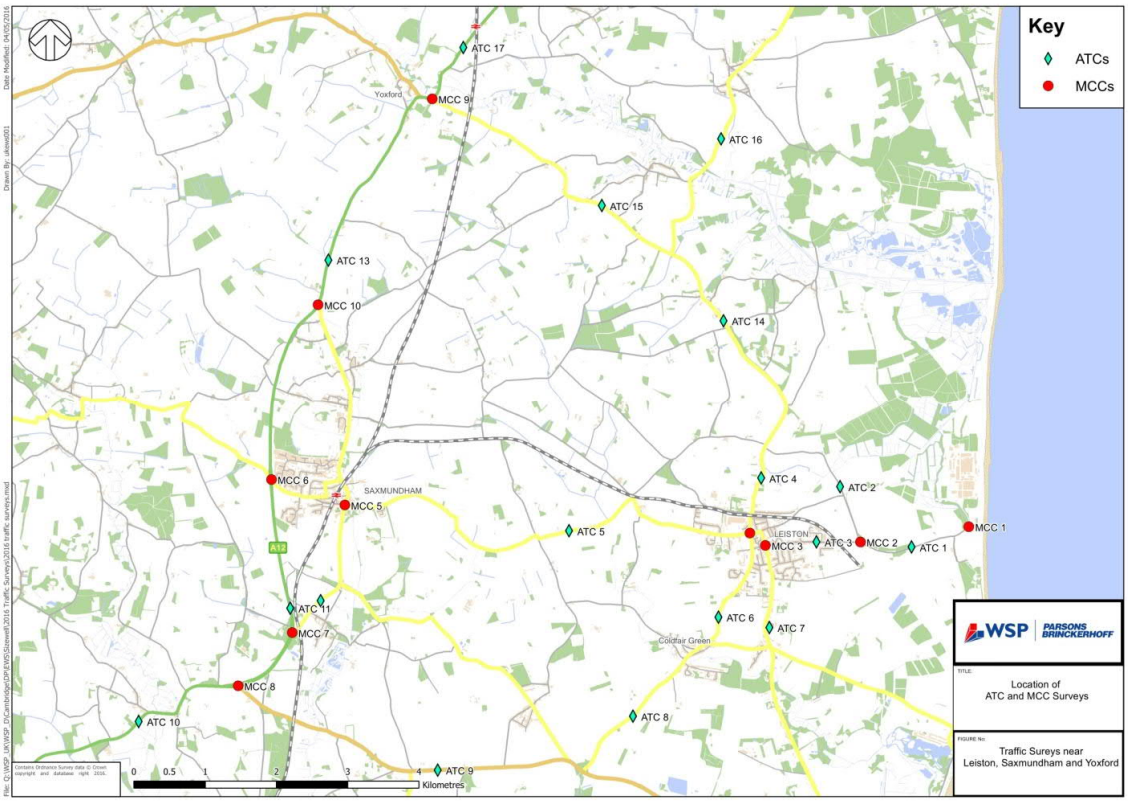
HOUR	2015 BASE YEAR	2023 BACKGROUND TRAFFIC	2023 COMMITTED DEVELOPMENT	2023 UNCONSTRAINED TOTAL	2023 CONSTRAINED TOTAL	2023 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH
CAR							
06:00-07:00	16,789	17,546	200	17,746	17,708	**18,511**	**10%**
07:00-08:00	39,155	40,907	1,933	42,840	41,290	**43,096**	**10%**
08:00-09:00	53,300	55,629	2,833	58,462	56,172	**58,620**	**10%**
15:00-16:00	49,865	53,761	2,627	56,388	54,309	**59,367**	**19%**
16:00-17:00	48,564	50,822	2,621	53,442	51,300	**53,534**	**10%**
17:00-18:00	50,946	53,288	3,002	56,290	53,800	**56,131**	**10%**
18:00-19:00	38,943	40,747	2,511	43,258	41,135	**42,907**	**10%**
LGV							
06:00-07:00	1,741	1,964	-	1,964	1,964	**1,964**	**13%**
07:00-08:00	3,785	4,270	-	4,270	4,270	**4,270**	**13%**
08:00-09:00	3,727	4,204	-	4,204	4,204	**4,204**	**13%**
15:00-16:00	3,062	3,454	-	3,454	3,454	**3,454**	**13%**
16:00-17:00	3,712	4,188	-	4,188	4,188	**4,188**	**13%**
17:00-18:00	2,771	3,126	-	3,126	3,126	**3,126**	**13%**
18:00-19:00	1,930	2,177	-	2,177	2,177	**2,177**	**13%**
HGV							
06:00-07:00	1,808	1,853	68	1,922	1,922	**1,922**	**6%**
07:00-08:00	2,456	2,517	81	2,598	2,598	**2,598**	**6%**
08:00-09:00	2,747	2,816	73	2,889	2,889	**2,889**	**5%**
15:00-16:00	2,744	2,812	111	2,923	2,923	**2,923**	**7%**
16:00-17:00	2,232	2,287	107	2,395	2,395	**2,395**	**7%**
17:00-18:00	1,623	1,663	91	1,754	1,754	**1,754**	**8%**
18:00-19:00	1,173	1,202	70	1,272	1,272	**1,272**	**8%**
TOTAL VEHICLES							
06:00-07:00	20,338	21,364	268	21,632	21,594	**22,397**	**10%**
07:00-08:00	45,395	47,693	2,015	49,708	48,158	**49,964**	**10%**
08:00-09:00	59,775	62,649	2,906	65,555	63,266	**65,713**	**10%**
15:00-16:00	55,670	60,027	2,738	62,765	60,686	**65,745**	**18%**
16:00-17:00	54,508	57,297	2,728	60,025	57,883	**60,116**	**10%**
17:00-18:00	55,339	58,077	3,093	61,170	58,680	**61,011**	**10%**
18:00-19:00	42,046	44,127	2,580	46,707	44,584	**46,356**	**10%**

6 SIZEWELL B OUTAGE

6.1 As mentioned in section 1.0, the operation of Sizewell B (SZB), and the trips it generates, could have an impact on traffic flows and operation of junctions across the modelled area. An 'outage' is performed periodically at Sizewell B, approximately every 18 months and lasting approximately 6 weeks, during which periods traffic flows generated by the site are higher than usual. It was considered prudent to include the 'SZB outage' in any future year modelling so that robust traffic flows are reflected in each scenario.

6.2 In Spring 2016 a series of traffic surveys was undertaken during 17-18 May when there was a SZB outage and during 21-22 June when there was no SZB outage. The traffic surveys consisted of Manual Classified Counts (MCCs) and Automatic Traffic Counts (ATCs) at a series of sites across the area shown in Figure 3.

Figure 3 – SZB Outage Survey Sites



Analysis of survey data

6.3 The Spring 2016 MCC and ATC data was first processed by averaging the two days of data for each period (17-18 May 2016 'With Outage', and 21-22 June 2016 'No Outage'). The MCC turning flows and ATC link flows were then displayed on a diagram of the surveyed area, for each of the seven modelled hours and for each vehicle class (Car, LGV, HGV) separately.

6.4 For each hour and vehicle class, a new diagram was then created showing the difference between 'With Outage' and 'No Outage' traffic counts.

6.5 Review of these diagrams indicated that, due to daily fluctuations in traffic flows, clear patterns of the distribution of additional trips during the 'With Outage' period could not be established based on all of the survey data. Instead, a selection of key ATC locations was used from which a logical distribution of trips could be ascertained.

6.6 The ATCs selected for consideration enabled us to derive a distribution of trips between SZB (ATC 1) and the following six areas:

- A12 North – ATC 15
- B1125 – ATC 16
- B1119 – ATC 5
- A12 South – ATC 8, 9
- Aldeburgh – ATC 6, 7, 8
- Leiston – ATC 2, 6, 7

6.7 Analysis of the difference in ATC total vehicle volumes, between 'With Outage' and 'No Outage' scenarios, at the above six sites along with the ATC on Sizewell Gap immediately west of the SZB access road, resulted in a distribution of trips as shown in Table 57. The equivalent percentages are shown in Table 58.

Table 57 – Routing from 2016 ATC comparison, Hourly, Total Vehicles

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	99	28	1	38	1	8	8	2	0	0	19	27	55	70
B1125	102	29	5	31	0	6	0	2	0	0	4	27	12	71
B1119	49	18	1	28	0	6	1	1	0	0	19	17	55	44
A12 S	99	5	7	38	1	8	8	1	9	0	13	20	38	51
Aldeburgh	80	18	0	41	0	8	0	1	0	7	9	19	26	50
Leiston	91	40	0	8	0	2	4	6	0	0	4	36	11	97
Total	**521**	**137**	**14**	**184**	**2**	**38**	**21**	**12**	**9**	**7**	**67**	**145**	**197**	**382**

Table 58 – Routing from 2016 ATC comparison, Hourly, Percentage

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	19%	20%	10%	21%	38%	21%	37%	13%	0%	0%	28%	18%	28%	18%
B1125	20%	21%	35%	17%	13%	17%	1%	14%	0%	0%	6%	19%	6%	18%
B1119	9%	13%	5%	15%	12%	16%	4%	5%	0%	0%	28%	12%	28%	12%
A12 S	19%	4%	50%	21%	38%	21%	40%	7%	100%	0%	19%	14%	19%	13%
Aldeburgh	15%	13%	0%	22%	0%	21%	0%	7%	0%	100%	13%	13%	13%	13%
Leiston	17%	29%	0%	4%	0%	5%	17%	54%	0%	0%	6%	25%	6%	25%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

6.8 In order to calculate the distribution of trips at zone level, beyond these six locations, flow bundles of the 2023 Reference Case traffic were carried out to provide the zonal split.

6.9 A comparison was also undertaken between the six-area distribution derived from the flow bundles of Reference Case traffic and the Spring 2016 ATC analysis. Table 59 presents the comparison between the distribution calculated from the ATCs, summed across all seven hours, and that derived from the Reference Case traffic flow bundles.

Table 59 – Proportional Distribution, Total Seven Hours

AREA	TOTAL TRAFFIC VOLUMES				PROPORTIONAL SPLIT			
	2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES		2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	183	171	637	552	22%	19%	20%	20%
B1125	124	165	263	204	15%	18%	8%	7%
B1119	124	114	324	290	15%	13%	10%	10%
A12 S	176	123	1,019	848	21%	14%	32%	31%
Aldeburgh	115	143	847	761	14%	16%	26%	28%
Leiston	110	188	141	106	13%	21%	4%	4%
Total	**833**	**905**	**3,230**	**2,760**	**100%**	**100%**	**100%**	**100%**

6.10 Upon review of this analysis it was considered more reliable to use the proportional split of Reference Case bundles, shown in the last two columns of Table 59, to inform the full distribution of the SZB outage trips, evidentially supported by the Spring 2016 ATC survey data volumes.

6.11 The detailed calculations of the SZB outage traffic flows are now discussed.

Calculation of traffic inputs

6.12 The proportional splits of SZB Outage traffic flows are shown in Table 60.

Table 60 – Distributional Split of Reference Case Traffic

AREA	TOTAL 7 HOURS	
	TOWARDS SZB	AWAY FROM SZB
A12 N	20%	20%
B1125	8%	7%
B1119	10%	10%
A12 S	32%	31%
Aldeburgh	26%	28%
Leiston	4%	4%
Total	**100%**	**100%**

6.13 The hourly volumes of outage traffic, to and from SZB, are shown in Table 61 to Table 63 for Cars, LGVs and HGVs respectively. Numbers are rounded.

Table 61 – SZB Outage Trips – Car

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	93	26	0	35	0	7	3	0	1	0	12	27	36	70
B1125	38	9	0	13	0	3	1	0	0	0	5	10	15	26
B1119	47	13	0	18	0	4	1	0	1	0	6	14	18	37
A12 S	148	39	0	53	0	12	4	0	1	0	20	42	58	108
Aldeburgh	124	35	0	48	0	10	3	0	1	0	17	38	48	96
Leiston	21	5	0	7	0	1	1	0	0	0	3	5	8	13
Total	**471**	**127**	**0**	**174**	**0**	**37**	**13**	**0**	**4**	**0**	**63**	**136**	**183**	**350**
Two-way	**598**		**174**		**37**		**13**		**4**		**199**		**534**	

Table 62 – SZB Outage Trips – LGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	10	2	2	2	0	0	2	2	1	1	1	2	2	6
B1125	4	1	1	1	0	0	1	1	0	1	0	1	1	2
B1119	5	1	1	1	0	0	1	1	1	1	1	1	1	3
A12 S	16	3	3	3	1	0	2	4	2	2	1	2	4	10
Aldeburgh	13	3	3	3	0	0	2	3	1	2	1	2	3	9
Leiston	2	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**50**	**10**	**10**	**10**	**1**	**0**	**8**	**11**	**5**	**7**	**4**	**8**	**12**	**31**
Two-way	**60**		**20**		**1**		**19**		**11**		**13**		**43**	

Table 63 – SZB Outage Trips – HGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	0	0	1	0	0	0	0	0	0	0	0	0	0	0
B1125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B1119	0	0	1	0	0	0	0	0	0	0	0	0	0	0
A12 S	1	0	1	0	1	0	1	0	1	0	0	0	1	1
Aldeburgh	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Leiston	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**4**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**
Two-way	**1**		**4**		**1**		**1**		**1**		**1**		**2**	

6.14 The zonal distribution of these trips was derived from the 2023 Reference Case traffic flow.

The above SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models.

7 SUMMARY TRIPS

7.1 The SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models. The final Reference Case matrix totals are shown in Table 64.

Table 64 – Total 2023 Reference Case Trips, including SZB Outage

HOUR	2015 BASE YEAR	2023 BACKGROUND TRAFFIC	2023 COMMITTED DEVELOPMENT	2023 UNCONSTRAINED TOTAL	2023 CONSTRAINED TOTAL	2023 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH	SZB OUTAGE	FINAL 2023 REFERENCE CASE TOTAL
CAR									
06:00-07:00	16,789	17,546	200	17,746	17,708	**18,511**	**10%**	598	**19,109**
07:00-08:00	39,155	40,907	1,933	42,840	41,290	**43,096**	**10%**	174	**43,270**
08:00-09:00	53,300	55,629	2,833	58,462	56,172	**58,620**	**10%**	37	**58,657**
15:00-16:00	49,865	53,761	2,627	56,388	54,309	**59,367**	**19%**	13	**59,380**
16:00-17:00	48,564	50,822	2,621	53,442	51,300	**53,534**	**10%**	4	**53,538**
17:00-18:00	50,946	53,288	3,002	56,290	53,800	**56,131**	**10%**	199	**56,330**
18:00-19:00	38,943	40,747	2,511	43,258	41,135	**42,907**	**10%**	534	**43,441**
LGV									
06:00-07:00	1,741	1,964	-	1,964	1,964	**1,964**	**13%**	60	**2,024**
07:00-08:00	3,785	4,270	-	4,270	4,270	**4,270**	**13%**	20	**4,290**
08:00-09:00	3,727	4,204	-	4,204	4,204	**4,204**	**13%**	1	**4,205**
15:00-16:00	3,062	3,454	-	3,454	3,454	**3,454**	**13%**	19	**3,473**
16:00-17:00	3,712	4,188	-	4,188	4,188	**4,188**	**13%**	11	**4,199**
17:00-18:00	2,771	3,126	-	3,126	3,126	**3,126**	**13%**	13	**3,139**
18:00-19:00	1,930	2,177	-	2,177	2,177	**2,177**	**13%**	43	**2,220**
HGV									
06:00-07:00	1,808	1,853	68	1,922	1,922	**1,922**	**6%**	1	**1,923**
07:00-08:00	2,456	2,517	81	2,598	2,598	**2,598**	**6%**	4	**2,602**
08:00-09:00	2,747	2,816	73	2,889	2,889	**2,889**	**5%**	1	**2,890**
15:00-16:00	2,744	2,812	111	2,923	2,923	**2,923**	**7%**	1	**2,924**
16:00-17:00	2,232	2,287	107	2,395	2,395	**2,395**	**7%**	1	**2,396**
17:00-18:00	1,623	1,663	91	1,754	1,754	**1,754**	**8%**	1	**1,755**
18:00-19:00	1,173	1,202	70	1,272	1,272	**1,272**	**8%**	2	**1,274**
TOTAL VEHICLES									
06:00-07:00	20,338	21,364	268	21,632	21,594	**22,397**	**10%**	659	**23,056**
07:00-08:00	45,395	47,693	2,015	49,708	48,158	**49,964**	**10%**	198	**50,162**
08:00-09:00	59,775	62,649	2,906	65,555	63,266	**65,713**	**10%**	40	**65,753**
15:00-16:00	55,670	60,027	2,738	62,765	60,686	**65,745**	**18%**	33	**65,778**
16:00-17:00	54,508	57,297	2,728	60,025	57,883	**60,116**	**10%**	16	**60,132**
17:00-18:00	55,339	58,077	3,093	61,170	58,680	**61,011**	**10%**	212	**61,223**
18:00-19:00	42,046	44,127	2,580	46,707	44,584	**46,356**	**10%**	579	**46,935**

8 OTHER INFRASTRUCTURE

Beccles Relief Road

8.1 The Beccles Relief Road has now been built and is therefore included in the 2023 Reference Case model.

8.2 The new road joins the A145 London Road south of Beccles with Ellough Road, to the north of Ellough Industrial Estate. New roundabout junctions connect the Relief Road with the existing highway network at either end.

Lake Lothing Third Crossing, Lowestoft

8.3 A planning application was submitted in 2018 for the Lake Lothing Third Crossing in Lowestoft, which underwent an Examination In Public (EIP) in Spring 2019.

8.4 The latest timeline according to SCC's website is that, subject to planning application approval, construction could start in 2020 and would take two to three years to build. It was agreed with SCC that, for robustness, the new crossing would not be included in the 2023 Reference Case scenario.

Upper Orwell Crossing, Ipswich

8.5 The proposed 'Upper Orwell Crossing' in Ipswich was previously included in the 2027 Reference Case which provided the basis for assessment at Stage 3.

8.6 However the scheme has been shelved and therefore has been removed from all Sizewell C future year models.

TECHNICAL NOTE: SIZEWELL C VISUM TRAFFIC MODEL

DATE:	16 January 2020	**CONFIDENTIALITY:**	Public
SUBJECT:	2028 Reference Case Assumptions		
PROJECT:	50400326	**AUTHOR:**	Sally Powell
CHECKED:	Daniel Tarry / Stephanie Biggs	**APPROVED:**	Nick Cottman

1.0 INTRODUCTION

1.1. WSP was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

1.2. The models will be used to identify the location where mitigation schemes may be required to address the impacts of development traffic and demonstrate the effect of those schemes on traffic volumes. The outputs of the VISUM modelling will be incorporated into smaller scale operational models, the Transport Assessment and provide inputs to environmental analysis.

1.3. Base year VISUM transport models have been developed, to represent seven separate hourly periods as follows:

- 06:00-07:00
- 07:00-08:00
- 08:00-09:00
- 15:00-16:00
- 16:00-17:00
- 17:00-18:00
- 18:00-19:00

1.4. In the development of the base year transport models, Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 models have been calibrated and validated, using observed traffic data collected across the study area between March and June 2015, based on the criteria set out in TAG Unit M3.1 Highway Assignment Modelling.

1.5. The 2015 Base models have been used to develop a forecast year highway network and demand, representative of the likely traffic conditions in the 'peak construction' year which is currently expected to be 2028. These 'Reference Case' models include 'committed' developments, as agreed with Suffolk County Council (SCC), and background traffic growth. In addition, all future year scenarios have been modelled including traffic flows generated by an outage at Sizewell B, which is performed periodically (approximately every 18 months and lasting approximately 6 weeks), so that robust traffic flows are reflected in each scenario.

1.6. The 2028 Reference Case models will subsequently be used to assess the addition of SZC construction traffic.

1.7. Previous work has focussed on a peak construction year of 2024, subsequently 2025 and, for Stage 3 consultation, 2027. However the timescales have been revised to provide a more robust basis for assessment.

1.8. A review of traffic growth across Suffolk roads in comparison with forecast growth factors obtained from the DfT's TEMPro software, for the period 2012 to 2018, has been undertaken and presented in section 4 of this technical note for the purposes of demonstrating the reasoning for constraining overall growth to TEMPro. This analysis also provides confidence that the base year of 2015 is a valid basis for forecasting across a long-term timescale. Although traffic growth may fluctuate in reality more than predicted by a TEMPro forecast, in the long-term the actual growth is shown to be broadly in line with that forecasted, so that it can be inferred that the 2015 base model would provide a robust representation of forecast year traffic volumes.

1.9. This document details the methodology applied to develop the 2028 Reference Case models traffic demand and highway network improvements.

2.0 COMMITTED DEVELOPMENT

2.1 Forecast year traffic demand is estimated using one of two methods:

- Specific trip generation and distribution, for committed developments
- Background traffic growth (applied across the model), for other developments and socio-economic factors such as changes in car ownership.

2.2 Although not all developments have been granted planning permission at this stage, the following developments shown in Table 1 are considered by SCC to be 'committed' for the purpose of including them explicitly within the Reference Case models.

Table 1 – Committed Developments

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2028
1	Adastral Park	Suffolk Coastal District Council	60,200m^2 (B1) 2,000 homes (C3) 180 bed hotel (C1) mixed use local centre (1.82ha) – health care provision (D1), community Centre (D1), retail (A1), Café (A3), Public house (A4), Takeaway (A5) Two form entry primary school (D1) expansion of university (2.3ha) (D1)	Partial: approximately 725 homes (25 by 2021, 100 annually thereafter), and 315 jobs
2	Uniserve, Clickett Hill	Suffolk Coastal District Council	B8 distribution facility – 46,575m^2 (warehouse), 990m^2 (office)	100%
3	Martlesham	Suffolk Coastal District Council	180 homes (38 dwellings occupied at June 2015, 142 remaining)	100%
4	Ipswich Garden Suburb (North Ipswich)	Ipswich Borough Council	<u>Four areas:</u> Fonnereau Village Henley Village Red House Village Ipswich School site 3,500 dwellings District Centre – up to 2,000m^2 convenience retail, up to 1,220m^2 comparison retail, up to 1,320m^2 services including A1 to A5, health centre, library, police office, community centre	Partial: approximately 1,960 dwellings plus 2,000sqm retail) as agreed with SCC

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2028
			Two Local Centres – up to 500m^2 convenience retail, up to 600m^2 comparison retail, up to 500m^2 services including A1 to A5	
			Secondary school	
			Three primary schools	
			Public open space and a country park	
5	Trinity Park	Ipswich Borough Council	300 homes	100%
6	Futura Park	Ipswich Borough Council	Phase 1 – 10,008m^2 (A1 – Food Retail), 6,186m^2 (A1 – Non-Food Retail)	100%
			Phase 2 – 10,350^2 (B1), 4,050m^2 (B2), 31,680m^2 (B8)	
7	Brooke Peninsula, Lowestoft	Waveney District Council	850 homes	100%
8	Felixstowe Port	Suffolk Coastal District Council	Further 1,650 HGV movements per day by 2023	100%
9	Belstead House	Babergh	155 homes	100%
10	Wolsey Grange	Babergh	475 homes	100%
			Primary school (210 pupils)	
			Leisure park	
11	Woods Meadow	Suffolk Coastal District Council	180 homes	100%
12	Fairfield Road, Framlingham	Suffolk Coastal District Council	163 homes	100%
13	Mount Pleasant, Framlingham	Suffolk Coastal District Council	95 homes	100%
14	Saxmundham HSA	Suffolk Coastal District Council	800 homes	Partial: approximately 550 homes and 435 jobs
			559 jobs	

2.3 For the developments shown in Table 1, the proposed trip generation has been derived from their respective Transport Assessments. Each individual development is now discussed in more detail.

2.4 The calculation of traffic generated by 'Sizewell B Outage', which is included in all forecast year scenarios, is described in section 6.0.

Adastral Park

2.5 Adastral Park is located immediately to the east of the A12, 8.5km north of the centre of Ipswich, and the proposal for the site is for a mixed-use development as detailed in Table 1. The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C 'peak construction' phase:

- Approximately 725 homes by 2028, of 2,000 homes at completion
- Approximately 315 jobs by 2028, of 2,000 jobs at completion

2.6 The net trip generation for the full development is set out in Table 2 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 2 – Adastral Park peak hour Car trips (full development)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	50[1]	579	560	302
Primary School	14	0	0	0
Commuting	202	10	8	160
Service	43	4	3	25
Visitors	13	11	11	13
Hotel	26	33	31	24
Postgraduate Research	45	7	3	32
Overall Traffic Generation	**393**	**644**	**616**	**556**

Source: Table 28 within the 'Adastral Park' Transport Assessment (April 2009)

2.7 The residential and primary school trips were factored by 725 / 2,000 homes, whilst all other trip purposes were factored by 315 / 2,000 jobs to, provide 2028 trip generation as shown in Table 3.

Table 3 – Adastral Park peak hour Car trips (2028)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential trips	18	210	203	109
Primary school trips	5	0	0	0
All other trips	52	10	9	40
Overall Traffic Generation	**75**	**220**	**212**	**149**

2.8 Trip rates for other hours were taken from Appendix 14 of the TA for residential and primary school trips, and from the Wolsey Grange development TA for all other trips, which for the purposes of calculating ratios are classed as employment trips. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00

[1] Trip volumes in Table 2 were taken from Table 28 of the Transport Assessment (Adastral Park Transport Assessment, April 2009), which had been adjusted to take account of double counting from the original residential trip volumes in Table 19 of the Transport Assessment.

– 07:00-08:00 / 08:00-09:00
– 15:00-16:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
– 16:00-17:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
– 18:00-19:00 / 17:00-18:00 (08:00-09:00 for primary school trips)

2.9 The resulting ratios are presented in Table 4 and ii

Table 4 – Adastral Park trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.09	0.35	0.17	0.64	**0**	**0**	**0.51**	**0.54**
Primary school	0.00	0.00	0.02	0.01	0.39	0.28	**0**	**0**	**0.04**	**0.02**
Employment	0.00	0.00	0.59	0.12	1.43	0.25	**0**	**0**	**0.41**	**0.49**

Table 5 – Adastral Park trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.45	0.28	0.45	0.31	0.40	0.34	0.54	0.31	**0.84**	**0.91**	**0.83**	**0.99**	**0.75**	**1.09**
Employment	0.22	0.40	0.22	0.81	0.10	0.47	0.18	1.14	**1.24**	**0.35**	**1.22**	**0.71**	**0.59**	**0.41**
NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		08:00-09:00 (AM PEAK)		**RATIO (3-4PM / 8-9AM)**		**RATIO (4-5PM / 8-9AM)**		**RATIO (6-7PM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Primary school	0.26	0.31	0.03	0.05	0.00	0.00	0.39	0.28	**0.66**	**1.10**	**0.08**	**0.19**	**0**	**0**

2.10 These ratios, once applied to the relevant trip volumes shown in Table 3, yielded trip volumes for the modelled hours presented in Table 6.

Table 6 – Adastral Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	Arr	Dep	Arr	Dep	Arr	Dep
Residential	0	0	9	114	18	210	171	99	169	109	203	109	152	119
Primary school	0	0	0	0	5	0	3	0	0	0	0	0	0	0
All other trips	0	0	21	5	52	10	11	14	11	28	9	40	5	16

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	Arr	Dep	Arr	Dep	Arr	Dep
Overall Traffic Generation	**0**	**0**	**31**	**119**	**75**	**220**	**185**	**114**	**180**	**137**	**212**	**149**	**157**	**136**

2.11 Access to the development will be via:

- Existing modified access
- New highway access from C356 Newbourne Road / Heath Road / Waldringfield Road
- New highway access from A12 north of Foxhall Road

2.12 Other highway improvements designed to mitigate the impact of the development on the surrounding highway network, which were set out in an updated TA (December 2017), include the following:

- Partial signalisation of A12 / Foxhall Road, A12 / Barrack Square, and A12 / Anson Road roundabouts, and the A12 / A14 Seven Hills junction
- Signalisation of Newbourne Road / site access
- New signalised access on the A12 between Foxhall Road and Barrack Square
- Reduction in speed limit (50mph) between signalised A12 / Foxhall Road and A12 / A1214 junctions in accordance with DfT guidance

2.13 For the purposes of the Sizewell C 2028 Reference Case modelling, it is assumed all mitigation except the A12 / Anson Road roundabout will be completed by 2028. This phasing is based on the Section 106 agreement provided by SCC which provides the trigger points for the improvements coming forward in line with housing completion, and the assumed level of build out provided SCC.

2.14 No signal timings were included in the TA for the proposed junction improvements, therefore approximate signal timings were applied in the VISUM models to provide minimal delays to the A12 through movements.

2.15 There is also a bus strategy associated with the development with the existing high quality bus route retained and supplemented by new routes servicing the development and providing a faster, more direct route to and from Ipswich town centre and the railway station along with a new service to Woodbridge. This was not included in the VISUM model as it does not affect the calculations of public transport or private transport demand or the resultant highway assignment, for the Sizewell C assessment.

Martlesham

2.16 The site is located between Main Road on the northern side and Felixstowe Road on the eastern side approximately two miles to the east of Ipswich. The site is surrounded by residential properties on the northern side of Main Road including along the frontage on the eastern side. There is a Tesco superstore on the southern side and the A12 dual carriageway to the west.

2.17 The development comprises 180 houses, and the overall trip generation for the development is set out in Table 7, which is taken from the TA that accompanied the planning application.

Table 7 – Martlesham peak hour Car trips (full 180 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	57	78	85	57
Overall Traffic Generation	**57**	**78**	**85**	**57**

Source: Table 5.2 within the 'Martlesham' Transport Assessment (September 2011)

2.18 The development however is now completed and 38 dwellings were occupied at June 2015, therefore some trips are already included in the 2015 Base model. Trips generated by the remaining 142 dwellings were calculated for inclusion in the Reference Case model, as shown in Table 8.

Table 8 – Martlesham peak hour Car trips (remaining 142 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	45	62	67	45
Overall Traffic Generation	**45**	**62**	**67**	**45**

2.19 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and *Table 5* applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 8. The resulting trips for all seven modelled hours are shown in Table 9.

Table 9 – Martlesham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**23**	**33**	**45**	**62**	**56**	**41**	**56**	**45**	**67**	**45**	**50**	**49**

2.20 Junction improvements associated with the development are as follows:

- Provision of a 7.3m wide access from a new ghost-island right turn junction onto Main Road
- Provision of an emergency access onto Felixstowe Road on the eastern boundary

Ipswich Garden Suburb

2.21 The site is located north of Ipswich in the area bounded by the A1214, Henley Road, Tuddenham Road and Lower Road, and is divided by the B1077 Westerfield Road and the railway line.

2.22 The development is a proposed mixed use including 3,500 dwellings, schools and retail and is spread across four areas:

- Fonnereau Village (Land West of Westerfield Road)
- Henley Village (north of railway line, west of Westerfield Road)
- Red House Village (east of Westerfield Road)
- Ipswich School site

2.23 The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C 'peak construction' phase:

- Approximately 1,960 homes by 2028
- Approximately 92 jobs by 2028 ('food retail' element only)

2.24 The trip generation for the full development, taken from Appendix 10 of the TA which described the S-Paramics micro-simulation assessment of the Ipswich Garden Suburb development, is shown in Table 10 for five of the seven modelled hours.

Table 10 – Ipswich Garden Suburb peak hour Car trips (full development)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential (Phase 1)	7	25	12	50	30	19	35	21	27	19
Residential (Phase 2)	34	126	60	248	149	96	173	105	134	95
Food Retail	30	16	69	49	118	124	124	127	98	119
Non-Food Retail	26	25	32	32	29	36	45	39	33	34
Ipswich School Site (resi)	14	50	24	99	60	38	69	42	54	38
Henley Village (resi)	50	185	88	363	219	141	253	154	197	139
Red House Village (resi)	54	202	96	396	239	154	276	168	215	151
Overall Traffic Generation	**215**	**629**	**381**	**1237**	**844**	**608**	**975**	**656**	**758**	**595**

Source: Tables 9 and 12 within Appendix 10 of the 'Ipswich Garden Suburb' Transport Assessment (June 2014)

2.25 The total residential trips were factored by 1,960 / 3,500 homes and only the 'food' element of retail trips were taken to provide 2028 trip generation for these hours as shown in Table 11.

Table 11 – Ipswich Garden Suburb peak hour Car trips (2028)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	89	329	157	647	390	251	451	274	351	248
Food Retail	30	16	69	49	118	124	124	127	98	119
Overall Traffic Generation	**119**	**345**	**226**	**696**	**508**	**375**	**575**	**401**	**449**	**367**

2.26 To identify the vehicle trips for the remaining two modelled hours, the ratios of trip rates taken from the TRICS database, using the same categories quoted in the development TA, were derived as follows

– 06:00-07:00 / 08:00-09:00

– 15:00-16:00 / 17:00-18:00

2.27 The resulting ratios are presented in Table 12.

Table 12 – Ipswich Garden Suburb trip rate ratios for other hours

NATURE OF TRIPS	06:00-07:00		08:00-09:00 (AM PEAK)		15:00-16:00		17:00-18:00 (PM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (3-4PM / 5-6PM)**	
	ARR	DEP	ARR	DEP			ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.16	0.42	0.27	0.20	0.37	0.21	**0.00**	**0.00**	**0.73**	**0.96**
Food Retail	0.31	0.06	2.55	1.90	4.62	4.86	5.08	5.34	**0.12**	**0.03**	**0.91**	**0.91**

2.28 These ratios, once applied to the relevant trip volumes shown in Table 11, yielded trip volumes for the modelled hours presented in Table 13.

Table 13 – Ipswich Garden Suburb Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	89	329	157	647	329	264	390	251	451	274	351	248
Food Retail	8	1	30	16	69	49	113	116	118	124	124	127	98	119
Overall Traffic Generation	**8**	**1**	**119**	**345**	**226**	**696**	**442**	**379**	**508**	**375**	**575**	**401**	**449**	**367**

2.29 Access to the development will be via a new priority junction on Henley Road, and several new access junctions on Westerfield Road that will be reconfigured in a gyratory layout to accommodate the new accesses.

2.30 Since the Sizewell C VISUM model does not include Henley Road, the signalised junction of Henley Road / A1214 has been coded in the 2028 Reference Case models to serve this side of the development.

2.31 The gyratory system on Westerfield Road, including two two-way roads on the western side and separate access/egress roads on the eastern side, has also been included in the 2028 Reference Case VISUM models.

2.32 The signal timings modelled in VISUM for the new junction with Westerfield Road have been obtained from Appendix 15 of the Transport Assessment. Signal timings for the existing A1214 / Henley Road junction were approximated to provide minimal delays through this section of the network, since the junction was not included in the Sizewell C 2015 Base Model.

2.33 To mitigate the impact of the development on the surrounding highway network the development proposals also include:

- Widening of the A1214 section between Henley Road and the B1077 Westerfield Road
- Widening of approach lanes to A1214 / B1077 roundabout

Uniserve, Clickett Hill

2.34 The Clickett Hill site is located immediately to the west of the A14 Junction 61. The proposals are for a B8 distribution centre comprising a 46,575m^2 warehouse and 990m^2 of office space. Goods will be transferred via HGV containerised delivery from the Port of Felixstowe to the warehouse, then the HGVs will transfer either back to the Port or onward to another destination.

2.35 Whilst the opening year in the Transport Assessment is 2015, in order to provide a robust assessment the development traffic is assumed to be excluded from the 2015 base year VISUM models and therefore is required to be included as committed development in the 2028 Reference Case models.

2.36 The overall trip generation for the development, for all vehicles and HGVs, is set out below in Table 14, which is taken from the TA that accompanied the planning application. Although the 'Inter Peak Hour' for this development is proposed to fall in the period 14:00-15:00, these trip volumes are inferred for the 15:00-16:00 VISUM modelled hour.

Table 14 – Clickett Hill peak hour vehicle trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)		INTER PEAK (15:00-16:00)	
	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0.067	0.031	0.025	0.077	0.072	0.105

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)		INTER PEAK (15:00-16:00)	
	ARR	DEP	ARR	DEP	ARR	DEP
HGV trip rates	0.013	0.008	0.008	0.011	0.018	0.016
Total Vehicle movements	**32**	**15**	**12**	**36**	**34**	**50**

Source: Tables 5.1, 5.2 and 5.3 within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.37 The TRICS data contained within Appendix C of the development TA was used to calculate similar trips for the other four modelled hours, which are shown in Table 15.

Table 15 – Clickett Hill vehicle trips – other hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		16:00-17:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0	0	0.075	0.054	0.056	0.091	0.019	0.045
HGV trip rates	0	0	0.01	0.01	0.018	0.011	0.005	0.008
Total Vehicle movements	**0**	**0**	**36**	**26**	**27**	**43**	**9**	**21**

Source: Appendix C within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.38 As stated in the Transport Assessment (section 5.2), HGV movements to and from the Port are already permitted under the scope of the Port Expansion (discussed later in this technical note). Therefore, for the purposes of including the Clickett Hill development trips within the Sizewell C Reference Case VISUM models, the total vehicle trips shown in Table 14 and Table 15 have been adjusted using the 'HGV' and 'All Vehicle' trip rates to provide an estimate of Car trips only, as shown in Table 16.

Table 16 – Clickett Hill Car trips

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Car trips	**0**	**0**	**31**	**21**	**26**	**11**	**26**	**42**	**18**	**38**	**8**	**31**	**7**	**17**

2.39 Access to the site will be via the existing A14 Junction 61.

Trinity Park

2.40 The site is located between Felixstowe Road and Bucklesham Road in the south-east of Ipswich, to the east of Warren Heath.

2.41 The development comprises 300 homes as a mixture of private and affordable housing, expected to be constructed and occupied by 2017. The overall trip generation for the development is set out below in Table 17, which is taken from the TA that accompanied the planning application.

Table 17 – Trinity Park peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Private Housing	37	92	79	46

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Affordable Housing	12	30	25	14
Overall Traffic Generation	**48**	**122**	**104**	**60**

Source: Table 5.6 within the 'Trinity Park' Transport Assessment (August 2012)

2.42 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 17. The resulting trips for all seven modelled hours are shown in Table 18.

Table 18 – Trinity Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**25**	**66**	**48**	**122**	**88**	**55**	**86**	**60**	**104**	**60**	**78**	**65**

2.43 Access to the site is proposed to be via two new roundabouts on Felixstowe Road, to the east of the existing roundabout, which currently serves the Trinity Park Conference and Events Centre.

Futura Park

2.44 Futura Park is located between the A1189 and Nacton Road, to the south east of Ipswich.

2.45 The development proposals comprise a mix of land uses to be completed in two phases, as described in Table 19. Both phases are due to be completed by 2023, so the full development trips are included in the 2028 Reference Case models.

2.46 The overall trip generation for the development is set out in Table 19, which is taken from the Transport Assessment that accompanied the planning application.

Table 19 – Futura Park gross peak hour person trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	152	75	195	211
	Non-Food Retail	48	17	64	72
2	Non-Food Retail	44	28	94	106
	Office	173	23	25	128
	Industrial	15	3	2	14
	Warehousing	42	26	15	38
Overall Traffic Generation		**474**	**172**	**395**	**569**

Source: Tables 6.3 and 6.6 within the 'Futura Park' Transport Assessment (September 2011)

2.47 These trip volumes represent all modes, therefore mode split factors were applied to calculate car trips. The 'Car' mode shares, obtained from the TA, are 54% for retail trips and 80% for employees. The resulting Car trips are shown in Table 20.

Table 20 – Futura Park gross peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	105	114
	Non-Food Retail	26	9	35	39
2	Non-Food Retail	24	15	51	57
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**225**	**353**

2.48 Finally, an assessment was made within the TA to distinguish 'primary' retail trips (additional to the existing traffic) from 'non-primary' retail trips (an existing retail trip that diverts to the new retail location). The TA states that, in the AM peak all retail trips are assumed to be primary, whilst in the PM peak 60% are assumed to be primary and 40% non-primary.

2.49 Non-primary trips are not included in the VISUM model, since the main part of the trip is assumed to be already modelled. The primary trip volumes are shown in Table 21.

Table 21 – Futura Park net peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	63	68
	Non-Food Retail	26	9	21	23
2	Non-Food Retail	24	15	31	34
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**149**	**269**

2.50 Trip rates for other hours were taken from Appendix 14 of the TA for most land uses, although 'Food Retail' was not provided so these were obtained from the TRICS database. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.51 The resulting ratios are presented in Table 22 and Table 23.

Table 22 – Futura Park trip rate ratios for AM hours

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
		ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	0.31	0.06	1.40	0.86	2.55	1.90	**0.12**	**0.03**	**0.55**	**0.45**
	Non-Food Retail	0.00	0.00	0.00	0.00	0.00	0.00	**0**	**0**	**0**	**0**
2	Non-Food Retail	0.00	0.00	0.28	0.01	0.81	0.56	**0.00**	**0.00**	**0.34**	**0.02**
	Office	0.00	0.00	0.71	0.08	1.56	0.17	**0.00**	**0.00**	**0.46**	**0.46**
	Industrial	0.00	0.00	0.25	0.06	0.26	0.06	**0.00**	**0.00**	**0.96**	**0.94**
	Warehousing	0.27	0.21	0.11	0.07	0.13	0.11	**2.09**	**1.97**	**0.85**	**0.69**

Table 23 – Futura Park trip rate ratios for PM hours

PHASE	NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	4.62	4.86	4.91	4.84	4.52	4.93	5.08	5.34	**0.91**	**0.91**	**0.97**	**0.91**	**0.89**	**0.92**
	Non-Food Retail	2.19	2.49	1.50	2.03	0.77	1.09	1.32	1.47	**1.66**	**1.70**	**1.14**	**1.38**	**0.58**	**0.75**
2	Non-Food Retail	2.22	2.67	2.03	2.19	1.86	1.70	1.68	1.84	**1.32**	**1.45**	**1.21**	**1.19**	**1.11**	**0.92**
	Office	0.21	0.38	0.19	1.00	0.03	0.27	0.19	1.24	**1.09**	**0.31**	**0.96**	**0.81**	**0.16**	**0.22**
	Industrial	0.07	0.10	0.05	0.30	0.05	0.07	0.03	0.21	**2.74**	**0.50**	**1.96**	**1.46**	**1.67**	**0.32**
	Warehousing	0.07	0.10	0.09	0.11	0.05	0.08	0.06	0.15	**1.15**	**0.69**	**1.50**	**0.71**	**0.85**	**0.56**

2.52 These ratios, once applied to the trip volumes shown in Table 21, yielded trip volumes for the modelled hours presented in Table 24.

Table 24 – Futura Park Car trip volumes

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
1	Food Retail	10	1	45	19	82	41	57	62	61	62	63	68	56	63
	Non-Food Retail	0	0	0	0	26	9	35	40	24	32	21	23	12	17
2	Non-Food Retail	0	0	8	0	24	15	40	50	37	41	31	34	34	32
	Office	0	0	63	8	138	18	22	31	19	82	20	102	3	22
	Industrial	0	0	12	2	12	2	5	5	4	16	2	11	3	4
	Warehousing	71	41	29	14	34	21	14	21	18	21	12	30	10	17

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation		**81**	**43**	**157**	**43**	**316**	**106**	**174**	**209**	**163**	**254**	**149**	**269**	**119**	**154**

2.53 Access to the development will be via:

- New access James Bennett Avenue on A1189 / Central Avenue roundabout
- New priority junction access Crane Boulevard with Nacton Road

2.54 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Re-lining of A1189 between Central Avenue and Felixstowe Road roundabouts, to provide two lanes northbound approaching Felixstowe Road roundabout and two lanes southbound approaching Central Avenue roundabout

Brooke Peninsula

2.55 The site is located between the A146 Waveney Drive and Lake Lothing in Lowestoft. The proposal for the site is for a mixed use development including 850 houses as well a café and a primary school, with completion in 2023, so the development is assumed to be fully occupied by 2028.

2.56 The net trip generation for the development is set out below in Table 25 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 25 – Brooke Peninsula peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Taxi	1	4	3	2
Car driver	107	347	283	177
Total Resi	**108**	**351**	**286**	**179**
School	40	18	2	5
Café	3	1	6	4
Overall Traffic Generation	**151**	**370**	**294**	**188**

Source: Table 7.4 within the 'Brooke Peninsula' Transport Assessment (October 2013)

2.57 Trip rates for other hours were taken from Appendix N of the TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.58 The resulting ratios are presented in Table 26 and Table 27.

Table 26 – Brooke Peninsula trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.71	0.23	0.15	0.36	**0.00**	**0.00**	**4.67**	**0.64**
Cafe	0.00	0.00	0.55	0.11	0.55	0.66	**0.00**	**0.00**	**1.00**	**0.17**
Primary school	0.00	0.00	0.02	0.01	0.25	0.18	**0.00**	**0.00**	**0.08**	**0.03**

Table 27 – Brooke Peninsula trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.26	0.21	0.30	0.17	0.23	0.22	0.37	0.24	**0.70**	**0.88**	**0.81**	**0.70**	**0.62**	**0.92**
Café	0.66	1.43	1.54	0.99	3.19	1.87	1.10	0.77	**0.60**	**1.86**	**1.40**	**1.29**	**2.90**	**2.43**
Primary school	0.16	0.21	0.03	0.05	0.01	0.01	0.01	0.02	**19.63**	**11.56**	**3.75**	**2.67**	**1.38**	**0.72**

2.59 These ratios, once applied to the trip volumes shown in Table 25, yielded trip volumes for the modelled hours presented in Table 28.

Table 28 – Brooke Peninsula Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	504	225	108	351	199	158	232	125	286	179	177	165
Café	0	0	3	0	3	1	4	7	8	5	6	4	17	10
Primary school	0	0	3	1	40	18	39	58	8	13	2	5	3	4
Overall Traffic Generation	**0**	**0**	**511**	**226**	**151**	**370**	**242**	**223**	**247**	**144**	**294**	**188**	**197**	**178**

2.60 Access to the development will be via:

- New signalised access onto A146 Waveney Drive
- Existing accesses Nelson Wharf, School Road and Heath Road

2.61 The signal timings modelled in VISUM for the new main junction with Waveney Drive have been obtained from Appendix P of the Transport Assessment.

Felixstowe Port Expansion

2.62 In November 2003, Felixstowe Port applied for a Harbour Revision Order (HRO), planning permission and other necessary consents for works to expand the capacity of the Port. This was granted in 2006 and subsequently varied in 2008 to allow revised phasing.

2.63 Since the public inquiry in 2004, the background conditions that informed the TA have changed substantially which necessitated a review of the traffic generation assumed at that time. Table 4.1 within the Berth 9 Quay Extension – Statement of Environmental Compliance (January 2013) report suggests that, by 2023, there could be a further 1,650 HGV movements per day with the full expansion of the port.

2.64 Figure 1 shows the HGV arrival profile for the Port of Felixstowe. The 1,650 HGV movements are profiled in the VISUM Reference Case according to the information shown in Figure 1 and, for the purposes of modelling, we assume that all of these HGV movements will be on the A14 south of Ipswich, with the majority (75%) then remaining on the A14 but some (25%) on the A12 south of Ipswich. These destinations are represented by VISUM model zone 11 and zone 14 respectively.

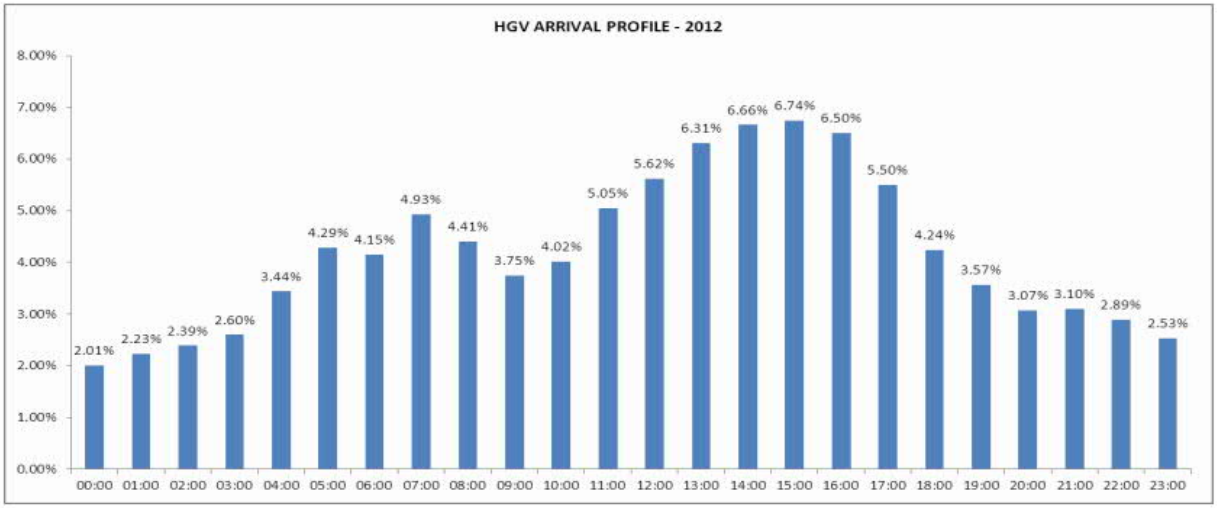


Figure 1 – HGV arrival profile- presentation to EDFE by the Port of Felixstowe (February 2014)

2.65 This results in HGV volumes being added to the matrices as shown in Table 29.

Table 29 – Felixstowe Port Expansion – HGV trip volumes

HOUR	%	TRIPS		TO/FROM A14 (ZONE 11)		TO/FROM A12 (ZONE 14)	
		ARR	DEP	ARR	DEP	ARR	DEP
				75%		**25%**	
06:00-07:00	4.15%	**34**	**34**	26	26	8	8
07:00-08:00	4.93%	**41**	**41**	31	31	10	10
08:00-09:00	4.41%	**36**	**36**	27	27	9	9
15:00-16:00	6.74%	**56**	**56**	42	42	14	14
16:00-17:00	6.50%	**54**	**54**	40	40	14	14
17:00-18:00	5.50%	**45**	**45**	34	34	11	11
18:00-19:00	4.24%	**35**	**35**	26	26	9	9
Total Daily	100%	825	825				
		1,650					

2.66 The port expansion is also likely to be associated with an increased number of employees at the site, which in turn may result in additional staff car movements. In the absence of reliable information these trips were not included explicitly in the model but we assume have been taken into account in the overall growth assumptions.

Belstead House

2.67 The site is located on Belstead Meadows, to the east of the A1214 and north of the A14, to the south-west of Ipswich.

2.68 The development comprises 155 homes which are expected to be constructed and occupied by 2020. The overall trip generation for the development is set out below in Table 30, which is taken from the TA that accompanied the planning application.

Table 30 – Belstead House peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	23	49	56	31
Overall Traffic Generation	**23**	**49**	**56**	**31**

Source: Table 7.1 within the 'Belstead House' Transport Assessment (April 2015)

2.69 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 30. The resulting trips for all seven modelled hours are shown in Table 31.

Table 31 – Belstead House Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**12**	**27**	**23**	**49**	**47**	**28**	**47**	**31**	**56**	**31**	**42**	**34**

2.70 Trips are expected to use the existing Scrivener Drive access from the A1214.

Wolsey Grange

2.71 The site is located to the south of the A1071, in the area bounded by the A14 and A1214, to the south-west of Ipswich.

2.72 The development comprises 475 homes along with a primary school and a leisure park, which are expected to be constructed and occupied by 2023. The overall trip generation for the development is set out below in Table 32, which is taken from the TA that accompanied the planning application.

Table 32 – Wolsey Grange peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	67	201	186	117

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Primary school	64	46	2	5
Leisure park	61	49	257	161
Overall Traffic Generation	**192**	**296**	**445**	**283**

Source: Tables 7.5, 7.7 and 7.9 within the 'Wolsey Grange'' Transport Assessment (July 2015)

2.73 Trip rates for other hours were taken from Appendix G of the development TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.74 The resulting ratios are presented in Table 33 and Table 34.

Table 33 – Wolsey Grange trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.00	0.00	0.08	0.28	0.14	0.42	**0.00**	**0.00**	**0.59**	**0.66**
Primary school (vehicles per pupil)	0.01	0.00	0.02	0.01	0.36	0.27	**0.04**	**0.01**	**0.04**	**0.02**
Leisure park (vehicles per 100sqm)	0.46	0.18	0.26	0.23	0.54	0.43	**0.86**	**0.41**	**0.49**	**0.53**

Table 34 – Wolsey Grange trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.31	0.24	0.32	0.19	0.29	0.24	0.39	0.25	**0.78**	**0.95**	**0.81**	**0.78**	**0.74**	**0.97**
Primary school (vehicles per pupil)	0.28	0.31	0.03	0.05	0.01	0.01	0.01	0.03	**28.30**	**12.56**	**2.70**	**1.88**	**0.70**	**0.52**
Leisure park (vehicles per 100sqm)	0.98	1.14	1.55	1.27	2.35	1.73	2.26	1.42	**0.43**	**0.81**	**0.69**	**0.90**	**1.04**	**1.22**

2.75 These ratios, once applied to the relevant trip volumes shown in Table 32, yielded trip volumes for the modelled hours presented in Table 35.

Table 35 – Wolsey Grange Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	40	133	67	201	146	111	150	91	186	117	138	113
Primary school	3	1	3	1	64	46	48	51	5	9	2	5	1	2
Leisurepark	52	20	30	26	61	49	111	130	176	145	257	161	267	197
Overall Traffic Generation	**55**	**21**	**72**	**160**	**192**	**296**	**305**	**292**	**332**	**245**	**445**	**283**	**407**	**312**

2.76 Access to the development will be via:

- Existing modified accesses on A1071 and A1214
- New signalised access onto A1071

2.77 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Signalisation of A1071 / Poplar Lane junction
- Signalisation of southbound arm of A1214 / Scrivener Road roundabout
- Improvements to A1071 / A1214 signalised junction and A1071 / B1113 roundabout

2.78 The signal timings modelled in VISUM were obtained from Appendix H of the Transport Assessment.

Woods Meadow

2.79 The site is located to the north of the A1152 Woods Lane, east of the Bredfield Road junction.

2.80 The development comprises 180 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 36, which is taken from the TA that accompanied the planning application.

Table 36 – Woods Meadow peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	29	96	96	50
Overall Traffic Generation	**29**	**96**	**96**	**50**

Source: Table 5.4 within the 'Woods Meadow' Transport Assessment (March 2014)

2.81 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 36. The resulting trips for all seven modelled hours are shown in Table 37.

Table 37 – Woods Meadow Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**15**	**52**	**29**	**96**	**81**	**45**	**80**	**50**	**96**	**50**	**72**	**55**

2.82 The site will be accessed via a new priority junction on Woods Lane.

Fairfield Road, Framlingham

2.83 The site is located to the south of Framlingham, in the area bounded by Fairfield Road, Brick Lane and Infirmary Lane.

2.84 The development comprises 163 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 38, which is taken from the TA that accompanied the planning application.

Table 38 – Fairfield Road peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	21	91	80	39
Overall Traffic Generation	**21**	**91**	**80**	**39**

Source: Table 6.2 within the 'Fairfield Road' Transport Assessment (August 2014)

2.85 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 38. The resulting trips for all seven modelled hours are shown in Table 39.

Table 39 – Fairfield Road Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**11**	**49**	**21**	**91**	**67**	**35**	**66**	**39**	**80**	**39**	**60**	**43**

2.86 It is assumed that the site will be accessed via a simple priority junction on Fairfield Road.

Mount Pleasant, Framlingham

2.87 The site is located to the west of Framlingham, in the area bounded by Mount Pleasant, New Street and Brook Lane.

2.88 The development comprises 95 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 40, which is taken from the TA that accompanied the planning application.

Table 40 – Mount Pleasant peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	19	42	33	21
Overall Traffic Generation	**19**	**42**	**33**	**21**

Source: Table 5.2 within the 'Mount Pleasant' Transport Assessment (June 2015)

2.89 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 40. The resulting trips for all seven modelled hours are shown in Table 41.

Table 41 – Mount Pleasant Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**10**	**23**	**19**	**42**	**28**	**19**	**27**	**21**	**33**	**21**	**25**	**23**

2.90 It is assumed that the site will be accessed via a simple priority junction on Mount Pleasant.

Saxmundham

2.91 The site is located on either side of the A12 near Saxmundham, between the B1119 Saxmundham junction and the B1121 Benhall Green junction.

2.92 The development comprises 800 homes and employment generating 559 jobs. It has been agreed with SCC that it is likely to be completed by 2034 and, for the purposes of producing a Reference Case to assess the potential impacts of Sizewell C, the completion level is expected to be around 550 homes and 435 jobs by 2028.

2.93 The overall trip generation for the development is set out below in Table 42, which was provided by SCC.

Table 42 – Saxmundham peak hour Car trips (full development)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	222	371	301	203
Employment	143	38	21	118
Overall Traffic Generation	**365**	**409**	**322**	**321**

2.94 The residential trips were factored by 550 / 800 homes and the employment trips by 435 / 559 jobs, to provide 2028 trip generation for these hours as shown Table 43.

Table 43 – Saxmundham peak hour Car trips (2028)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	153	255	207	140
Employment	111	30	16	92
Overall Traffic Generation	**264**	**285**	**223**	**231**

2.95 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 43. The resulting trips for all seven modelled hours are shown in Table 44.

Table 44 – Saxmundham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	78	138	153	255	174	127	172	139	207	140	155	152
Employment	0	0	46	14	111	30	20	32	20	65	16	92	10	38
Overall Traffic Generation	**0**	**0**	**124**	**153**	**264**	**285**	**194**	**159**	**192**	**204**	**223**	**231**	**165**	**190**

2.96 The development will be accessed via a new roundabout junction located on the A12 between the B1119 Saxmundham junction and the B1121 Benhall Green junction. Being located on opposite sides of the A12, the employment and housing parts of the development will be accessed via separate arms of the new roundabout.

3.0 DISTRIBUTION

3.1 The committed developments have each been allocated a new zone in the Sizewell C model, and zones containing similar land uses have been used to give trip distributions, which are outlined in Table 45.

Table 45 – Committed development zones

DEVELOPMENT	DEVELOPMENT ZONE	SIMILAR ZONES USED FOR DISTRIBUTION	LAND USE WITHIN DISTRIBUTION ZONE
Adastral Park	1101	339	Mixed use, residential and primary school
Clickett Hill	1102	334	Industrial
Martlesham	1103	339	Mixed use, residential and primary school
Ipswich Garden Suburb	1104	378	Residential, local shops and sports centre
Trinity Park	1105	341	Residential
Futura Park	1106	377	Industrial and retail
Brooke Peninsula	1107	357	Residential and primary school

DEVELOPMENT	DEVELOPMENT ZONE	SIMILAR ZONES USED FOR DISTRIBUTION	LAND USE WITHIN DISTRIBUTION ZONE
Felixstowe Port	1108	See Table 20	
Belstead House	1109	381	Mostly residential
Wolsey Grange	1110	369	Residential and retail
Woods Meadow	1111	340	Mostly residential
Fairfield Road	1112	407	Mostly residential
Mount Pleasant	1113	408	Mostly residential
Saxmundham (resi)	1114	463	Mostly residential
Saxmundham (emp)	1115	616	Includes industrial estate

4.0 BACKGROUND TRAFFIC GROWTH

TEMPro

4.1 TEMPro is a software tool that provides projections of growth over time for use in transport models, based on outputs from the National Trip End Model (NTEM). It is a nationally-consistent benchmark of growth and the forecast growth applied in the Sizewell C Reference Case models is consistent with those obtained from TEMPro.

4.2 The Central Growth forecast has been obtained directly from TEMPro using the NTEM version 7.2 datasets. Growth in car trip ends from the unadjusted TEMPro results are presented in Table 46 between 2015 and 2028 for the AM peak, Inter peak and PM peak.

Table 46 – Unadjusted TEMPro growth

TEMPRO ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.1087	1.1157	1.1630	1.1626	1.1171	1.1128
Babergh	1.0124	1.0894	1.1155	1.1111	1.0781	1.0291
Ipswich	1.1146	1.1044	1.1600	1.1603	1.1063	1.1116
Mid Suffolk	1.0123	1.0840	1.1128	1.1080	1.0742	1.0282
South Norfolk	1.1375	1.1085	1.1781	1.1794	1.1204	1.1377
Suffolk Coastal	1.0620	1.0953	1.1413	1.1394	1.0957	1.0754
Waveney	1.0661	1.1023	1.1375	1.1357	1.0972	1.0730

Alternative Planning Assumptions

4.3 The Alternative Planning Assumptions facility within TEMPro was used to remove trips associated with explicitly modelled developments from the forecast total for each district and time period. The resultant growth factors therefore represent the remaining background growth, avoiding double counting of the committed developments with traffic growth forecasts.

4.4 To undertake the adjustment within TEMPro, it is necessary to input the number of jobs and households associated with each of the development modelled explicitly. This information was extracted from the respective TA where available.

4.5 Where the data was not available (often true of employment sites where the number of jobs is not usually provided but instead floorspace is given), the number of jobs was estimated from a number of relevant sites in the TRICS database which provides both gross floor area (GFA) and number of jobs. This provided a proxy 'employee floorspace rate' by land use type, shown in Table 47, which was applied to the development floorspace to produce approximate number of jobs, shown in Table 48.

Table 47 – TRICS employee floorspace rate

LAND USE	NUMBER OF SITES SELECTED	TOTAL GFA (M^2)	TOTAL NUMBER OF JOBS	M^2 PER EMPLOYEE
Warehouse	8	70,128	419	167
Office	12	28,455	2,035	14
Food Retail	9	82,135	3,789	22
Non-Food Retail	12	86,275	1,290	67
Industrial	13	108,934	1,878	58

Table 48 – Estimated jobs based on GFA

DEVELOPMENT	LAND USE	DEVELOPMENT GFA (M^2)	NUMBER OF JOBS
Ipswich Garden Suburb	Food Retail	2,000	92
	Total	**2,000**	**92**
Clickett Hill	Warehouse	46,575	278
	Office	990	71
	Total	**47,565**	**349**
Futura Park	Office	10,350	740
	Warehouse	31,680	189
	Food Retail	10,008	462
	Non-Food Retail	6,186	92
	Industrial	4,050	70
	Total	**62,274**	**1,553**

4.6 Summarised planning assumptions (households and jobs) for the committed developments are shown in Table 49. The TEMPro planning assumptions for these local authorities, before and after adjustment for the committed developments, are shown in Table 50. The resulting adjusted background growth factors are shown in *Table 51*.

Table 49 – Committed development planning assumptions

DEVELOPMENT	HOUSEHOLDS	JOBS
Belstead House	155	0
Wolsey Grange	475	0
Babergh Total	**630**	**0**
Adastral Park	725*	315*
Martlesham	142**	0
Clickett Hill	0	349
Woods Meadow	180	0
Fairfield Road	163	0
Mount Pleasant	95	0
Saxmundham	550	435
Suffolk Coastal Total	**1,855**	**1,099**
Ipswich Garden Suburb	1,960*	92*
Trinity Park	300	0
Futura Park	0	1,553
Ipswich Total	**2,260**	**1,645**
Brooke Peninsula, Lowestoft	850	0
Waveney Total	**850**	**0**

** Level of completion agreed with SCC*

*** 180 homes, of which 38 are occupied at June 2015 = 142 remaining*

Table 50 – TEMPro alternative planning assumptions

TEMPro ZONE	TEMPro PLANNING ASSUMPTIONS					
	2015		2028 UNADJUSTED		2028 ADJUSTED	
	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS
Babergh	39,374	39,231	43,044	41,717	**42,414**	**41,717**
Ipswich	59,336	78,287	68,289	83,388	**66,029**	**81,743**
Suffolk Coastal	56,191	59,162	64,363	62,801	**62,508**	**61,702**
Waveney	52,639	49,225	58,389	52,477	**57,539**	**52,477**

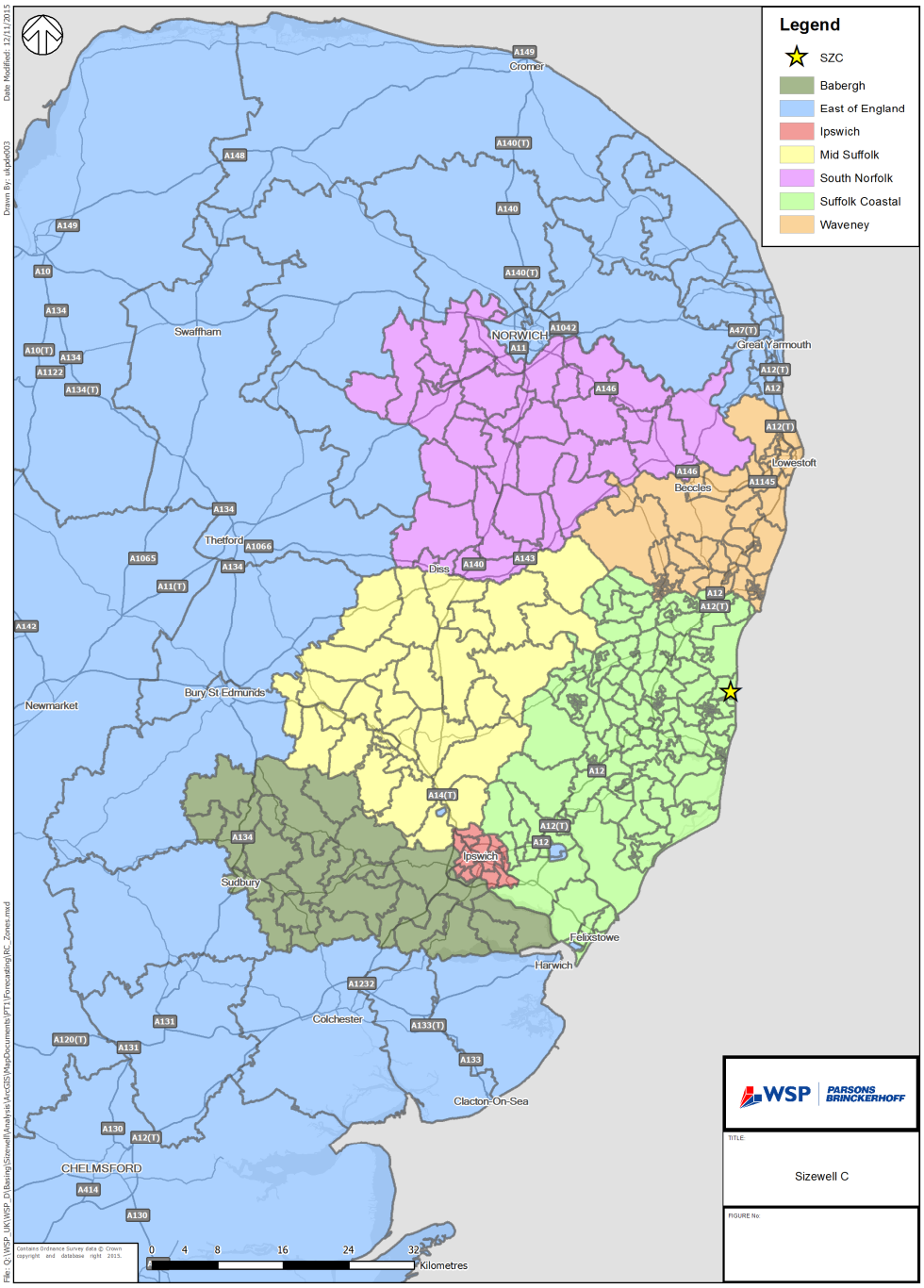
** Level of completion agreed with SCC*

Table 51 – Adjusted TEMPro growth

TEMPro ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.1088	1.1158	1.1630	1.1627	1.1171	1.1129
Babergh	1.0007	1.0875	1.1081	1.1034	1.0737	1.0184
Ipswich	1.0815	1.0813	1.1313	1.1313	1.0809	1.0798
Mid Suffolk	1.0123	1.0841	1.1128	1.1080	1.0742	1.0282
South Norfolk	1.1375	1.1085	1.1781	1.1794	1.1204	1.1378
Suffolk Coastal	1.0340	1.0747	1.1156	1.1135	1.0732	1.0481
Waveney	1.0542	1.1005	1.1304	1.1284	1.0929	1.0623

4.7 Figure 2 shows the geographical areas to which the adjusted TEMPro growth was applied.

Figure 2 – TEMPro growth geographical areas



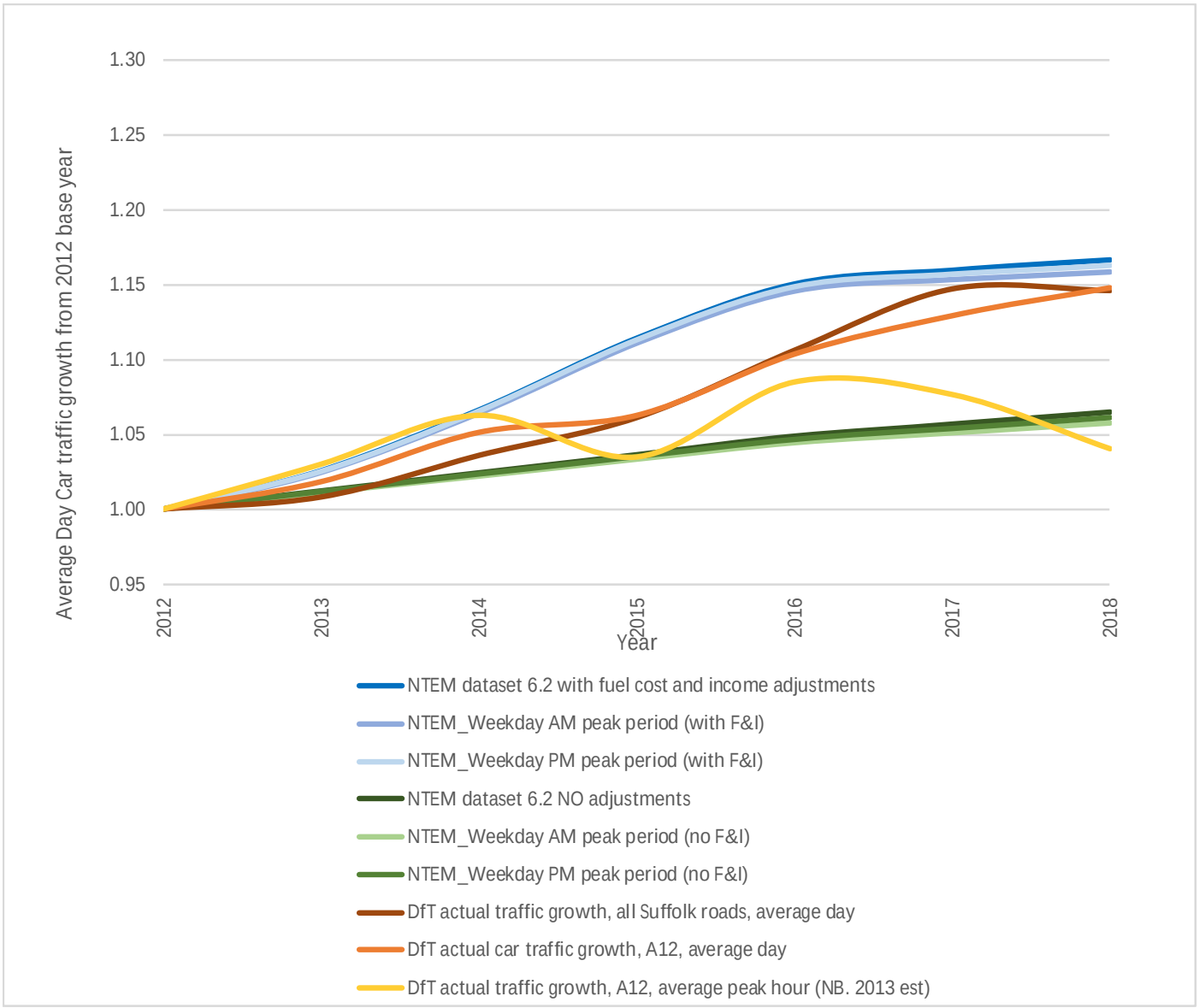
TEMPro Constraint

4.8 The matrix has been constrained to the level of TEMPro growth as set out in *Table 51*.

4.9 Analysis of historic traffic growth on the A12 and other roads in Suffolk has been undertaken for the period 2012-2018, which demonstrates, as shown in Figure 3, that actual traffic growth was similar or lower than the

forecast TEMPro growth, with application of fuel and income factors, across that period. NTEM dataset 6.2 was used for the comparison, as this would have been the basis for forecasting in 2012.

Figure 3 – Traffic Growth 2012 - 2018



Fuel and income adjustment factors

4.10 As the model being used is "highway only" the forecast demand matrices are uplifted by fuel and income adjustment factors. These represent a combination of factors that result in car travel becoming less expensive over time relative to present day costs and alternative modes, as set out in TAG Unit M4.7. The factors that have been calculated are presented in Table 52.

4.11 The fuel and income factors have been applied post-constraint, but only to those elements of the matrix that do not include the committed developments.

Table 52 – Fuel and income adjustment factors

YEAR	FUEL COST	INCOME	COMBINED
2028	1.0392	1.0195	1.0595

Other user classes

4.12 Information obtained from TEMPro provides forecast growth assumptions for car user classes. Growth factors for other user classes have been obtained from the Regional Traffic Forecasts 2018 (RTF18) published by the DfT. Growth rates for the 'East of England' region have been derived from the 'LGV miles' values from RTF18 for the years 2015 and 2028 to provide growth factors which are applied equally across all time periods.

4.13 The LGV and HGV growth factors are shown in Table 53.

Table 53 – Non-car growth factors

VEHICLE CLASS	2015 TO 2028
LGV	**1.1855**
HGV	**1.0437**

Generalised cost parameters

4.14 Generalised costs have been calculated for the 2028 forecast year using values of time, GDP growth rates, purpose splits, and vehicle operating costs recommended by the DfT for use in economic appraisals of transport projects in England. These values are consistent with the latest guidance (November 2014) contained within TAG Unit A1.3 and in the TAG Databook November 2014[2] release.

4.15 The generalised cost coefficients for input to VISUM, of time (pence per second x 100) and distance pence per metre x 100) for each vehicle class, are shown in Table 54.

4.16 It should be noted that the value of time for HGV has been doubled from the TAG guidance value (2010 perceived cost) to represent a more realistic generalised cost for this vehicle class, as recommended in TAG Unit M3.1 section 2. This adjustment was also applied in the 2015 base modelling.

Table 54 – Generalised cost parameters (input to VISUM)

VEHICLE CLASS	TIME (PENCE PER SECOND X 100)			DISTANCE (PENCE PER METRE X 100)		
	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)
2015						
Car	37.7136	41.3721	35.0955	1.0406	1.0420	1.0374
LGV	40.9974	40.9974	40.9974	1.5610	1.5610	1.5610
HGV	84.2904	84.2904	84.2904	3.9146	3.9146	3.9146
2028						
Car	47.5341	51.9118	44.2083	0.9235	0.9253	0.9203
LGV	52.5016	52.5016	52.5016	1.5081	1.5081	1.5081
HGV	107.9428	107.9428	107.9428	4.3603	4.3603	4.3603

[2] Consistent with the validated 2015 Base Model

5.0 OVERALL MATRIX DEVELOPMENT PROCESS

Car

5.1 Alternative planning assumptions have been applied in TEMPro, taking account of the housing and employment proposals for development 1 to development 7, and 9 to 14, in Table 1. These provide adjusted 'Car' background growth factors from 2015 to 2028. Note that no information is available on specific employment forecasts as part of the Felixstowe Port expansion, so this is included in background growth.

5.2 Since different growth factors exist for different districts, it was necessary to 'furness' the validated 2015 base matrices to the individual origin and destination growth factors for each individual zone. This process adjusts the value of each origin-destination trip pair within the matrix, so that the correct growth factor for each zone origin and destination is achieved.

5.3 The TEMPro constraining factors were applied to the base matrix to provide the overall level of growth. This was used to calculate scaling factors, revised factors that are applied to the base matrix but ensure that a scaled matrix and development trips match the size of the TEMPro constrained matrix.

5.4 Fuel cost and income adjustment factors were subsequently applied, only to the scaled matrix (i.e. excluding committed development trips). The committed development trips were added to each modelled hour matrix, by applying the distribution of the relevant 'similar zone(s)' (shown in Table 45) to the net vehicle trip totals for each development.

5.5 The total committed development Car trips are summarised in Table 55, whilst overall Reference Case trip totals, including constrained background growth and committed development trips, are shown in Table 56.

LGV and HGV

5.6 Goods vehicle growth factors are consistent across the study area. Therefore, the 2015 validated base matrices for these vehicle classes were simply factored by the values shown in Table 53 to produce 2028 matrices.

5.7 Additional HGV trips were added to the 2028 matrices to reflect the Felixstowe Port expansion as shown in Table 29.

5.8 The total committed development HGV trips are summarised in Table 55, whilst the overall Reference Case LGV and HGV trip totals are shown in Table 56.

Table 55 – Total Committed Development Trips

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Adastral Park	0	149	295	299	317	361	293
Martlesham	0	56	107	97	100	112	99
Ipswich Garden Suburb	10	464	922	821	883	976	816
Clickett Hill	0	52	37	68	56	39	24
Trinity Park	0	91	170	142	146	164	143
Futura Park	124	201	422	383	417	418	273
Brooke Peninsula	0	737	521	466	391	482	375
Belstead House	0	38	72	75	77	87	76
Wolsey Grange	76	232	488	597	577	728	719
Woods Meadow	0	67	125	126	129	146	126
Fairfield Road	0	60	112	103	105	119	102
Mount Pleasant	0	32	61	47	48	54	48
Saxmundham (resi)	0	216	408	301	311	347	307

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Saxmundham (emp)	0	60	141	53	85	108	47
Total Cars	**209**	**2,456**	**3,880**	**3,577**	**3,644**	**4,141**	**3,450**
Felixstowe Port Expansion	68	81	73	111	107	91	70
Total HGVs	**68**	**81**	**73**	**111**	**107**	**91**	**70**

Table 56 – Total 2028 Reference Case Trips

HOUR	2015 BASE YEAR	2028 BACKGROUND TRAFFIC	2028 COMMITTED DEVELOPMENT	2028 UNCONSTRAINED TOTAL	2028 CONSTRAINED TOTAL	2028 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH
CAR							
06:00-07:00	16,789	18,110	209	18,319	18,344	**19,422**	**16%**
07:00-08:00	39,155	42,219	2,456	44,675	42,777	**45,175**	**15%**
08:00-09:00	53,300	57,398	3,880	61,279	58,191	**61,420**	**15%**
15:00-16:00	49,865	56,356	3,577	59,934	57,165	**60,351**	**21%**
16:00-17:00	48,564	52,521	3,644	56,165	53,225	**56,173**	**16%**
17:00-18:00	50,946	55,061	4,141	59,202	55,816	**58,889**	**16%**
18:00-19:00	38,943	42,105	3,450	45,556	42,677	**45,010**	**16%**
LGV							
06:00-07:00	1,741	2,064	-	2,064	2,064	**2,064**	**19%**
07:00-08:00	3,785	4,487	-	4,487	4,487	**4,487**	**19%**
08:00-09:00	3,727	4,418	-	4,418	4,418	**4,418**	**19%**
15:00-16:00	3,062	3,630	-	3,630	3,630	**3,630**	**19%**
16:00-17:00	3,712	4,401	-	4,401	4,401	**4,401**	**19%**
17:00-18:00	2,771	3,285	-	3,285	3,285	**3,285**	**19%**
18:00-19:00	1,930	2,288	-	2,288	2,288	**2,288**	**19%**
HGV							
06:00-07:00	1,808	1,853	68	1,922	1,922	**1,922**	**6%**
07:00-08:00	2,456	2,517	81	2,598	2,598	**2,598**	**6%**
08:00-09:00	2,747	2,816	73	2,889	2,889	**2,889**	**5%**
15:00-16:00	2,744	2,812	111	2,923	2,923	**2,923**	**7%**
16:00-17:00	2,232	2,287	107	2,395	2,395	**2,395**	**7%**
17:00-18:00	1,623	1,663	91	1,754	1,754	**1,754**	**8%**
18:00-19:00	1,173	1,202	70	1,272	1,272	**1,272**	**8%**
TOTAL VEHICLES							
06:00-07:00	20,338	22,027	278	22,305	22,330	**23,408**	**15%**
07:00-08:00	45,395	49,223	2,537	51,760	49,862	**52,260**	**15%**
08:00-09:00	59,775	64,633	3,953	68,586	65,498	**68,727**	**15%**
15:00-16:00	55,670	62,798	3,688	66,487	63,718	**66,904**	**20%**
16:00-17:00	54,508	59,210	3,751	62,961	60,020	**62,969**	**16%**
17:00-18:00	55,339	60,009	4,231	64,240	60,855	**63,928**	**16%**
18:00-19:00	42,046	45,595	3,520	49,115	46,237	**48,570**	**16%**

6.0 SIZEWELL B OUTAGE

6.1 As mentioned in section 1.0, the operation of Sizewell B (SZB), and the trips it generates, could have an impact on traffic flows and operation of junctions across the modelled area. An 'outage' is performed periodically at Sizewell B, approximately every 18 months and lasting approximately 6 weeks, during which periods traffic flows generated by the site are higher than usual. It was considered prudent to include the 'SZB outage' in any future year modelling so that robust traffic flows are reflected in each scenario.

6.2 In Spring 2016 a series of traffic surveys was undertaken during 17-18 May when there was a SZB outage and during 21-22 June when there was no SZB outage. The traffic surveys consisted of Manual Classified Counts (MCCs) and Automatic Traffic Counts (ATCs) at a series of sites across the area shown in Figure 4.

Figure 4 – SZB Outage Survey Sites



Analysis of survey data

6.3 The Spring 2016 MCC and ATC data was first processed by averaging the two days of data for each period (17-18 May 2016 'With Outage', and 21-22 June 2016 'No Outage'). The MCC turning flows and ATC link flows were then displayed on a diagram of the surveyed area, for each of the seven modelled hours and for each vehicle class (Car, LGV, HGV) separately.

6.4 For each hour and vehicle class, a new diagram was then created showing the difference between 'With Outage' and 'No Outage' traffic counts.

6.5 Review of these diagrams indicated that, due to daily fluctuations in traffic flows, clear patterns of the distribution of additional trips during the 'With Outage' period could not be established based on all of the survey data. Instead, a selection of key ATC locations was used from which a logical distribution of trips could be ascertained.

6.6 The ATCs selected for consideration enabled us to derive a distribution of trips between SZB (ATC 1) and the following six areas:

- A12 North – ATC 15
- B1125 – ATC 16
- B1119 – ATC 5
- A12 South – ATC 8, 9
- Aldeburgh – ATC 6, 7, 8
- Leiston – ATC 2, 6, 7

6.7 Analysis of the difference in ATC total vehicle volumes, between 'With Outage' and 'No Outage' scenarios, at the above six sites along with the ATC on Sizewell Gap immediately west of the SZB access road, resulted in a distribution of trips as shown in Table 57. The equivalent percentages are shown in Table 58.

Table 57 – Routing from 2016 ATC comparison, Hourly, Total Vehicles

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	99	28	1	38	1	8	8	2	0	0	19	27	55	70
B1125	102	29	5	31	0	6	0	2	0	0	4	27	12	71
B1119	49	18	1	28	0	6	1	1	0	0	19	17	55	44
A12 S	99	5	7	38	1	8	8	1	9	0	13	20	38	51
Aldeburgh	80	18	0	41	0	8	0	1	0	7	9	19	26	50
Leiston	91	40	0	8	0	2	4	6	0	0	4	36	11	97
Total	**521**	**137**	**14**	**184**	**2**	**38**	**21**	**12**	**9**	**7**	**67**	**145**	**197**	**382**

Table 58 – Routing from 2016 ATC comparison, Hourly, Percentage

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	19%	20%	10%	21%	38%	21%	37%	13%	0%	0%	28%	18%	28%	18%
B1125	20%	21%	35%	17%	13%	17%	1%	14%	0%	0%	6%	19%	6%	18%
B1119	9%	13%	5%	15%	12%	16%	4%	5%	0%	0%	28%	12%	28%	12%
A12 S	19%	4%	50%	21%	38%	21%	40%	7%	100%	0%	19%	14%	19%	13%
Aldeburgh	15%	13%	0%	22%	0%	21%	0%	7%	0%	100%	13%	13%	13%	13%
Leiston	17%	29%	0%	4%	0%	5%	17%	54%	0%	0%	6%	25%	6%	25%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

6.8 In order to calculate the distribution of trips at zone level, beyond these six locations, flow bundles of the 2023 Reference Case traffic were carried out to provide the zonal split.

6.9 A comparison was also undertaken between the six-area distribution derived from the flow bundles of Reference Case traffic and the Spring 2016 ATC analysis. Table 59 presents the comparison between the distribution calculated from the ATCs, summed across all seven hours, and that derived from the Reference Case traffic flow bundles.

Table 59 – Proportional Distribution, Total Seven Hours

AREA	TOTAL TRAFFIC VOLUMES				PROPORTIONAL SPLIT			
	2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES		2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	183	171	637	552	22%	19%	20%	20%
B1125	124	165	263	204	15%	18%	8%	7%
B1119	124	114	324	290	15%	13%	10%	10%
A12 S	176	123	1,019	848	21%	14%	32%	31%
Aldeburgh	115	143	847	761	14%	16%	26%	28%
Leiston	110	188	141	106	13%	21%	4%	4%
Total	**833**	**905**	**3,230**	**2,760**	**100%**	**100%**	**100%**	**100%**

6.10 Upon review of this analysis it was considered more reliable to use the proportional split of Reference Case bundles, shown in the last two columns of Table 59, to inform the full distribution of the SZB outage trips, evidentially supported by the Spring 2016 ATC survey data volumes.

6.11 The detailed calculations of the SZB outage traffic flows are now discussed.

Calculation of traffic inputs

6.12 The proportional splits of SZB Outage traffic flows are shown in Table 60.

Table 60 – Distributional Split of Reference Case Traffic

AREA	TOTAL 7 HOURS	
	TOWARDS SZB	AWAY FROM SZB
A12 N	20%	20%
B1125	8%	7%
B1119	10%	10%
A12 S	32%	31%
Aldeburgh	26%	28%
Leiston	4%	4%
Total	**100%**	**100%**

6.13 The hourly volumes of outage traffic, to and from SZB, are shown in Table 61 to Table 63 for Cars, LGVs and HGVs respectively. Numbers are rounded.

Table 61 – SZB Outage Trips – Car

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	93	26	0	35	0	7	3	0	1	0	12	27	36	70
B1125	38	9	0	13	0	3	1	0	0	0	5	10	15	26
B1119	47	13	0	18	0	4	1	0	1	0	6	14	18	37
A12 S	148	39	0	53	0	12	4	0	1	0	20	42	58	108
Aldeburgh	124	35	0	48	0	10	3	0	1	0	17	38	48	96
Leiston	21	5	0	7	0	1	1	0	0	0	3	5	8	13
Total	**471**	**127**	**0**	**174**	**0**	**37**	**13**	**0**	**4**	**0**	**63**	**136**	**183**	**350**
Two-way	**598**		**174**		**37**		**13**		**4**		**199**		**534**	

Table 62 – SZB Outage Trips – LGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	10	2	2	2	0	0	2	2	1	1	1	2	2	6
B1125	4	1	1	1	0	0	1	1	0	1	0	1	1	2
B1119	5	1	1	1	0	0	1	1	1	1	1	1	1	3
A12 S	16	3	3	3	1	0	2	4	2	2	1	2	4	10
Aldeburgh	13	3	3	3	0	0	2	3	1	2	1	2	3	9
Leiston	2	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**50**	**10**	**10**	**10**	**1**	**0**	**8**	**11**	**5**	**7**	**4**	**8**	**12**	**31**
Two-way	**60**		**20**		**1**		**19**		**11**		**13**		**43**	

Table 63 – SZB Outage Trips – HGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	0	0	1	0	0	0	0	0	0	0	0	0	0	0
B1125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B1119	0	0	1	0	0	0	0	0	0	0	0	0	0	0
A12 S	1	0	1	0	1	0	1	0	1	0	0	0	1	1
Aldeburgh	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Leiston	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**4**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**
Two-way	**1**		**4**		**1**		**1**		**1**		**1**		**2**	

6.14 The zonal distribution of these trips was derived from the 2023 Reference Case traffic flow.

6.15 The above SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models.

7.0 SUMMARY TRIPS

7.1 The SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models. The final Reference Case matrix totals are shown in Table 64.

Table 64 – Total 2028 Reference Case Trips, including SZB Outage

HOUR	2015 BASE YEAR	2028 BACKGROUND TRAFFIC	2028 COMMITTED DEVELOPMENT	2028 UNCONSTRAINED TOTAL	2028 CONSTRAINED TOTAL	2028 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH	SZB OUTAGE	FINAL 2028 REFERENCE CASE TOTAL
CAR									
06:00-07:00	16,789	18,110	209	18,319	18,344	**19,422**	**16%**	598	**20,020**
07:00-08:00	39,155	42,219	2,456	44,675	42,777	**45,175**	**15%**	174	**45,349**
08:00-09:00	53,300	57,398	3,880	61,279	58,191	**61,420**	**15%**	37	**61,457**
15:00-16:00	49,865	56,356	3,577	59,934	57,165	**60,351**	**21%**	13	**60,364**
16:00-17:00	48,564	52,521	3,644	56,165	53,225	**56,173**	**16%**	4	**56,177**
17:00-18:00	50,946	55,061	4,141	59,202	55,816	**58,889**	**16%**	199	**59,088**
18:00-19:00	38,943	42,105	3,450	45,556	42,677	**45,010**	**16%**	534	**45,544**
LGV									
06:00-07:00	1,741	2,064	-	2,064	2,064	**2,064**	**19%**	60	**2,124**
07:00-08:00	3,785	4,487	-	4,487	4,487	**4,487**	**19%**	20	**4,507**
08:00-09:00	3,727	4,418	-	4,418	4,418	**4,418**	**19%**	1	**4,419**
15:00-16:00	3,062	3,630	-	3,630	3,630	**3,630**	**19%**	19	**3,649**
16:00-17:00	3,712	4,401	-	4,401	4,401	**4,401**	**19%**	11	**4,412**
17:00-18:00	2,771	3,285	-	3,285	3,285	**3,285**	**19%**	13	**3,298**
18:00-19:00	1,930	2,288	-	2,288	2,288	**2,288**	**19%**	43	**2,331**
HGV									
06:00-07:00	1,808	1,887	68	1,955	1,955	**1,955**	**8%**	1	**1,956**
07:00-08:00	2,456	2,563	81	2,644	2,644	**2,644**	**8%**	4	**2,648**
08:00-09:00	2,747	2,868	73	2,940	2,940	**2,940**	**7%**	1	**2,941**
15:00-16:00	2,744	2,864	111	2,975	2,975	**2,975**	**8%**	1	**2,976**
16:00-17:00	2,232	2,329	107	2,436	2,436	**2,436**	**9%**	1	**2,437**
17:00-18:00	1,623	1,694	91	1,784	1,784	**1,784**	**10%**	1	**1,785**
18:00-19:00	1,173	1,224	70	1,294	1,294	**1,294**	**10%**	2	**1,296**
TOTAL VEHICLES									
06:00-07:00	20,338	22,061	278	22,339	22,364	**23,442**	**15%**	659	**24,101**
07:00-08:00	45,395	49,269	2,537	51,806	49,908	**52,306**	**15%**	198	**52,504**
08:00-09:00	59,775	64,684	3,953	68,637	65,549	**68,779**	**15%**	40	**68,819**
15:00-16:00	55,670	62,850	3,688	66,538	63,769	**66,956**	**20%**	33	**66,989**
16:00-17:00	54,508	59,252	3,751	63,002	60,062	**63,011**	**16%**	16	**63,027**
17:00-18:00	55,339	60,039	4,231	64,271	60,885	**63,958**	**16%**	212	**64,170**
18:00-19:00	42,046	45,617	3,520	49,137	46,259	**48,592**	**16%**	579	**49,171**

8.0

8.0 OTHER INFRASTRUCTURE

Beccles Relief Road

8.1 The Beccles Relief Road has now been built and is therefore included in the 2028 Reference Case model.

8.2 The new road joins the A145 London Road south of Beccles with Ellough Road, to the north of Ellough Industrial Estate. New roundabout junctions connect the Relief Road with the existing highway network at either end.

Lake Lothing Third Crossing, Lowestoft

8.3 A planning application was submitted in 2018 for the Lake Lothing Third Crossing in Lowestoft, which underwent an Examination In Public (EIP) in Spring 2019.

8.4 The latest timeline according to SCC's website is that, subject to planning application approval, construction could start in 2020 and would take two to three years to build. Therefore it is included in the 2028 Reference Case scenario.

8.5 The Third Crossing would link from the A12 via Waveney Drive on the south side, to Denmark Road and Peto Way on the north side of Lake Lothing.

Upper Orwell Crossing, Ipswich

8.6 The proposed 'Upper Orwell Crossing' in Ipswich was previously included in the 2027 Reference Case which provided the basis for assessment at Stage 3.

8.7 However the scheme has been shelved and therefore has been removed from all Sizewell C future year models.

TECHNICAL NOTE: SIZEWELL C VISUM TRAFFIC MODEL

DATE:	16 January 2020	**CONFIDENTIALITY:**	Public
SUBJECT:	2034 Reference Case Assumptions		
PROJECT:	50400326	**AUTHOR:**	Sally Powell
CHECKED:	Daniel Tarry / Stephanie Biggs	**APPROVED:**	Nick Cottman

1.0 INTRODUCTION

1.1. WSP was instructed by EDF Energy (EDFE) to develop a highway assignment traffic model for the purposes of assessing the potential traffic impacts of Sizewell C (SZC) on the surrounding highway network during the project's construction phase, in the first instance, as well as operational phases.

1.2. The models will be used to identify the location where mitigation schemes may be required to address the impacts of development traffic and demonstrate the effect of those schemes on traffic volumes. The outputs of the VISUM modelling will be incorporated into smaller scale operational models, the Transport Assessment and provide inputs to environmental analysis.

1.3. Base year VISUM transport models have been developed, to represent seven separate hourly periods as follows:

- 06:00-07:00
- 07:00-08:00
- 08:00-09:00
- 15:00-16:00
- 16:00-17:00
- 17:00-18:00
- 18:00-19:00

1.4. In the development of the base year transport models, Department for Transport (DfT) Transport Analysis Guidance (TAG) has informed the model development process where relevant. The 2015 models have been calibrated and validated, using observed traffic data collected across the study area between March and June 2015, based on the criteria set out in TAG Unit M3.1 Highway Assignment Modelling.

1.5. The 2015 Base models have been used to develop a forecast year highway network and demand, representative of the likely traffic conditions once Sizewell C is operational, which is currently expected to be 2034 ('early years' of construction plus 11 years). These 'Reference Case' models include 'committed' developments, as agreed with Suffolk County Council (SCC), and background traffic growth. In addition, all future year scenarios have been modelled including traffic flows generated by an outage at Sizewell B, which is performed periodically (approximately every 18 months and lasting approximately 6 weeks), so that robust traffic flows are reflected in each scenario.

1.6. The 2034 Reference Case models will subsequently be used to assess the addition of SZC operational traffic.

1.7. A review of traffic growth across Suffolk roads in comparison with forecast growth factors obtained from the DfT's TEMPro software, for the period 2012 to 2018, has been undertaken and presented in section 4 of this technical note for the purposes of demonstrating the reasoning for constraining overall growth to TEMPro. This analysis also provides confidence that the base year of 2015 is a valid basis for forecasting across a long-term timescale. Although traffic growth may fluctuate in reality more than predicted by a TEMPro forecast, in the long-term the actual growth is shown to be broadly in line with that forecasted, so that it can be inferred that the 2015 base model would provide a robust representation of forecast year traffic volumes.

1.8. This document details the methodology applied to develop the 2034 Reference Case models traffic demand and highway network improvements.

2.0 COMMITTED DEVELOPMENT

2.1 Forecast year traffic demand is estimated using one of two methods:

- Specific trip generation and distribution, for committed developments
- Background traffic growth (applied across the model), for other developments and socio-economic factors such as changes in car ownership.

2.2 Although not all developments have been granted planning permission at this stage, the following developments shown in Table 1 are considered by SCC to be 'committed' for the purpose of including them explicitly within the Reference Case models.

Table 1 – Committed Developments

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2034
1	Adastral Park	Suffolk Coastal District Council	60,200m^2 (B1) 2,000 homes (C3) 180 bed hotel (C1) mixed use local centre (1.82ha) – health care provision (D1), community Centre (D1), retail (A1), Café (A3), Public house (A4), Takeaway (A5) Two form entry primary school (D1) expansion of university (2.3ha) (D1)	Partial: approximately 1,325 homes (25 by 2021, 100 annually thereafter), and 344 jobs
2	Uniserve, Clickett Hill	Suffolk Coastal District Council	B8 distribution facility – 46,575m^2 (warehouse), 990m^2 (office)	100%
3	Martlesham	Suffolk Coastal District Council	180 homes (38 dwellings occupied at June 2015, 142 remaining)	100%
4	Ipswich Garden Suburb (North Ipswich)	Ipswich Borough Council	<u>Four areas:</u> Fonnereau Village Henley Village Red House Village Ipswich School site 3,500 dwellings District Centre – up to 2,000m^2 convenience retail, up to 1,220m^2 comparison retail, up to 1,320m^2 services including A1 to A5, health centre, library, police office, community centre	Partial: approximately 3,390 dwellings plus all retail) as agreed with SCC

ID	DEVELOPMENT	AUTHORITY	DESCRIPTION	PROPORTION OF DEVELOPMENT INCLUDED IN 2034
			Two Local Centres – up to 500m^2 convenience retail, up to 600m^2 comparison retail, up to 500m^2 services including A1 to A5	
			Secondary school	
			Three primary schools	
			Public open space and a country park	
5	Trinity Park	Ipswich Borough Council	300 homes	100%
6	Futura Park	Ipswich Borough Council	Phase 1 – 10,008m^2 (A1 – Food Retail), 6,186m^2 (A1 – Non-Food Retail)	100%
			Phase 2 – 10,350^2 (B1), 4,050m^2 (B2), 31,680m^2 (B8)	
7	Brooke Peninsula, Lowestoft	Waveney District Council	850 homes	100%
8	Felixstowe Port	Suffolk Coastal District Council	Further 1,650 HGV movements per day by 2023	100%
9	Belstead House	Babergh	155 homes	100%
10	Wolsey Grange	Babergh	475 homes	100%
			Primary school (210 pupils)	
			Leisure park	
11	Woods Meadow	Suffolk Coastal District Council	180 homes	100%
12	Fairfield Road, Framlingham	Suffolk Coastal District Council	163 homes	100%
13	Mount Pleasant, Framlingham	Suffolk Coastal District Council	95 homes	100%
14	Saxmundham HSA	Suffolk Coastal District Council	800 homes	100%
			559 jobs	

2.3 For the developments shown in Table 1, the proposed trip generation has been derived from their respective Transport Assessments. Each individual development is now discussed in more detail.

2.4 The calculation of traffic generated by 'Sizewell B Outage', which is included in all forecast year scenarios, is described in section 6.0.

Adastral Park

2.5 Adastral Park is located immediately to the east of the A12, 8.5km north of the centre of Ipswich, and the proposal for the site is for a mixed-use development as detailed in Table 1. The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C operational traffic:

- Approximately 1,325 homes by 2034, of 2,000 homes at completion
- Approximately 344 jobs by 2034, of 2,000 jobs at completion

2.6 The net trip generation for the full development is set out in Table 2 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 2 – Adastral Park peak hour Car trips (full development)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	50[1]	579	560	302
Primary School	14	0	0	0
Commuting	202	10	8	160
Service	43	4	3	25
Visitors	13	11	11	13
Hotel	26	33	31	24
Postgraduate Research	45	7	3	32
Overall Traffic Generation	**393**	**644**	**616**	**556**

Source: Table 28 within the 'Adastral Park' Transport Assessment (April 2009)

2.7 The residential and primary school trips were factored by 1,325 / 2,000 homes, whilst all other trip purposes were factored by 344 / 2,000 jobs to, provide 2034 trip generation as shown in Table 3.

Table 3 – Adastral Park peak hour Car trips (2034)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential trips	33	384	371	200
Primary school trips	9	0	0	0
All other trips	57	11	10	44
Overall Traffic Generation	**99**	**395**	**381**	**244**

2.8 Trip rates for other hours were taken from Appendix 14 of the TA for residential and primary school trips, and from the Wolsey Grange development TA for all other trips, which for the purposes of calculating ratios are classed as employment trips. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

[1] Trip volumes in Table 2 were taken from Table 28 of the Transport Assessment (Adastral Park Transport Assessment, April 2009), which had been adjusted to take account of double counting from the original residential trip volumes in Table 19 of the Transport Assessment.

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
- 16:00-17:00 / 17:00-18:00 (08:00-09:00 for primary school trips)
- 18:00-19:00 / 17:00-18:00 (08:00-09:00 for primary school trips)

2.9 The resulting ratios are presented in Table 4 and Table *5*.

Table 4 – Adastral Park trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.09	0.35	0.17	0.64	**0**	**0**	**0.51**	**0.54**
Primary school	0.00	0.00	0.02	0.01	0.39	0.28	**0**	**0**	**0.04**	**0.02**
Employment	0.00	0.00	0.59	0.12	1.43	0.25	**0**	**0**	**0.41**	**0.49**

Table 5 – Adastral Park trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.45	0.28	0.45	0.31	0.40	0.34	0.54	0.31	**0.84**	**0.91**	**0.83**	**0.99**	**0.75**	**1.09**
Employment	0.22	0.40	0.22	0.81	0.10	0.47	0.18	1.14	**1.24**	**0.35**	**1.22**	**0.71**	**0.59**	**0.41**
NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		08:00-09:00 (AM PEAK)		**RATIO (3-4PM / 8-9AM)**		**RATIO (4-5PM / 8-9AM)**		**RATIO (6-7PM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Primary school	0.26	0.31	0.03	0.05	0.00	0.00	0.39	0.28	**0.66**	**1.10**	**0.08**	**0.19**	**0**	**0**

2.10 These ratios, once applied to the relevant trip volumes shown in Table 3, yielded trip volumes for the modelled hours presented in Table 6.

Table 6 – Adastral Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	Arr	Dep	Arr	Dep	Arr	Dep
Residential	0	0	17	208	33	384	312	182	308	199	371	200	278	218
Primary school	0	0	0	0	9	0	6	0	1	0	0	0	0	0
All other trips	0	0	23	5	57	11	12	15	12	31	10	44	6	18

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	Arr	Dep	Arr	Dep	Arr	Dep
Overall Traffic Generation	**0**	**0**	**41**	**213**	**99**	**395**	**330**	**197**	**321**	**230**	**381**	**244**	**283**	**236**

2.11 Access to the development will be via:

- Existing modified access
- New highway access from C356 Newbourne Road / Heath Road / Waldringfield Road
- New highway access from A12 north of Foxhall Road

2.12 Other highway improvements designed to mitigate the impact of the development on the surrounding highway network, which were set out in an updated TA (December 2017), include the following:

- Partial signalisation of A12 / Foxhall Road, A12 / Barrack Square, and A12 / Anson Road roundabouts, and the A12 / A14 Seven Hills junction
- Signalisation of Newbourne Road / site access
- New signalised access on the A12 between Foxhall Road and Barrack Square
- Reduction in speed limit (50mph) between signalised A12 / Foxhall Road and A12 / A1214 junctions in accordance with DfT guidance

2.13 For the purposes of the Sizewell C 2034 Reference Case modelling, it is assumed all mitigation except the A12 / Anson Road roundabout will be completed by 2034. This phasing is based on the Section 106 agreement provided by SCC which provides the trigger points for the improvements coming forward in line with housing completion, and the assumed level of build out provided SCC.

2.14 No signal timings were included in the TA for the proposed junction improvements, therefore approximate signal timings were applied in the VISUM models to provide minimal delays to the A12 through movements.

2.15

2.16 There is also a bus strategy associated with the development with the existing high quality bus route retained and supplemented by new routes servicing the development and providing a faster, more direct route to and from Ipswich town centre and the railway station along with a new service to Woodbridge. This was not included in the VISUM model as it does not affect the calculations of public transport or private transport demand or the resultant highway assignment, for the Sizewell C assessment.

Martlesham

2.17 The site is located between Main Road on the northern side and Felixstowe Road on the eastern side approximately two miles to the east of Ipswich. The site is surrounded by residential properties on the northern side of Main Road including along the frontage on the eastern side. There is a Tesco superstore on the southern side and the A12 dual carriageway to the west.

2.18 The development comprises 180 houses, and the overall trip generation for the development is set out in Table 7, which is taken from the TA that accompanied the planning application.

Table 7 – Martlesham peak hour Car trips (full 180 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	57	78	85	57

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Overall Traffic Generation	**57**	**78**	**85**	**57**

Source: Table 5.2 within the 'Martlesham' Transport Assessment (September 2011)

2.19 The development however is now completed and 38 dwellings were occupied at June 2015, therefore some trips are already included in the 2015 Base model. Trips generated by the remaining 142 dwellings were calculated for inclusion in the Reference Case model, as shown in Table 8.

Table 8 – Martlesham peak hour Car trips (remaining 142 houses)

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential (commuting)	45	62	67	45
Overall Traffic Generation	**45**	**62**	**67**	**45**

2.20 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table *5* applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 8. The resulting trips for all seven modelled hours are shown in Table 9.

Table 9 – Martlesham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**23**	**33**	**45**	**62**	**56**	**41**	**56**	**45**	**67**	**45**	**50**	**49**

2.21 Junction improvements associated with the development are as follows:

- Provision of a 7.3m wide access from a new ghost-island right turn junction onto Main Road
- Provision of an emergency access onto Felixstowe Road on the eastern boundary

Ipswich Garden Suburb

2.22 The site is located north of Ipswich in the area bounded by the A1214, Henley Road, Tuddenham Road and Lower Road, and is divided by the B1077 Westerfield Road and the railway line.

2.23 The development is a proposed mixed use including 3,500 dwellings, schools and retail and is spread across four areas:

- Fonnereau Village (Land West of Westerfield Road)
- Henley Village (north of railway line, west of Westerfield Road)
- Red House Village (east of Westerfield Road)
- Ipswich School site

2.24 The timescales for development build-out have been agreed with Suffolk County Council as follows, for the purposes of assessing the Sizewell C operational traffic:

– Approximately 3,390 homes by 2034

– Approximately 114 jobs by 2034 (all retail development)

2.25 The trip generation for the full development, taken from Appendix 10 of the TA which described the S-Paramics micro-simulation assessment of the Ipswich Garden Suburb development, is shown in Table 10 for five of the seven modelled hours.

Table 10 – Ipswich Garden Suburb peak hour Car trips (full development)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential (Phase 1)	7	25	12	50	30	19	35	21	27	19
Residential (Phase 2)	34	126	60	248	149	96	173	105	134	95
Food Retail	30	16	69	49	118	124	124	127	98	119
Non-Food Retail	26	25	32	32	29	36	45	39	33	34
Ipswich School Site (resi)	14	50	24	99	60	38	69	42	54	38
Henley Village (resi)	50	185	88	363	219	141	253	154	197	139
Red House Village (resi)	54	202	96	396	239	154	276	168	215	151
Overall Traffic Generation	**215**	**629**	**381**	**1237**	**844**	**608**	**975**	**656**	**758**	**595**

Source: Tables 9 and 12 within Appendix 10 of the 'Ipswich Garden Suburb' Transport Assessment (June 2014)

2.26 The total residential trips were factored by 3,390 / 3,500 homes and all retail trips were included to provide 2034 trip generation for these hours as shown in Table 11.

Table 11 – Ipswich Garden Suburb peak hour Car trips (2034)

NATURE OF TRIPS	07:00-08:00		08:00-09:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	154	570	271	1120	675	434	781	475	607	428
Retail	56	41	101	81	147	160	169	166	131	153
Overall Traffic Generation	**210**	**611**	**372**	**1201**	**822**	**594**	**950**	**641**	**738**	**581**

2.27 To identify the vehicle trips for the remaining two modelled hours, the ratios of trip rates taken from the TRICS database, using the same categories quoted in the development TA, were derived as follows:

– 06:00-07:00 / 08:00-09:00

– 15:00-16:00 / 17:00-18:00

2.28 The resulting ratios are presented in Table 12.

Table 12 – Ipswich Garden Suburb trip rate ratios for other hours

NATURE OF TRIPS	06:00-07:00		08:00-09:00 (AM PEAK)		15:00-16:00		17:00-18:00 (PM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (3-4PM / 5-6PM)**	
	ARR	DEP	ARR	DEP			ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.16	0.42	0.27	0.20	0.37	0.21	**0.00**	**0.00**	**0.73**	**0.96**
Food Retail	0.31	0.06	2.55	1.90	4.62	4.86	5.08	5.34	**0.12**	**0.03**	**0.91**	**0.91**

2.29 These ratios, once applied to the relevant trip volumes shown in Table 11, yielded trip volumes for the modelled hours presented in Table 13.

Table 13 – Ipswich Garden Suburb Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	154	570	271	1120	570	457	675	434	781	475	607	428
Food Retail	8	1	56	41	101	81	150	152	147	160	169	166	131	153
Overall Traffic Generation	**8**	**1**	**210**	**611**	**372**	**1201**	**719**	**609**	**822**	**594**	**950**	**641**	**738**	**581**

2.30 Access to the development will be via a new priority junction on Henley Road, and several new access junctions on Westerfield Road that will be reconfigured in a gyratory layout to accommodate the new accesses.

2.31 Since the Sizewell C VISUM model does not include Henley Road, the signalised junction of Henley Road / A1214 has been coded in the 2034 Reference Case models to serve this side of the development.

2.32 The gyratory system on Westerfield Road, including two two-way roads on the western side and separate access/egress roads on the eastern side, has also been included in the 2034 Reference Case VISUM models.

2.33 The signal timings modelled in VISUM for the new junction with Westerfield Road have been obtained from Appendix 15 of the Transport Assessment. Signal timings for the existing A1214 / Henley Road junction were approximated to provide minimal delays through this section of the network, since the junction was not included in the Sizewell C 2015 Base Model.

2.34 To mitigate the impact of the development on the surrounding highway network the development proposals also include:

- Widening of the A1214 section between Henley Road and the B1077 Westerfield Road
- Widening of approach lanes to A1214 / B1077 roundabout

Uniserve, Clickett Hill

2.35 The Clickett Hill site is located immediately to the west of the A14 Junction 61. The proposals are for a B8 distribution centre comprising a 46,575m^2 warehouse and 990m^2 of office space. Goods will be transferred via HGV containerised delivery from the Port of Felixstowe to the warehouse, then the HGVs will transfer either back to the Port or onward to another destination.

2.36 Whilst the opening year in the Transport Assessment is 2015, in order to provide a robust assessment the development traffic is assumed to be excluded from the 2015 base year VISUM models and therefore is required to be included as committed development in the Reference Case models.

2.37 The overall trip generation for the development, for all vehicles and HGVs, is set out below in Table 14, which is taken from the TA that accompanied the planning application. Although the 'Inter Peak Hour' for this

development is proposed to fall in the period 14:00-15:00, these trip volumes are inferred for the 15:00-16:00 VISUM modelled hour.

Table 14 – Clickett Hill peak hour vehicle trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)		INTER PEAK (15:00-16:00)	
	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0.067	0.031	0.025	0.077	0.072	0.105
HGV trip rates	0.013	0.008	0.008	0.011	0.018	0.016
Total Vehicle movements	**32**	**15**	**12**	**36**	**34**	**50**

Source: Tables 5.1, 5.2 and 5.3 within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.38 The TRICS data contained within Appendix C of the development TA was used to calculate similar trips for the other four modelled hours, which are shown in Table 15.

Table 15 – Clickett Hill vehicle trips – other hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		16:00-17:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
All vehicle trip rates	0	0	0.075	0.054	0.056	0.091	0.019	0.045
HGV trip rates	0	0	0.01	0.01	0.018	0.011	0.005	0.008
Total Vehicle movements	**0**	**0**	**36**	**26**	**27**	**43**	**9**	**21**

Source: Appendix C within the 'Uniserve, Clickett Hill' Transport Assessment (December 2013)

2.39 As stated in the Transport Assessment (section 5.2), HGV movements to and from the Port are already permitted under the scope of the Port Expansion (discussed later in this technical note). Therefore, for the purposes of including the Clickett Hill development trips within the Sizewell C Reference Case VISUM models, the total vehicle trips shown in Table 14 and Table 15 have been adjusted using the 'HGV' and 'All Vehicle' trip rates to provide an estimate of Car trips only, as shown in Table 16.

Table 16 – Clickett Hill Car trips

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Car trips	**0**	**0**	**31**	**21**	**26**	**11**	**26**	**42**	**18**	**38**	**8**	**31**	**7**	**17**

2.40 Access to the site will be via the existing A14 Junction 61.

Trinity Park

2.41 The site is located between Felixstowe Road and Bucklesham Road in the south-east of Ipswich, to the east of Warren Heath.

2.42 The development comprises 300 homes as a mixture of private and affordable housing, expected to be constructed and occupied by 2017. The overall trip generation for the development is set out below in Table 17, which is taken from the TA that accompanied the planning application.

Table 17 – Trinity Park peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Private Housing	37	92	79	46
Affordable Housing	12	30	25	14
Overall Traffic Generation	**48**	**122**	**104**	**60**

Source: Table 5.6 within the 'Trinity Park' Transport Assessment (August 2012)

2.43 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 17. The resulting trips for all seven modelled hours are shown in Table 18.

Table 18 – Trinity Park Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**25**	**66**	**48**	**122**	**88**	**55**	**86**	**60**	**104**	**60**	**78**	**65**

2.44 Access to the site is proposed to be via two new roundabouts on Felixstowe Road, to the east of the existing roundabout, which currently serves the Trinity Park Conference and Events Centre.

Futura Park

2.45 Futura Park is located between the A1189 and Nacton Road, to the south east of Ipswich.

2.46 The development proposals comprise a mix of land uses to be completed in two phases, as described in Table 19. Both phases are due to be completed by 2023, so the full development trips are included in the Reference Case models.

2.47 The overall trip generation for the development is set out in Table 19, which is taken from the Transport Assessment that accompanied the planning application.

Table 19 – Futura Park gross peak hour person trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	152	75	195	211
	Non-Food Retail	48	17	64	72
2	Non-Food Retail	44	28	94	106
	Office	173	23	25	128
	Industrial	15	3	2	14
	Warehousing	42	26	15	38
Overall Traffic Generation		**474**	**172**	**395**	**569**

Source: Tables 6.3 and 6.6 within the 'Futura Park' Transport Assessment (September 2011)

2.48 These trip volumes represent all modes, therefore mode split factors were applied to calculate car trips. The 'Car' mode shares, obtained from the TA, are 54% for retail trips and 80% for employees. The resulting Car trips are shown in Table 20.

Table 20 – Futura Park gross peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	105	114
	Non-Food Retail	26	9	35	39
2	Non-Food Retail	24	15	51	57
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**225**	**353**

2.49 Finally, an assessment was made within the TA to distinguish 'primary' retail trips (additional to the existing traffic) from 'non-primary' retail trips (an existing retail trip that diverts to the new retail location). The TA states that, in the AM peak all retail trips are assumed to be primary, whilst in the PM peak 60% are assumed to be primary and 40% non-primary.

2.50 Non-primary trips are not included in the VISUM model, since the main part of the trip is assumed to be already modelled. The primary trip volumes are shown in Table 21.

Table 21 – Futura Park net peak hour Car trips

PHASE	NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
		ARR	DEP	ARR	DEP
1	Food Retail	82	41	63	68
	Non-Food Retail	26	9	21	23
2	Non-Food Retail	24	15	31	34
	Office	138	18	20	102
	Industrial	12	2	2	11
	Warehousing	34	21	12	30
Overall Traffic Generation		**316**	**106**	**149**	**269**

2.51 Trip rates for other hours were taken from Appendix 14 of the TA for most land uses, although 'Food Retail' was not provided so these were obtained from the TRICS database. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.52 The resulting ratios are presented in Table 22 and Table 23.

Table 22 – Futura Park trip rate ratios for AM hours

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
		ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	0.31	0.06	1.40	0.86	2.55	1.90	**0.12**	**0.03**	**0.55**	**0.45**
	Non-Food Retail	0.00	0.00	0.00	0.00	0.00	0.00	**0**	**0**	**0**	**0**
2	Non-Food Retail	0.00	0.00	0.28	0.01	0.81	0.56	**0.00**	**0.00**	**0.34**	**0.02**
	Office	0.00	0.00	0.71	0.08	1.56	0.17	**0.00**	**0.00**	**0.46**	**0.46**
	Industrial	0.00	0.00	0.25	0.06	0.26	0.06	**0.00**	**0.00**	**0.96**	**0.94**
	Warehousing	0.27	0.21	0.11	0.07	0.13	0.11	**2.09**	**1.97**	**0.85**	**0.69**

Table 23 – Futura Park trip rate ratios for PM hours

PHASE	NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
1	Food Retail	4.62	4.86	4.91	4.84	4.52	4.93	5.08	5.34	**0.91**	**0.91**	**0.97**	**0.91**	**0.89**	**0.92**
	Non-Food Retail	2.19	2.49	1.50	2.03	0.77	1.09	1.32	1.47	**1.66**	**1.70**	**1.14**	**1.38**	**0.58**	**0.75**
2	Non-Food Retail	2.22	2.67	2.03	2.19	1.86	1.70	1.68	1.84	**1.32**	**1.45**	**1.21**	**1.19**	**1.11**	**0.92**
	Office	0.21	0.38	0.19	1.00	0.03	0.27	0.19	1.24	**1.09**	**0.31**	**0.96**	**0.81**	**0.16**	**0.22**
	Industrial	0.07	0.10	0.05	0.30	0.05	0.07	0.03	0.21	**2.74**	**0.50**	**1.96**	**1.46**	**1.67**	**0.32**
	Warehousing	0.07	0.10	0.09	0.11	0.05	0.08	0.06	0.15	**1.15**	**0.69**	**1.50**	**0.71**	**0.85**	**0.56**

2.53 These ratios, once applied to the trip volumes shown in Table 21, yielded trip volumes for the modelled hours presented in Table 24.

Table 24 – Futura Park Car trip volumes

PHASE	NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
		ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
1	Food Retail	10	1	45	19	82	41	57	62	61	62	63	68	56	63
	Non-Food Retail	0	0	0	0	26	9	35	40	24	32	21	23	12	17
2	Non-Food Retail	0	0	8	0	24	15	40	50	37	41	31	34	34	32
	Office	0	0	63	8	138	18	22	31	19	82	20	102	3	22
	Industrial	0	0	12	2	12	2	5	5	4	16	2	11	3	4
	Warehousing	71	41	29	14	34	21	14	21	18	21	12	30	10	17
Overall Traffic Generation		**81**	**43**	**157**	**43**	**316**	**106**	**174**	**209**	**163**	**254**	**149**	**269**	**119**	**154**

2.54 Access to the development will be via:

- New access James Bennett Avenue on A1189 / Central Avenue roundabout
- New priority junction access Crane Boulevard with Nacton Road

2.55 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Re-lining of A1189 between Central Avenue and Felixstowe Road roundabouts, to provide two lanes northbound approaching Felixstowe Road roundabout and two lanes southbound approaching Central Avenue roundabout

Brooke Peninsula

2.56 The site is located between the A146 Waveney Drive and Lake Lothing in Lowestoft. The proposal for the site is for a mixed use development including 850 houses as well a café and a primary school, with completion in 2023, so the development is assumed to be fully occupied by 2034.

2.57 The net trip generation for the development is set out below in Table 25 for the AM peak and PM peak hours, which is taken from the Transport Assessment that accompanied the planning application.

Table 25 – Brooke Peninsula peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Taxi	1	4	3	2
Car driver	107	347	283	177
Total Resi	**108**	**351**	**286**	**179**
School	40	18	2	5
Café	3	1	6	4
Overall Traffic Generation	**151**	**370**	**294**	**188**

Source: Table 7.4 within the 'Brooke Peninsula' Transport Assessment (October 2013)

2.58 Trip rates for other hours were taken from Appendix N of the TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.59 The resulting ratios are presented in Table 26 and Table 27.

Table 26 – Brooke Peninsula trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.00	0.00	0.71	0.23	0.15	0.36	**0.00**	**0.00**	**4.67**	**0.64**
Cafe	0.00	0.00	0.55	0.11	0.55	0.66	**0.00**	**0.00**	**1.00**	**0.17**
Primary school	0.00	0.00	0.02	0.01	0.25	0.18	**0.00**	**0.00**	**0.08**	**0.03**

Table 27 – Brooke Peninsula trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicle occupants)	0.26	0.21	0.30	0.17	0.23	0.22	0.37	0.24	**0.70**	**0.88**	**0.81**	**0.70**	**0.62**	**0.92**
Café	0.66	1.43	1.54	0.99	3.19	1.87	1.10	0.77	**0.60**	**1.86**	**1.40**	**1.29**	**2.90**	**2.43**
Primary school	0.16	0.21	0.03	0.05	0.01	0.01	0.01	0.02	**19.63**	**11.56**	**3.75**	**2.67**	**1.38**	**0.72**

2.60 These ratios, once applied to the trip volumes shown in Table 25, yielded trip volumes for the modelled hours presented in Table 28.

Table 28 – Brooke Peninsula Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	504	225	108	351	199	158	232	125	286	179	177	165
Café	0	0	3	0	3	1	4	7	8	5	6	4	17	10
Primary school	0	0	3	1	40	18	39	58	8	13	2	5	3	4
Overall Traffic Generation	**0**	**0**	**511**	**226**	**151**	**370**	**242**	**223**	**247**	**144**	**294**	**188**	**197**	**178**

2.61 Access to the development will be via:

- New signalised access onto A146 Waveney Drive
- Existing accesses Nelson Wharf, School Road and Heath Road

2.62 The signal timings modelled in VISUM for the new main junction with Waveney Drive have been obtained from Appendix P of the Transport Assessment.

Felixstowe Port Expansion

2.63 In November 2003, Felixstowe Port applied for a Harbour Revision Order (HRO), planning permission and other necessary consents for works to expand the capacity of the Port. This was granted in 2006 and subsequently varied in 2008 to allow revised phasing.

2.64 Since the public inquiry in 2004, the background conditions that informed the TA have changed substantially which necessitated a review of the traffic generation assumed at that time. Table 4.1 within the Berth 9 Quay Extension – Statement of Environmental Compliance (January 2013) report suggests that, by 2023, there could be a further 1,650 HGV movements per day with the full expansion of the port.

2.65 Figure 1 shows the HGV arrival profile for the Port of Felixstowe. The 1,650 HGV movements are profiled in the VISUM Reference Case according to the information shown in Figure 1 and, for the purposes of modelling, we assume that all of these HGV movements will be on the A14 south of Ipswich, with the majority (75%) then remaining on the A14 but some (25%) on the A12 south of Ipswich. These destinations are represented by VISUM model zone 11 and zone 14 respectively.

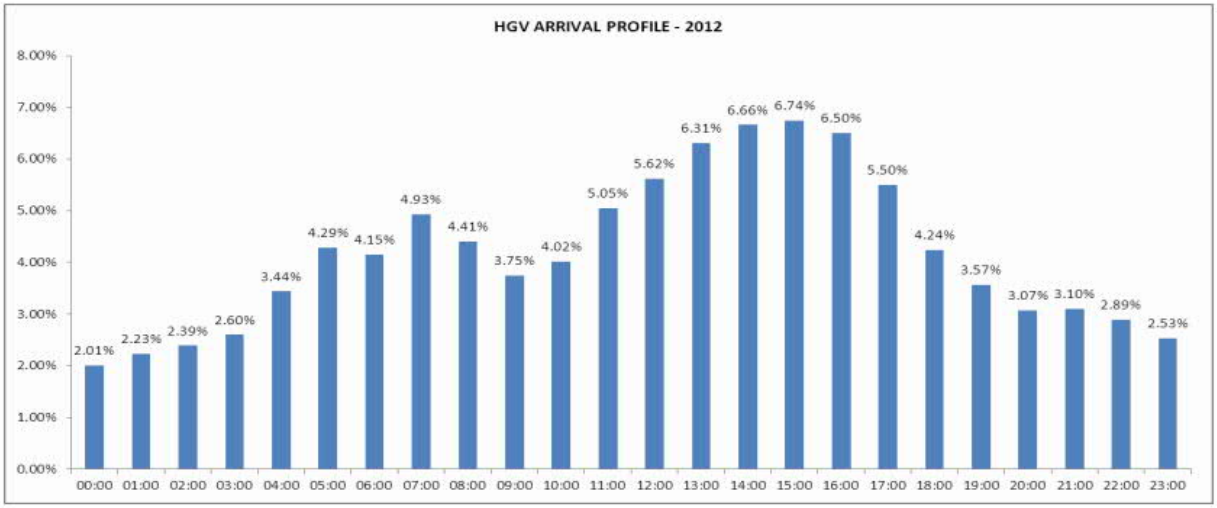


Figure 1 – HGV arrival profile- presentation to EDFE by the Port of Felixstowe (February 2014)

2.66 This results in HGV volumes being added to the matrices as shown in Table 29.

Table 29 – Felixstowe Port Expansion – HGV trip volumes

HOUR	%	TRIPS		TO/FROM A14 (ZONE 11)		TO/FROM A12 (ZONE 14)	
		ARR	DEP	ARR	DEP	ARR	DEP
				75%		**25%**	
06:00-07:00	4.15%	**34**	**34**	26	26	8	8
07:00-08:00	4.93%	**41**	**41**	31	31	10	10
08:00-09:00	4.41%	**36**	**36**	27	27	9	9
15:00-16:00	6.74%	**56**	**56**	42	42	14	14
16:00-17:00	6.50%	**54**	**54**	40	40	14	14
17:00-18:00	5.50%	**45**	**45**	34	34	11	11
18:00-19:00	4.24%	**35**	**35**	26	26	9	9
Total Daily	100%	825	825				
		1,650					

2.67 The port expansion is also likely to be associated with an increased number of employees at the site, which in turn may result in additional staff car movements. In the absence of reliable information these trips were not included explicitly in the model but we assume have been taken into account in the overall growth assumptions.

Belstead House

2.68 The site is located on Belstead Meadows, to the east of the A1214 and north of the A14, to the south-west of Ipswich.

2.69 The development comprises 155 homes which are expected to be constructed and occupied by 2020. The overall trip generation for the development is set out below in Table 30, which is taken from the TA that accompanied the planning application.

Table 30 – Belstead House peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	23	49	56	31
Overall Traffic Generation	**23**	**49**	**56**	**31**

Source: Table 7.1 within the 'Belstead House' Transport Assessment (April 2015)

2.70 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 30. The resulting trips for all seven modelled hours are shown in Table 31.

Table 31 – Belstead House Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**12**	**27**	**23**	**49**	**47**	**28**	**47**	**31**	**56**	**31**	**42**	**34**

2.71 Trips are expected to use the existing Scrivener Drive access from the A1214.

Wolsey Grange

2.72 The site is located to the south of the A1071, in the area bounded by the A14 and A1214, to the south-west of Ipswich.

2.73 The development comprises 475 homes along with a primary school and a leisure park, which are expected to be constructed and occupied by 2023. The overall trip generation for the development is set out below in Table 32, which is taken from the TA that accompanied the planning application.

Table 32 – Wolsey Grange peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	67	201	186	117
Primary school	64	46	2	5
Leisure park	61	49	257	161
Overall Traffic Generation	**192**	**296**	**445**	**283**

Source: Tables 7.5, 7.7 and 7.9 within the 'Wolsey Grange'' Transport Assessment (July 2015)

2.74 Trip rates for other hours were taken from Appendix G of the development TA. To identify the vehicle trips for the other five modelled hours, the ratio of trip rates from either the 08:00-09:00 or 17:00-18:00 hour was used, as follows:

- 06:00-07:00 / 08:00-09:00
- 07:00-08:00 / 08:00-09:00
- 15:00-16:00 / 17:00-18:00
- 16:00-17:00 / 17:00-18:00
- 18:00-19:00 / 17:00-18:00

2.75 The resulting ratios are presented in Table 33 and Table 34.

Table 33 – Wolsey Grange trip rate ratios for AM hours

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00 (AM PEAK)		**RATIO (6-7AM / 8-9AM)**		**RATIO (7-8AM / 8-9AM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.00	0.00	0.08	0.28	0.14	0.42	**0.00**	**0.00**	**0.59**	**0.66**
Primary school (vehicles per pupil)	0.01	0.00	0.02	0.01	0.36	0.27	**0.04**	**0.01**	**0.04**	**0.02**
Leisure park (vehicles per 100sqm)	0.46	0.18	0.26	0.23	0.54	0.43	**0.86**	**0.41**	**0.49**	**0.53**

Table 34 – Wolsey Grange trip rate ratios for PM hours

NATURE OF TRIPS	15:00-16:00		16:00-17:00		18:00-19:00		17:00-18:00 (PM PEAK)		**RATIO (3-4PM / 5-6PM)**		**RATIO (4-5PM / 5-6PM)**		**RATIO (6-7PM / 5-6PM)**	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	**ARR**	**DEP**	**ARR**	**DEP**	**ARR**	**DEP**
Residential (vehicles per dwelling)	0.31	0.24	0.32	0.19	0.29	0.24	0.39	0.25	**0.78**	**0.95**	**0.81**	**0.78**	**0.74**	**0.97**
Primary school (vehicles per pupil)	0.28	0.31	0.03	0.05	0.01	0.01	0.01	0.03	**28.30**	**12.56**	**2.70**	**1.88**	**0.70**	**0.52**
Leisure park (vehicles per 100sqm)	0.98	1.14	1.55	1.27	2.35	1.73	2.26	1.42	**0.43**	**0.81**	**0.69**	**0.90**	**1.04**	**1.22**

2.76 These ratios, once applied to the relevant trip volumes shown in Table 32, yielded trip volumes for the modelled hours presented in Table 35.

Table 35 – Wolsey Grange Car trip volumes

Nature of Trips	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	40	133	67	201	146	111	150	91	186	117	138	113
Primary school	3	1	3	1	64	46	48	51	5	9	2	5	1	2
Leisurepark	52	20	30	26	61	49	111	130	176	145	257	161	267	197
Overall Traffic Generation	**55**	**21**	**72**	**160**	**192**	**296**	**305**	**292**	**332**	**245**	**445**	**283**	**407**	**312**

2.77 Access to the development will be via:

- Existing modified accesses on A1071 and A1214
- New signalised access onto A1071

2.78 To mitigate the impact of the development on the surrounding highway network the development proposals include:

- Signalisation of A1071 / Poplar Lane junction
- Signalisation of southbound arm of A1214 / Scrivener Road roundabout
- Improvements to A1071 / A1214 signalised junction and A1071 / B1113 roundabout

2.79 The signal timings modelled in VISUM were obtained from Appendix H of the Transport Assessment.

Woods Meadow

2.80 The site is located to the north of the A1152 Woods Lane, east of the Bredfield Road junction.

2.81 The development comprises 180 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 36, which is taken from the TA that accompanied the planning application.

Table 36 – Woods Meadow peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	29	96	96	50
Overall Traffic Generation	**29**	**96**	**96**	**50**

Source: Table 5.4 within the 'Woods Meadow' Transport Assessment (March 2014)

2.82 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 36. The resulting trips for all seven modelled hours are shown in Table 37.

Table 37 – Woods Meadow Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**15**	**52**	**29**	**96**	**81**	**45**	**80**	**50**	**96**	**50**	**72**	**55**

2.83 The site will be accessed via a new priority junction on Woods Lane.

Fairfield Road, Framlingham

2.84 The site is located to the south of Framlingham, in the area bounded by Fairfield Road, Brick Lane and Infirmary Lane.

2.85 The development comprises 163 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 38, which is taken from the TA that accompanied the planning application.

Table 38 – Fairfield Road peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	21	91	80	39
Overall Traffic Generation	**21**	**91**	**80**	**39**

Source: Table 6.2 within the 'Fairfield Road' Transport Assessment (August 2014)

2.86 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 38. The resulting trips for all seven modelled hours are shown in Table 39.

Table 39 – Fairfield Road Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**11**	**49**	**21**	**91**	**67**	**35**	**66**	**39**	**80**	**39**	**60**	**43**

2.87 It is assumed that the site will be accessed via a simple priority junction on Fairfield Road.

Mount Pleasant, Framlingham

2.88 The site is located to the west of Framlingham, in the area bounded by Mount Pleasant, New Street and Brook Lane.

2.89 The development comprises 95 homes which are expected to be constructed and occupied by 2019. The overall trip generation for the development is set out below in Table 40, which is taken from the TA that accompanied the planning application.

Table 40 – Mount Pleasant peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	19	42	33	21
Overall Traffic Generation	**19**	**42**	**33**	**21**

Source: Table 5.2 within the 'Mount Pleasant' Transport Assessment (June 2015)

2.90 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the 'residential' trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 40. The resulting trips for all seven modelled hours are shown in Table 41.

Table 41 – Mount Pleasant Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Overall Traffic Generation	**0**	**0**	**10**	**23**	**19**	**42**	**28**	**19**	**27**	**21**	**33**	**21**	**25**	**23**

2.91 It is assumed that the site will be accessed via a simple priority junction on Mount Pleasant.

Saxmundham

2.92 The site is located on either side of the A12 near Saxmundham, between the B1119 Saxmundham junction and the B1121 Benhall Green junction.

2.93 The development comprises 800 homes and employment generating 559 jobs. It has been agreed with SCC that it is likely to be completed by 2034 and is therefore included fully in the 2034 Reference Case models.

2.94 The overall trip generation for the development is set out below in Table 42, which was provided by SCC.

Table 42 – Saxmundham peak hour Car trips

NATURE OF TRIPS	AM PEAK (08:00-09:00)		PM PEAK (17:00-18:00)	
	ARR	DEP	ARR	DEP
Residential	222	371	301	203
Employment	143	38	21	118
Overall Traffic Generation	**365**	**409**	**322**	**321**

2.95 In order to derive trips for the other five modelled hours, the same methodology was applied as for the Adastral Park development, using the trip ratios shown in Table 4 and Table 5 applied to either the 08:00-09:00 or 17:00-18:00 hour trips shown in Table 42. The resulting trips for all seven modelled hours are shown in Table 43.

Table 43 – Saxmundham Car trip volumes

NATURE OF TRIPS	06:00-07:00		07:00-08:00		08:00-09:00		15:00-16:00		16:00-17:00		17:00-18:00		18:00-19:00	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Residential	0	0	114	201	222	371	253	184	250	202	301	203	225	222
Employment	0	0	59	18	143	38	26	42	26	84	21	118	12	49
Overall Traffic Generation	**0**	**0**	**173**	**219**	**365**	**409**	**279**	**226**	**276**	**286**	**322**	**321**	**238**	**270**

2.96 The development will be accessed via a new roundabout junction located on the A12 between the B1119 Saxmundham junction and the B1121 Benhall Green junction. Being located on opposite sides of the A12, the employment and housing parts of the development will be accessed via separate arms of the new roundabout.

3.0 DISTRIBUTION

3.1 The committed developments have each been allocated a new zone in the Sizewell C model, and zones containing similar land uses have been used to give trip distributions, which are outlined in Table 44.

Table 44 – Committed development zones

DEVELOPMENT	DEVELOPMENT ZONE	SIMILAR ZONES USED FOR DISTRIBUTION	LAND USE WITHIN DISTRIBUTION ZONE
Adastral Park	1101	339	Mixed use, residential and primary school
Clickett Hill	1102	334	Industrial
Martlesham	1103	339	Mixed use, residential and primary school
Ipswich Garden Suburb	1104	378	Residential, local shops and sports centre
Trinity Park	1105	341	Residential
Futura Park	1106	377	Industrial and retail
Brooke Peninsula	1107	357	Residential and primary school
Felixstowe Port	1108	See Table 20	
Belstead House	1109	381	Mostly residential
Wolsey Grange	1110	369	Residential and retail
Woods Meadow	1111	340	Mostly residential
Fairfield Road	1112	407	Mostly residential
Mount Pleasant	1113	408	Mostly residential
Saxmundham (resi)	1114	463	Mostly residential
Saxmundham (emp)	1115	616	Includes industrial estate

4.0 BACKGROUND TRAFFIC GROWTH

TEMPro

4.1 TEMPro is a software tool that provides projections of growth over time for use in transport models, based on outputs from the National Trip End Model (NTEM). It is a nationally-consistent benchmark of growth and the forecast growth applied in the Sizewell C Reference Case models is consistent with those obtained from TEMPro.

4.2 The Central Growth forecast has been obtained directly from TEMPro using the NTEM version 7.2 datasets. Growth in car trip ends from the unadjusted TEMPro results are presented in Table 45 between 2015 and 2034 for the AM peak, Inter peak and PM peak.

Table 45 – Unadjusted TEMPro growth

TEMPRO ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.1532	1.1640	1.2316	1.2310	1.1666	1.1602
Babergh	1.0168	1.1325	1.1591	1.1530	1.1143	1.0406
Ipswich	1.1664	1.1545	1.2292	1.2292	1.1567	1.1632
Mid Suffolk	1.0211	1.1260	1.1582	1.1515	1.1108	1.0431
South Norfolk	1.2030	1.1608	1.2542	1.2563	1.1778	1.2033
Suffolk Coastal	1.0957	1.1427	1.2013	1.1990	1.1422	1.1134
Waveney	1.0973	1.1504	1.1947	1.1922	1.1424	1.1075

Alternative Planning Assumptions

4.3 The Alternative Planning Assumptions facility within TEMPro was used to remove trips associated with explicitly modelled developments from the forecast total for each district and time period. The resultant growth factors therefore represent the remaining background growth, avoiding double counting of the committed developments with traffic growth forecasts.

4.4 To undertake the adjustment within TEMPro, it is necessary to input the number of jobs and households associated with each of the development modelled explicitly. This information was extracted from the respective TA where available.

4.5 Where the data was not available (often true of employment sites where the number of jobs is not usually provided but instead floorspace is given), the number of jobs was estimated from a number of relevant sites in the TRICS database which provides both gross floor area (GFA) and number of jobs. This provided a proxy 'employee floorspace rate' by land use type, shown in Table 46, which was applied to the development floorspace to produce approximate number of jobs, shown in Table 47.

Table 46 – TRICS employee floorspace rate

LAND USE	NUMBER OF SITES SELECTED	TOTAL GFA (M^2)	TOTAL NUMBER OF JOBS	M^2 PER EMPLOYEE
Warehouse	8	70,128	419	167
Office	12	28,455	2,035	14
Food Retail	9	82,135	3,789	22

LAND USE	NUMBER OF SITES SELECTED	TOTAL GFA (M^2)	TOTAL NUMBER OF JOBS	M^2 PER EMPLOYEE
Non-Food Retail	12	86,275	1,290	67
Industrial	13	108,934	1,878	58

Table 47 – Estimated jobs based on GFA

DEVELOPMENT	LAND USE	DEVELOPMENT GFA (M^2)	NUMBER OF JOBS
Ipswich Garden Suburb	Retail	3,423	114
	Total	**3,423**	**114**
Clickett Hill	Warehouse	46,575	278
	Office	990	71
	Total	**47,565**	**349**
Futura Park	Office	10,350	740
	Warehouse	31,680	189
	Food Retail	10,008	462
	Non-Food Retail	6,186	92
	Industrial	4,050	70
	Total	**62,274**	**1,553**

4.6 Summarised planning assumptions (households and jobs) for the committed developments are shown in Table 48. The TEMPro planning assumptions for these local authorities, before and after adjustment for the committed developments, are shown in Table 49. The resulting adjusted background growth factors are shown in Table 50.

Table 48 – Committed development planning assumptions

DEVELOPMENT	HOUSEHOLDS	JOBS
Belstead House	155	0
Wolsey Grange	475	0
Babergh Total	**630**	**0**
Adastral Park	1,325*	344*
Martlesham	142**	0
Clickett Hill	0	349
Woods Meadow	180	0
Fairfield Road	163	0
Mount Pleasant	95	0
Saxmundham	800	559

DEVELOPMENT	HOUSEHOLDS	JOBS
Suffolk Coastal Total	**2,705**	**1,252**
Ipswich Garden Suburb	3,390*	114*
Trinity Park	300	0
Futura Park	0	1,553
Ipswich Total	**3,690**	**1,667**
Brooke Peninsula, Lowestoft	850	0
Waveney Total	**850**	**0**

** Level of completion agreed with SCC*

*** 180 homes, of which 38 are occupied at June 2015 = 142 remaining*

Table 49 – TEMPro alternative planning assumptions

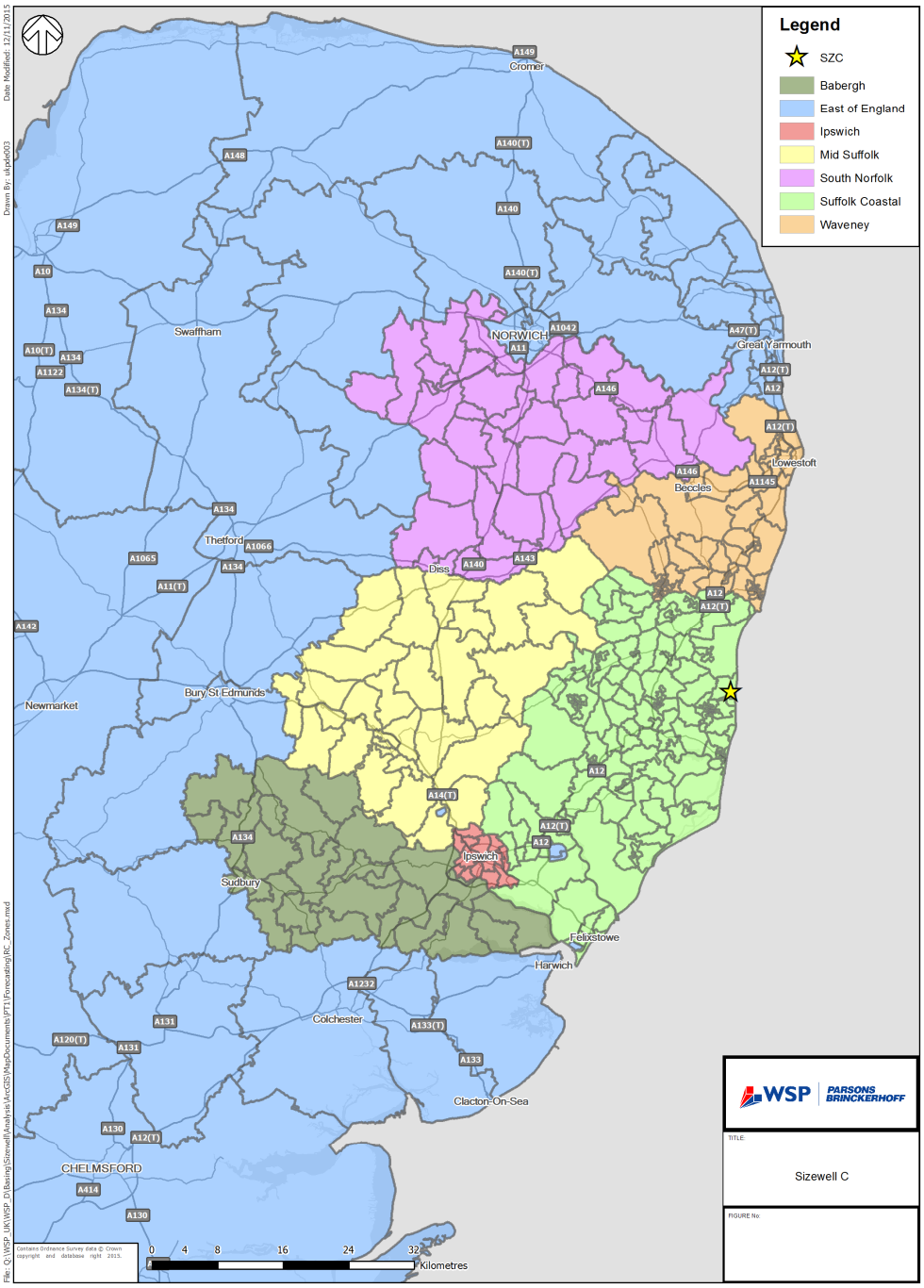
TEMPRO ZONE	TEMPRO PLANNING ASSUMPTIONS					
	2015		2034 UNADJUSTED		2034 ADJUSTED	
	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS	HOUSEHOLDS	JOBS
Babergh	39,374	39,231	44,173	42,406	**43,543**	**42,406**
Ipswich	59,336	78,287	71,894	84,768	**68,204**	**83,101**
Suffolk Coastal	56,191	59,162	68,068	63,841	**65,363**	**62,589**
Waveney	52,639	49,225	60,841	53,347	**59,991**	**53,347**

Table 50 – Adjusted TEMPro growth

TEMPRO ZONE	AM PEAK (07:00-10:00)		INTER PEAK (10:00-16:00)		PM PEAK (16:00-19:00)	
	ORIGIN	DESTINATION	ORIGIN	DESTINATION	ORIGIN	DESTINATION
East of England	1.1532	1.1641	1.2316	1.2310	1.1667	1.1602
Babergh	1.0054	1.1307	1.1518	1.1453	1.1099	1.0301
Ipswich	1.1157	1.1284	1.1904	1.1895	1.1249	1.1158
Mid Suffolk	1.0211	1.1261	1.1583	1.1516	1.1108	1.0432
South Norfolk	1.2030	1.1608	1.2542	1.2564	1.1779	1.2033
Suffolk Coastal	1.0569	1.1177	1.1670	1.1643	1.1136	1.0762
Waveney	1.0856	1.1486	1.1875	1.1849	1.1381	1.0970

4.7 Figure 2 shows the geographical areas to which the adjusted TEMPro growth was applied.

Figure 2 – TEMPro growth geographical areas



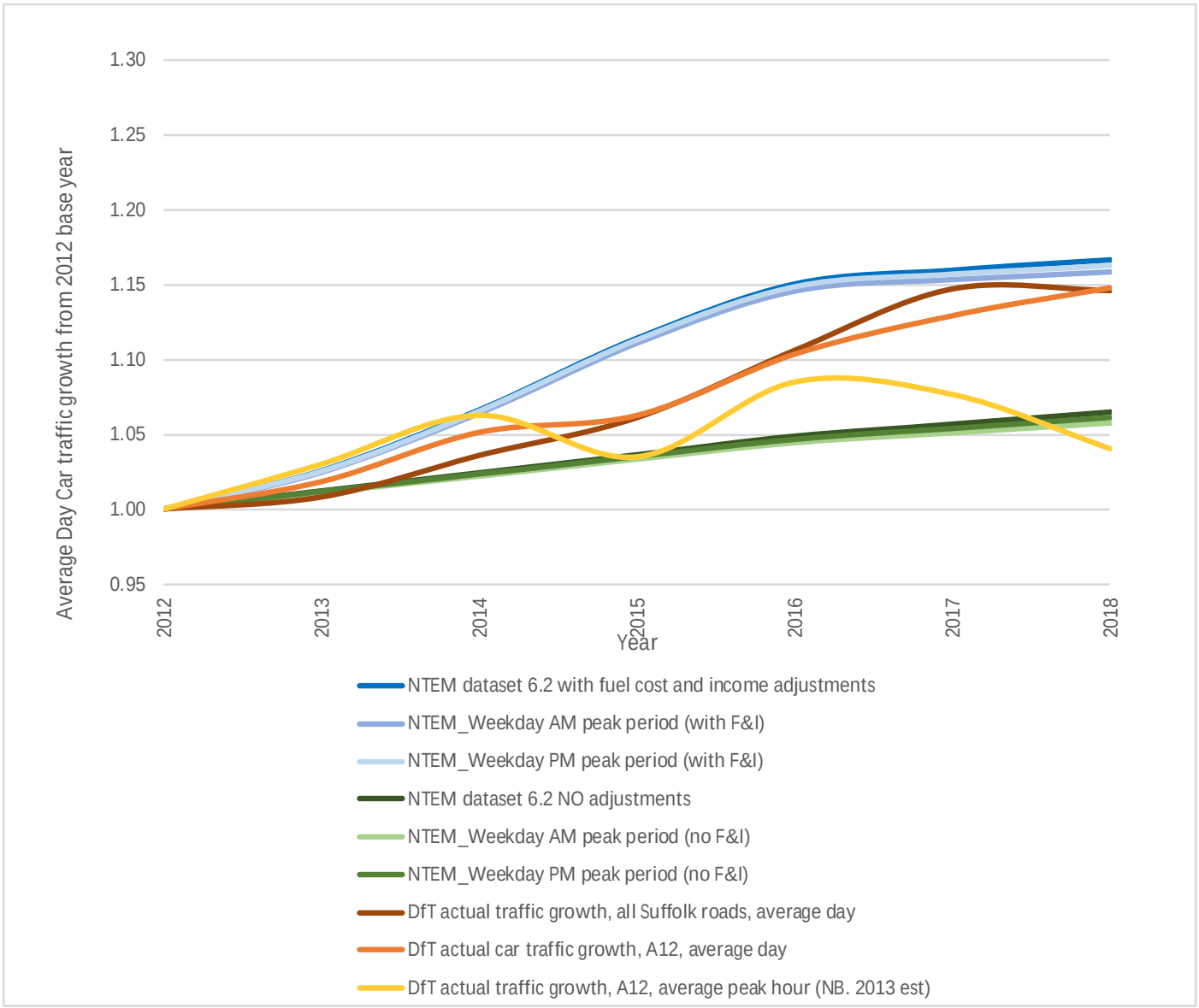
TEMPro Constraint

4.8 The matrix has been constrained to the level of TEMPro growth as set out in Table 50.

4.9 Analysis of historic traffic growth on the A12 and other roads in Suffolk has been undertaken for the period 2012-2018, which demonstrates, as shown in Figure 3, that actual traffic growth was similar or lower than the

forecast TEMPro growth, with application of fuel and income factors, across that period. NTEM dataset 6.2 was used for the comparison, as this would have been the basis for forecasting in 2012.

Figure 3 – Traffic Growth 2012 - 2018



Fuel and income adjustment factors

4.10 As the model being used is "highway only" the forecast demand matrices are uplifted by fuel and income adjustment factors. These represent a combination of factors that result in car travel becoming less expensive over time relative to present day costs and alternative modes, as set out in TAG Unit M4.7. The factors that have been calculated are presented in Table 51.

4.11 The fuel and income factors have been applied post-constraint, but only to those elements of the matrix that do not include the committed developments.

Table 51 – Fuel and income adjustment factors

YEAR	FUEL COST	INCOME	COMBINED
2034	1.0477	1.0343	1.0805

Other user classes

4.12 Information obtained from TEMPro provides forecast growth assumptions for car user classes. Growth factors for other user classes have been obtained from the Regional Traffic Forecasts 2018 (RTF18) published by the DfT. Growth rates for the 'East of England' region have been derived from the 'LGV miles' values from RTF18 for the years 2015 and 2034 to provide growth factors which are applied equally across all time periods.

4.13 The LGV and HGV growth factors are shown in Table 52.

Table 52 – Non-car growth factors

VEHICLE CLASS	2015 TO 2034
LGV	**1.2768**
HGV	**1.0771**

Generalised cost parameters

4.14 Generalised costs have been calculated for the 2034 forecast year using values of time, GDP growth rates, purpose splits, and vehicle operating costs recommended by the DfT for use in economic appraisals of transport projects in England. These values are consistent with the latest guidance (November 2014) contained within TAG Unit A1.3 and in the TAG Databook November 2014[2] release.

4.15 The generalised cost coefficients for input to VISUM, of time (pence per second x 100) and distance pence per metre x 100) for each vehicle class, are shown in Table 53.

4.16 It should be noted that the value of time for HGV has been doubled from the TAG guidance value (2010 perceived cost) to represent a more realistic generalised cost for this vehicle class, as recommended in TAG Unit M3.1 section 2. This adjustment was also applied in the 2015 base modelling.

Table 53 – Generalised cost parameters (input to VISUM)

VEHICLE CLASS	TIME (PENCE PER SECOND X 100)			DISTANCE (PENCE PER METRE X 100)		
	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)
2015						
Car	37.7136	41.3721	35.0955	1.0406	1.0420	1.0374
LGV	40.9974	40.9974	40.9974	1.5610	1.5610	1.5610
HGV	84.2904	84.2904	84.2904	3.9146	3.9146	3.9146
2034						
Car	53.2436	58.0304	49.5027	0.9381	0.9398	0.9349
LGV	59.2207	59.2207	59.2207	1.5583	1.5583	1.5583
HGV	121.7572	121.7572	121.7572	4.6430	4.6430	4.6430

[2] Consistent with the validated 2015 Base Model

5.0 OVERALL MATRIX DEVELOPMENT PROCESS

Car

5.1 Alternative planning assumptions have been applied in TEMPro, taking account of the housing and employment proposals for development 1 to development 7, and 9 to 14, in Table 1. These provide adjusted 'Car' background growth factors from 2015 to 2034. Note that no information is available on specific employment forecasts as part of the Felixstowe Port expansion, so this is included in background growth.

5.2 Since different growth factors exist for different districts, it was necessary to 'furness' the validated 2015 base matrices to the individual origin and destination growth factors for each individual zone. This process adjusts the value of each origin-destination trip pair within the matrix, so that the correct growth factor for each zone origin and destination is achieved.

5.3 The TEMPro constraining factors were applied to the base matrix to provide the overall level of growth. This was used to calculate scaling factors, revised factors that are applied to the base matrix but ensure that a scaled matrix and development trips match the size of the TEMPro constrained matrix.

5.4 Fuel cost and income adjustment factors were subsequently applied, only to the scaled matrix (i.e. excluding committed development trips). The committed development trips were added to each modelled hour matrix, by applying the distribution of the relevant 'similar zone(s)' (shown in Table 44) to the net vehicle trip totals for each development

5.5 The total committed development Car trips are summarised in Table 54, whilst overall Reference Case trip totals, including constrained background growth and committed development trips, are shown in Table 55.

LGV and HGV

5.6 Goods vehicle growth factors are consistent across the study area. Therefore, the 2015 validated base matrices for these vehicle classes were simply factored by the values shown in Table 52 to produce 2034 matrices.

5.7 Additional HGV trips were added to the 2034 matrices to reflect the Felixstowe Port expansion as shown in Table 29.

5.8 The total committed development HGV trips are summarised in Table 54, whilst the overall Reference Case LGV and HGV trip totals are shown in Table 55.

Table 54 – Total Committed Development Trips

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Adastral Park	0	254	494	528	551	624	520
Martlesham	0	56	107	97	100	112	99
Ipswich Garden Suburb	10	821	1573	1328	1416	1591	1319
Clickett Hill	0	52	37	68	56	39	24
Trinity Park	0	91	170	142	146	164	143
Futura Park	124	201	422	383	417	418	273
Brooke Peninsula	0	737	521	466	391	482	375
Belstead House	0	38	72	75	77	87	76
Wolsey Grange	76	232	488	597	577	728	719
Woods Meadow	0	67	125	126	129	146	126
Fairfield Road	0	60	112	103	105	119	102
Mount Pleasant	0	32	61	47	48	54	48
Saxmundham (resi)	0	315	593	438	452	504	447

Nature of Trips	06:00-07:00	07:00-08:00	08:00-09:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Saxmundham (emp)	0	77	181	68	110	139	61
Total Cars	**209**	**3,033**	**4,955**	**4,465**	**4,576**	**5,207**	**4,333**
Felixstowe Port Expansion	68	81	73	111	107	91	70
Total HGVs	**68**	**81**	**73**	**111**	**107**	**91**	**70**

Table 55 – Total 2034 Reference Case Trips

HOUR	2015 BASE YEAR	2034 BACKGROUND TRAFFIC	2034 COMMITTED DEVELOPMENT	2034 UNCONSTRAINED TOTAL	2034 CONSTRAINED TOTAL	2034 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH
CAR							
06:00-07:00	16,789	18,769	209	20,489	19,074	**20,592**	**23%**
07:00-08:00	39,155	43,756	3,033	50,311	44,481	**47,817**	**22%**
08:00-09:00	53,300	62,128	4,955	69,213	63,204	**67,893**	**27%**
15:00-16:00	49,865	61,838	4,465	68,421	62,944	**67,652**	**36%**
16:00-17:00	48,564	54,479	4,576	63,439	55,399	**59,490**	**22%**
17:00-18:00	50,946	59,656	5,207	66,906	60,690	**65,156**	**28%**
18:00-19:00	38,943	43,670	4,333	51,518	44,420	**47,647**	**22%**
LGV							
06:00-07:00	1,741	2,223	-	2,223	2,223	**2,223**	**28%**
07:00-08:00	3,785	4,833	-	4,833	4,833	**4,833**	**28%**
08:00-09:00	3,727	4,759	-	4,759	4,759	**4,759**	**28%**
15:00-16:00	3,062	3,909	-	3,909	3,909	**3,909**	**28%**
16:00-17:00	3,712	4,740	-	4,740	4,740	**4,740**	**28%**
17:00-18:00	2,771	3,538	-	3,538	3,538	**3,538**	**28%**
18:00-19:00	1,930	2,464	-	2,464	2,464	**2,464**	**28%**
HGV							
06:00-07:00	1,808	1,853	68	2,016	1,922	**1,922**	**6%**
07:00-08:00	2,456	2,517	81	2,726	2,598	**2,598**	**6%**
08:00-09:00	2,747	2,816	73	3,032	2,889	**2,889**	**5%**
15:00-16:00	2,744	2,812	111	3,067	2,923	**2,923**	**7%**
16:00-17:00	2,232	2,287	107	2,511	2,395	**2,395**	**7%**
17:00-18:00	1,623	1,663	91	1,839	1,754	**1,754**	**8%**
18:00-19:00	1,173	1,202	70	1,334	1,272	**1,272**	**8%**
TOTAL VEHICLES							
06:00-07:00	20,338	24,356	278	24,634	23,219	**24,737**	**22%**
07:00-08:00	45,395	54,628	3,114	57,742	51,912	**55,248**	**22%**
08:00-09:00	59,775	71,832	5,028	76,860	70,851	**75,540**	**26%**
15:00-16:00	55,670	70,677	4,576	75,253	69,777	**74,484**	**34%**
16:00-17:00	54,508	65,891	4,683	70,573	62,534	**66,625**	**22%**
17:00-18:00	55,339	66,900	5,298	72,198	65,981	**70,447**	**27%**
18:00-19:00	42,046	50,851	4,403	55,254	48,156	**51,383**	**22%**

6.0 SIZEWELL B OUTAGE

6.1 As mentioned in section 1.0, the operation of Sizewell B (SZB), and the trips it generates, could have an impact on traffic flows and operation of junctions across the modelled area. An 'outage' is performed periodically at Sizewell B, approximately every 18 months and lasting approximately 6 weeks, during which periods traffic flows generated by the site are higher than usual. It was considered prudent to include the 'SZB outage' in any future year modelling so that robust traffic flows are reflected in each scenario.

6.2 In Spring 2016 a series of traffic surveys was undertaken during 17-18 May when there was a SZB outage and during 21-22 June when there was no SZB outage. The traffic surveys consisted of Manual Classified Counts (MCCs) and Automatic Traffic Counts (ATCs) at a series of sites across the area shown in Figure 3.

Figure 3 – SZB Outage Survey Sites



Analysis of survey data

6.3 The Spring 2016 MCC and ATC data was first processed by averaging the two days of data for each period (17-18 May 2016 'With Outage', and 21-22 June 2016 'No Outage'). The MCC turning flows and ATC link flows were then displayed on a diagram of the surveyed area, for each of the seven modelled hours and for each vehicle class (Car, LGV, HGV) separately.

6.4 For each hour and vehicle class, a new diagram was then created showing the difference between 'With Outage' and 'No Outage' traffic counts.

6.5 Review of these diagrams indicated that, due to daily fluctuations in traffic flows, clear patterns of the distribution of additional trips during the 'With Outage' period could not be established based on all of the survey data. Instead, a selection of key ATC locations was used from which a logical distribution of trips could be ascertained.

6.6 The ATCs selected for consideration enabled us to derive a distribution of trips between SZB (ATC 1) and the following six areas:

- A12 North – ATC 15
- B1125 – ATC 16
- B1119 – ATC 5
- A12 South – ATC 8, 9
- Aldeburgh – ATC 6, 7, 8
- Leiston – ATC 2, 6, 7

6.7 Analysis of the difference in ATC total vehicle volumes, between 'With Outage' and 'No Outage' scenarios, at the above six sites along with the ATC on Sizewell Gap immediately west of the SZB access road, resulted in a distribution of trips as shown in Table 56. The equivalent percentages are shown in Table 57.

Table 56 – Routing from 2016 ATC comparison, Hourly, Total Vehicles

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	99	28	1	38	1	8	8	2	0	0	19	27	55	70
B1125	102	29	5	31	0	6	0	2	0	0	4	27	12	71
B1119	49	18	1	28	0	6	1	1	0	0	19	17	55	44
A12 S	99	5	7	38	1	8	8	1	9	0	13	20	38	51
Aldeburgh	80	18	0	41	0	8	0	1	0	7	9	19	26	50
Leiston	91	40	0	8	0	2	4	6	0	0	4	36	11	97
Total	**521**	**137**	**14**	**184**	**2**	**38**	**21**	**12**	**9**	**7**	**67**	**145**	**197**	**382**

Table 57 – Routing from 2016 ATC comparison, Hourly, Percentage

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	19%	20%	10%	21%	38%	21%	37%	13%	0%	0%	28%	18%	28%	18%
B1125	20%	21%	35%	17%	13%	17%	1%	14%	0%	0%	6%	19%	6%	18%
B1119	9%	13%	5%	15%	12%	16%	4%	5%	0%	0%	28%	12%	28%	12%
A12 S	19%	4%	50%	21%	38%	21%	40%	7%	100%	0%	19%	14%	19%	13%
Aldeburgh	15%	13%	0%	22%	0%	21%	0%	7%	0%	100%	13%	13%	13%	13%
Leiston	17%	29%	0%	4%	0%	5%	17%	54%	0%	0%	6%	25%	6%	25%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

6.8 In order to calculate the distribution of trips at zone level, beyond these six locations, flow bundles of the 2023 Reference Case traffic were carried out to provide the zonal split.

6.9 A comparison was also undertaken between the six-area distribution derived from the flow bundles of Reference Case traffic and the Spring 2016 ATC analysis. Table 58 presents the comparison between the distribution calculated from the ATCs, summed across all seven hours, and that derived from the Reference Case traffic flow bundles.

Table 58 – Proportional Distribution, Total Seven Hours

AREA	TOTAL TRAFFIC VOLUMES				PROPORTIONAL SPLIT			
	2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES		2016 ATC COMPARISON		2023 RC TRAFFIC FLOW BUNDLES	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	183	171	637	552	22%	19%	20%	20%
B1125	124	165	263	204	15%	18%	8%	7%
B1119	124	114	324	290	15%	13%	10%	10%
A12 S	176	123	1,019	848	21%	14%	32%	31%
Aldeburgh	115	143	847	761	14%	16%	26%	28%
Leiston	110	188	141	106	13%	21%	4%	4%
Total	**833**	**905**	**3,230**	**2,760**	**100%**	**100%**	**100%**	**100%**

6.10 Upon review of this analysis it was considered more reliable to use the proportional split of Reference Case bundles, shown in the last two columns of Table 58, to inform the full distribution of the SZB outage trips, evidentially supported by the Spring 2016 ATC survey data volumes.

6.11 The detailed calculations of the SZB outage traffic flows are now discussed.

Calculation of traffic inputs

6.12 The proportional splits of SZB Outage traffic flows are shown in Table 59.

Table 59 – Distributional Split of Reference Case Traffic

AREA	TOTAL 7 HOURS	
	TOWARDS SZB	AWAY FROM SZB
A12 N	20%	20%
B1125	8%	7%
B1119	10%	10%
A12 S	32%	31%
Aldeburgh	26%	28%
Leiston	4%	4%
Total	**100%**	**100%**

6.13 The hourly volumes of outage traffic, to and from SZB, are shown in Table 60 to Table 62 for Cars, LGVs and HGVs respectively. Numbers are rounded.

Table 60 – SZB Outage Trips – Car

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	93	26	0	35	0	7	3	0	1	0	12	27	36	70
B1125	38	9	0	13	0	3	1	0	0	0	5	10	15	26
B1119	47	13	0	18	0	4	1	0	1	0	6	14	18	37
A12 S	148	39	0	53	0	12	4	0	1	0	20	42	58	108
Aldeburgh	124	35	0	48	0	10	3	0	1	0	17	38	48	96
Leiston	21	5	0	7	0	1	1	0	0	0	3	5	8	13
Total	**471**	**127**	**0**	**174**	**0**	**37**	**13**	**0**	**4**	**0**	**63**	**136**	**183**	**350**
Two-way	**598**		**174**		**37**		**13**		**4**		**199**		**534**	

Table 61 – SZB Outage Trips – LGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	10	2	2	2	0	0	2	2	1	1	1	2	2	6
B1125	4	1	1	1	0	0	1	1	0	1	0	1	1	2
B1119	5	1	1	1	0	0	1	1	1	1	1	1	1	3
A12 S	16	3	3	3	1	0	2	4	2	2	1	2	4	10
Aldeburgh	13	3	3	3	0	0	2	3	1	2	1	2	3	9
Leiston	2	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**50**	**10**	**10**	**10**	**1**	**0**	**8**	**11**	**5**	**7**	**4**	**8**	**12**	**31**
Two-way	**60**		**20**		**1**		**19**		**11**		**13**		**43**	

Table 62 – SZB Outage Trips – HGV

AREA	6-7AM		7-8AM		8-9AM		3-4PM		4-5PM		5-6PM		6-7PM	
	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM
A12 N	0	0	1	0	0	0	0	0	0	0	0	0	0	0
B1125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B1119	0	0	1	0	0	0	0	0	0	0	0	0	0	0
A12 S	1	0	1	0	1	0	1	0	1	0	0	0	1	1
Aldeburgh	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Leiston	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**4**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**
Two-way	**1**		**4**		**1**		**1**		**1**		**1**		**2**	

6.14 The zonal distribution of these trips was derived from the 2023 Reference Case traffic flow.

6.15 The above SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models.

7.0 SUMMARY TRIPS

7.1 The SZB Outage traffic flows were added to all the Reference Case traffic matrices in both future year Reference Case and With Development VISUM models. The final Reference Case matrix totals are shown in Table 63.

Table 63 – Total 2028 Reference Case Trips, including SZB Outage

HOUR	2015 BASE YEAR	2034 BACKGROUND TRAFFIC	2034 COMMITTED DEVELOPMENT	2034 UNCONSTRAINED TOTAL	2034 CONSTRAINED TOTAL	2034 REFERENCE CASE CONSTRAINED TOTAL WITH F+I	OVERALL GROWTH	SZB OUTAGE	FINAL 2034 REFERENCE CASE TOTAL
CAR									
06:00-07:00	16,789	18,769	209	18,978	19,074	**20,592**	**23%**	598	**21,190**
07:00-08:00	39,155	43,756	3,033	46,789	44,481	**47,817**	**22%**	174	**47,991**
08:00-09:00	53,300	62,128	4,955	67,083	63,204	**67,893**	**27%**	37	**67,930**
15:00-16:00	49,865	61,838	4,465	66,303	62,944	**67,652**	**36%**	13	**67,665**
16:00-17:00	48,564	54,479	4,576	59,054	55,399	**59,490**	**22%**	4	**59,494**
17:00-18:00	50,946	59,656	5,207	64,863	60,690	**65,156**	**28%**	199	**65,355**
18:00-19:00	38,943	43,670	4,333	48,003	44,420	**47,647**	**22%**	534	**48,181**
LGV									
06:00-07:00	1,741	2,223	-	2,223	2,223	**2,223**	**28%**	60	**2,283**
07:00-08:00	3,785	4,833	-	4,833	4,833	**4,833**	**28%**	20	**4,853**
08:00-09:00	3,727	4,759	-	4,759	4,759	**4,759**	**28%**	1	**4,760**
15:00-16:00	3,062	3,909	-	3,909	3,909	**3,909**	**28%**	19	**3,928**
16:00-17:00	3,712	4,740	-	4,740	4,740	**4,740**	**28%**	11	**4,751**
17:00-18:00	2,771	3,538	-	3,538	3,538	**3,538**	**28%**	13	**3,551**
18:00-19:00	1,930	2,464	-	2,464	2,464	**2,464**	**28%**	43	**2,507**
HGV									
06:00-07:00	1,808	1,947	68	2,016	2,016	**2,016**	**12%**	1	**2,017**
07:00-08:00	2,456	2,645	81	2,726	2,726	**2,726**	**11%**	4	**2,730**
08:00-09:00	2,747	2,959	73	3,032	3,032	**3,032**	**10%**	1	**3,033**
15:00-16:00	2,744	2,955	111	3,067	3,067	**3,067**	**12%**	1	**3,068**
16:00-17:00	2,232	2,404	107	2,511	2,511	**2,511**	**13%**	1	**2,512**
17:00-18:00	1,623	1,748	91	1,839	1,839	**1,839**	**13%**	1	**1,840**
18:00-19:00	1,173	1,264	70	1,334	1,334	**1,334**	**14%**	2	**1,336**
TOTAL VEHICLES									
06:00-07:00	20,338	22,939	278	23,217	23,313	**24,831**	**22%**	659	**25,490**
07:00-08:00	45,395	51,234	3,114	54,348	52,040	**55,376**	**22%**	198	**55,574**
08:00-09:00	59,775	69,846	5,028	74,874	70,995	**75,683**	**27%**	40	**75,723**
15:00-16:00	55,670	68,703	4,576	73,279	69,920	**74,627**	**34%**	33	**74,660**
16:00-17:00	54,508	61,623	4,683	66,305	62,650	**66,741**	**22%**	16	**66,757**
17:00-18:00	55,339	64,942	5,298	70,239	66,066	**70,532**	**27%**	212	**70,744**
18:00-19:00	42,046	47,397	4,403	51,800	48,217	**51,444**	**22%**	579	**52,023**

8.0 OTHER INFRASTRUCTURE

Beccles Relief Road

8.1 The Beccles Relief Road has now been built and is therefore included in the 2034 Reference Case model.

8.2 The new road joins the A145 London Road south of Beccles with Ellough Road, to the north of Ellough Industrial Estate. New roundabout junctions connect the Relief Road with the existing highway network at either end.

Lake Lothing Third Crossing, Lowestoft

8.3 A planning application was submitted in 2018 for the Lake Lothing Third Crossing in Lowestoft, which underwent an Examination In Public (EIP) in Spring 2019.

8.4 The latest timeline according to SCC's website is that, subject to planning application approval, construction could start in 2020 and would take two to three years to build. Therefore it is included in the 2034 Reference Case scenario.

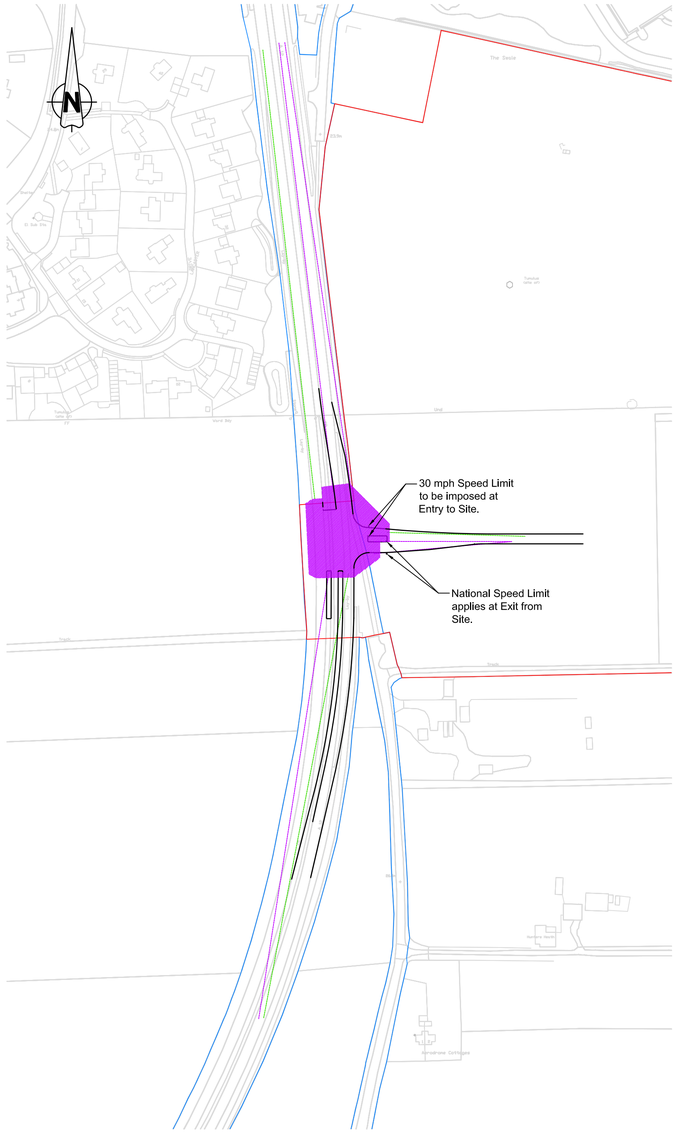
8.5 The Third Crossing would link from the A12 via Waveney Drive on the south side, to Denmark Road and Peto Way on the north side of Lake Lothing.

Upper Orwell Crossing, Ipswich

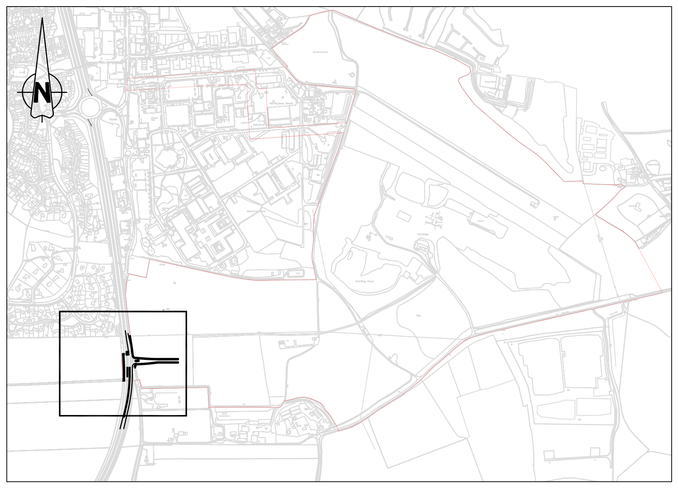
8.6 The proposed 'Upper Orwell Crossing' in Ipswich was previously included in the 2027 Reference Case which provided the basis for assessment at Stage 3

8.7 However the scheme has been shelved and therefore has been removed from all Sizewell C future year models.

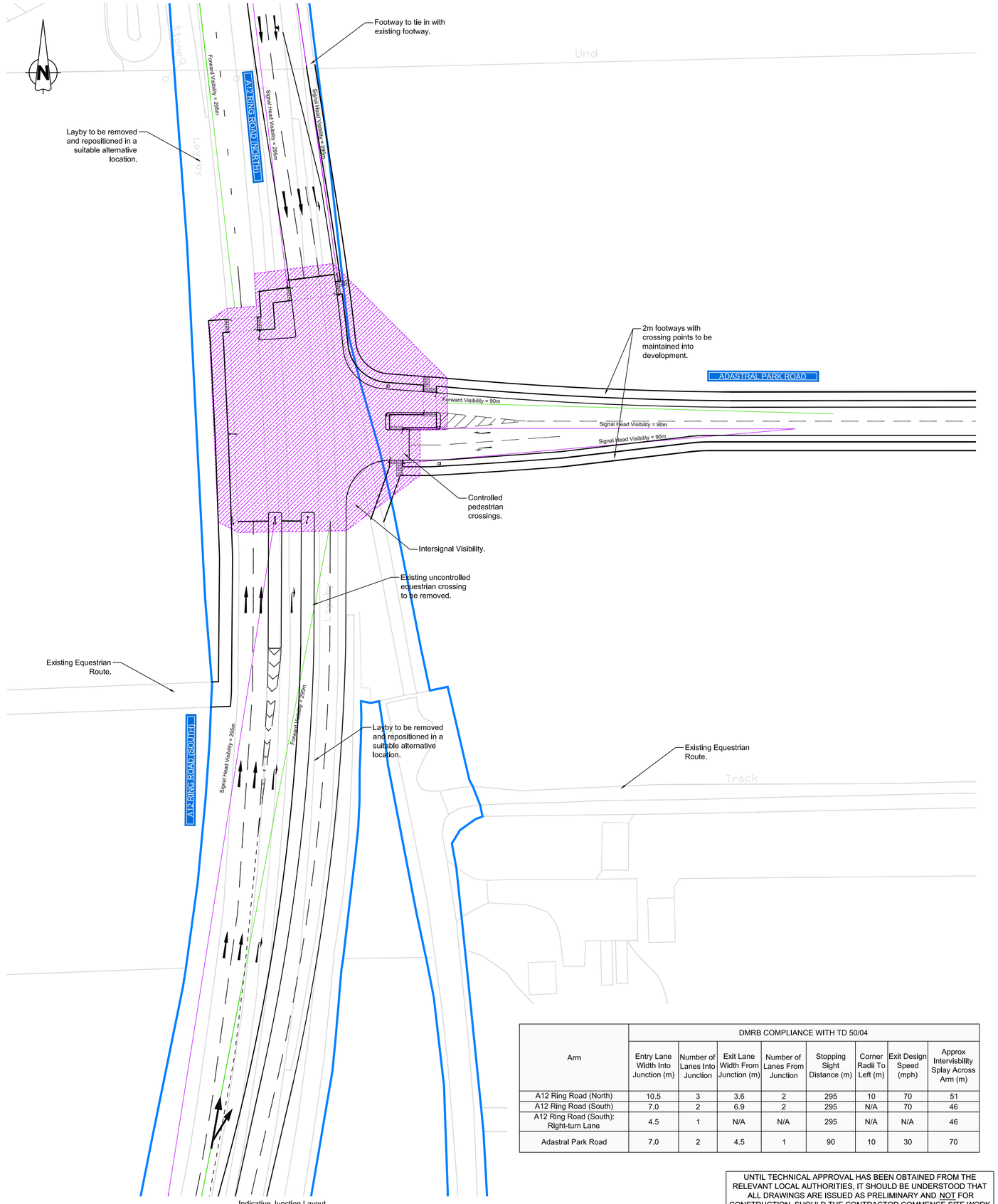
Original Drawing Size A1



Visibility Splays
Scale: 1:2000



Context Plan
Scale: 1:10000



Indicative Junction Layout
Scale: 1:500

Arm	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width Into Junction (m)	Number of Lanes Into Junction	Exit Lane Width From Junction (m)	Number of Lanes From Junction	Stopping Sight Distance (m)	Corner Radii To Left (m)	Exit Design Speed (mph)	Approx Intervisibility Splay Across Arm (m)
A12 Ring Road (North)	10.5	3	3.6	2	295	10	70	51
A12 Ring Road (South)	7.0	2	6.9	2	295	N/A	70	46
A12 Ring Road (South): Right-turn Lane	4.5	1	N/A	N/A	295	N/A	N/A	46
Adastral Park Road	7.0	2	4.5	1	90	10	30	70

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

© Brookbanks Consulting Limited 2015

Construction Design and Management (CDM)
Key Residual Risks

Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

1) Overhead and underground services
2) Street Lighting Cables
3) Working adjacent to water courses and flood plain
4) Soft ground conditions
5) Working adjacent to live highways and railway line
6) Unchartered services
7) Existing buildings with potential asbestos hazards

NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
   - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
   - TA 90/05: The Geometric Design of Pedestrian, Cycle and Equestrian Routes;
   - TA 91/05: Provision for Non-Motorised Users;
   - TD 9/93: Highway Link Design;
   - TD 50/04: The Geometric Layout of Signal-controlled Junctions and Signalized Roundabouts.

KEY:

- Site Boundary
- Assumed Highway Boundary
- Signal Head Visibility
- Traffic Signal Head
- Pedestrian Signal Head with Push Button
- Intersignal Visibility
- Forward Visibility on Exit
- Tactile Paving

C	Modifications as per RSA comments.	MDM	LW	PAB 07.09.17
B	Modifications as per SCC's comments.	MDM	LW	PAB 01.09.17
A	Reflection of existing speed limits.	MDM	LW	PAB 01.08.17
-	First Issue	-	-	- 21.06.17

Brookbanks
6150 Knights Court Solihull Parkway Birmingham B37 7WY
Tel (0121) 329 4330 Fax (0121) 329 4331
www.brookbanks.com

Carlyle Land Ltd and Commercial Estates Group

Land South and East of Adastral Park, Ipswich

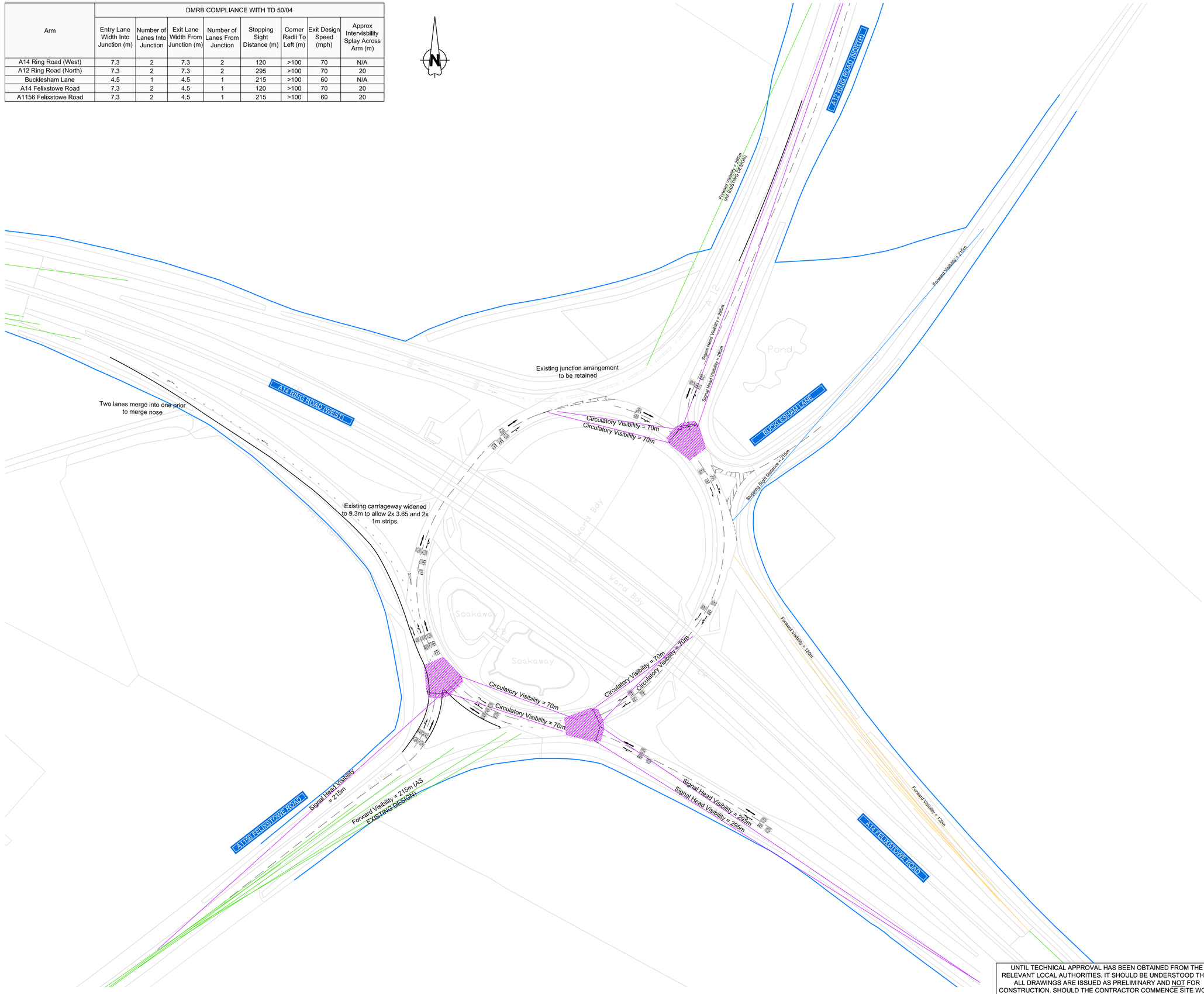
Proposed Western Signalized Access off A12 Dual Carriageway

Status		Status Date
Approval		June 2017
Drawn	Checked	Date
MDM	LW	21.06.2017
Scale	Number	Rev
As Shown	10391-HL-07	C

0 10 20 30 40 50
METRES

Original Drawing Size A1

Arm	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width Into Junction (m)	Number of Lanes Into Junction	Exit Lane Width From Junction (m)	Number of Lanes From Junction	Stopping Sight Distance (m)	Corner Radii To Left (m)	Exit Design Speed (mph)	Approx Intervisbility Splay Across Arm (m)
A14 Ring Road (West)	7.3	2	7.3	2	120	>100	70	N/A
A12 Ring Road (North)	7.3	2	7.3	2	295	>100	70	20
Bucklesham Lane	4.5	1	4.5	1	215	>100	60	N/A
A14 Felixstowe Road	7.3	2	4.5	1	120	>100	70	20
A1156 Felixstowe Road	7.3	2	4.5	1	215	>100	60	20



Construction Design and Management (CDM)
Key Residual Risks

Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

1) Overhead and underground services
2) Street Lighting Cables
3) Working adjacent to water courses and flood plain
4) Soft ground conditions
5) Working adjacent to live highways and railway line
6) Unchartered services
7) Existing buildings with potential asbestos hazards

NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
   - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
   - TA 90/05: The Geometric Design of Pedestrian, Cycle and Equestrian Routes;
   - TA 91/05: Provision for Non-Motorised Users;
   - TD 9/93: Highway Link Design;
   - TD 50/04: The Geometric Layout of Signal-controlled Junctions and Signalized Roundabouts;
   - Traffic Advisory Leaflet 3/03: Equestrian Crossings.

KEY:

- Assumed Highway Boundary
- Signal Head Visibility
- Traffic Signal Head
- High-mast Traffic Signal Head
- Intersignal Visibility
- Forward Visibility on Exit
- Forward Visibility on Entry

F	Widening of A14 (west) off-slip	GG	DN	DN 13.09.17
E	Amendments to kerb and road signs	GG	DN	DN 25.08.17
D	Amendments to reflect traffic modelling.	MDM	LW	PAB 26.06.17
C	Amendments as per Road Safety Audit.	MDM	LW	PAB 12.06.17
B	Amendments as per client's requests.	MDM	LW	PAB 10.03.17
A	Amendments as per client's requests.	MDM	LW	PAB 19.10.16
-	First Issue	-	-	- 19.10.16

Brookbanks
6150 Knights Court Solihull Parkway Birmingham B37 7WY
Tel (0121) 329 4330 Fax (0121) 329 4331
www.brookbanks.com

Carlyle Land Ltd and Commercial Estates Group

Land South and East of Adastral Park, Ipswich

Off-site Highway Mitigation: A14 Roundabout Signalisation

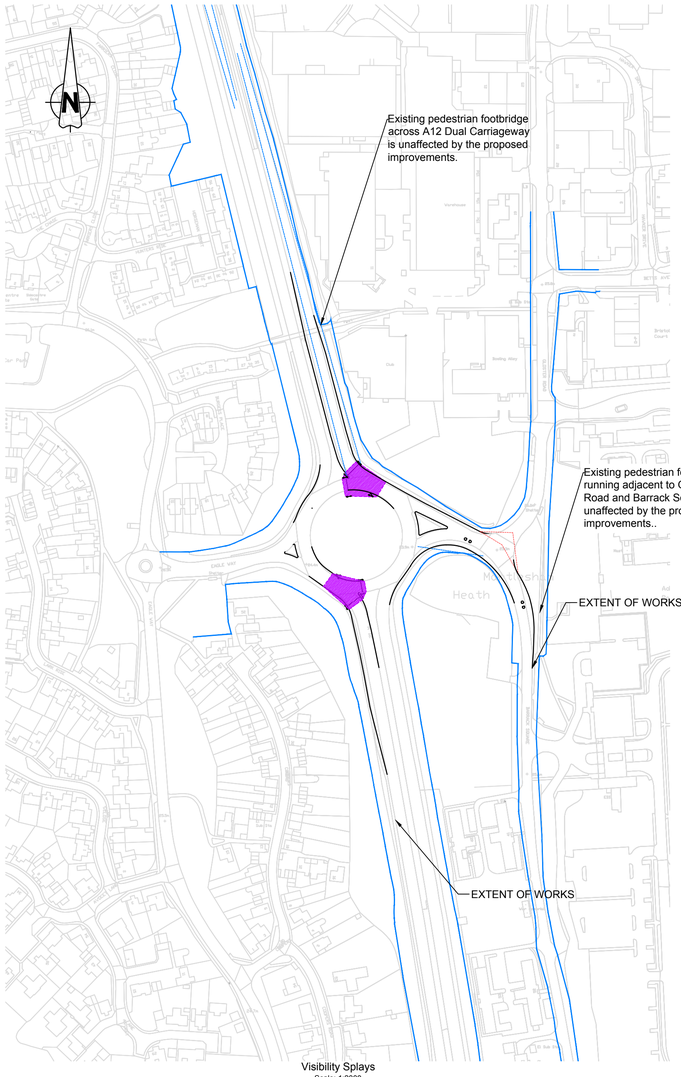
Status		Status Date
Approval		Oct 2016
Drawn	Checked	Date
MDM	LW	19.10.2016
Scale	Number	Rev
1:1000	10391-HL-11	F

0 10 20 30 40 50
METRES

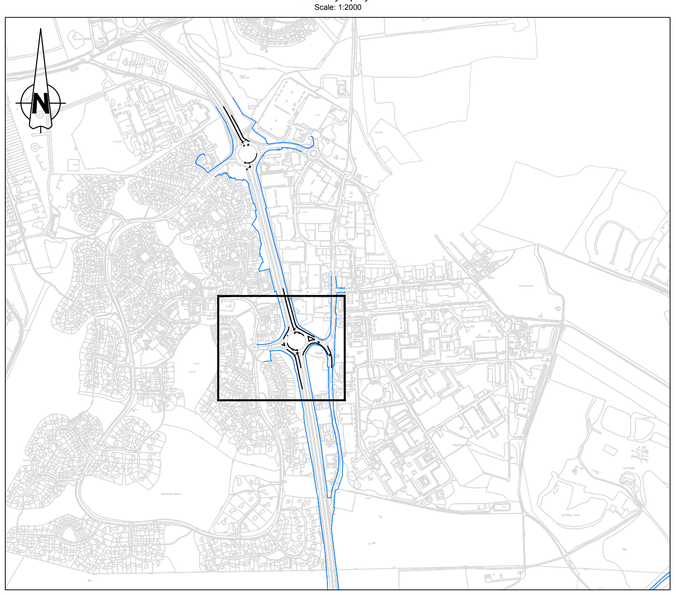
UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

© Brookbanks Consulting Limited 2015

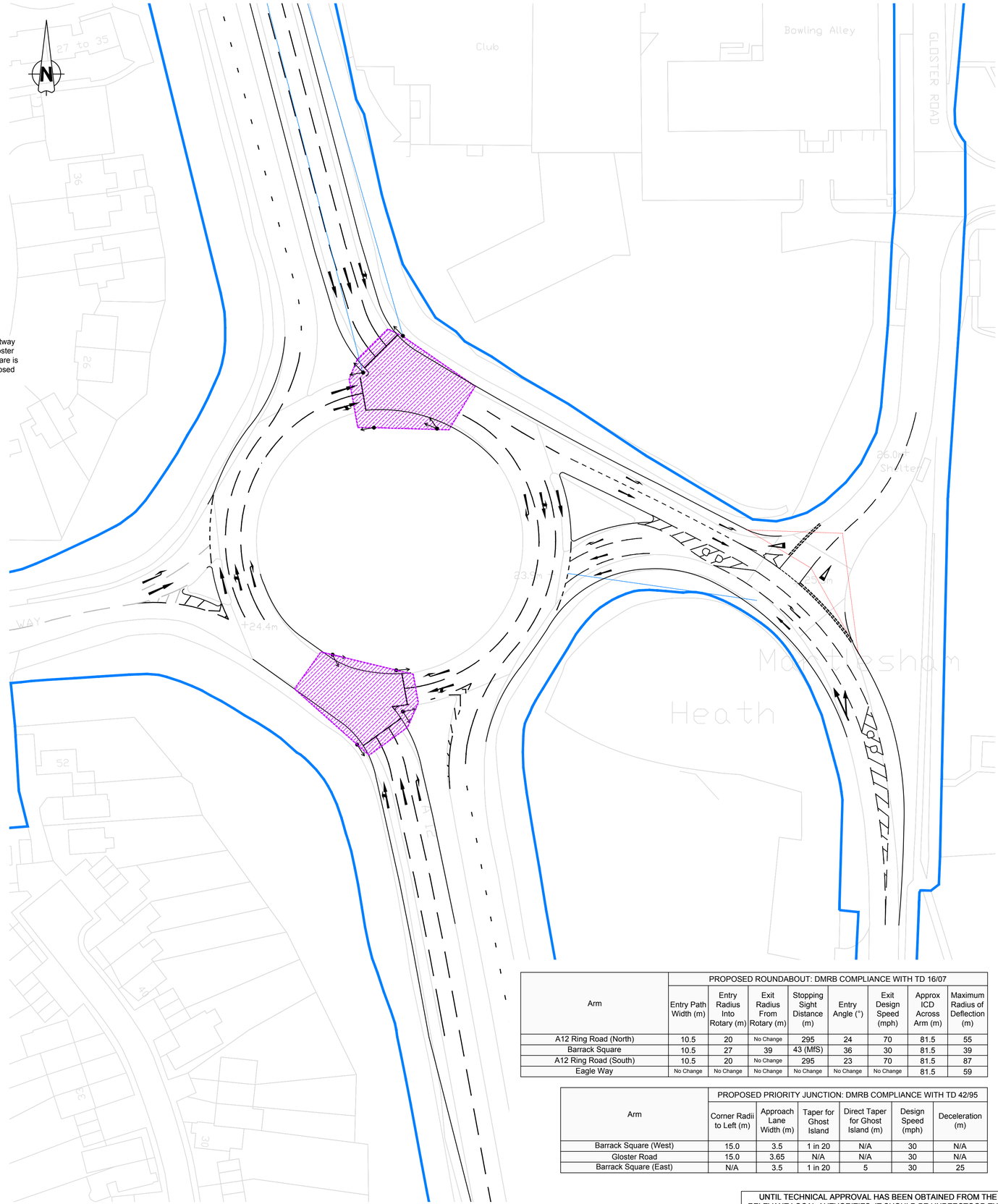
Original Drawing Size A1



Visibility Splays
Scale: 1:2000



Context Plan
Scale: 1:10000



Indicative Junction Layout
Scale: 1:500

Arm	PROPOSED ROUNDABOUT: DMRB COMPLIANCE WITH TD 16/07							
	Entry Path Width (m)	Entry Radius Into Rotary (m)	Exit Radius From Rotary (m)	Stopping Sight Distance (m)	Entry Angle (°)	Exit Design Speed (mph)	Approx ICD Across Arm (m)	Maximum Radius of Deflection (m)
A12 Ring Road (North)	10.5	20	No Change	295	24	70	81.5	55
Barrack Square	10.5	27	39	43 (MfS)	36	30	81.5	39
A12 Ring Road (South)	10.5	20	No Change	295	23	70	81.5	87
Eagle Way	No Change	No Change	No Change	No Change	No Change	No Change	81.5	59

Arm	PROPOSED PRIORITY JUNCTION: DMRB COMPLIANCE WITH TD 42/95					
	Corner Radii to Left (m)	Approach Lane Width (m)	Taper for Ghost Island	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration (m)
Barrack Square (West)	15.0	3.5	1 in 20	N/A	30	N/A
Gloster Road	15.0	3.65	N/A	N/A	30	N/A
Barrack Square (East)	N/A	3.5	1 in 20	5	30	25

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

Construction Design and Management (CDM)
Key Residual Risks

Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

1) Overhead and underground services
2) Street Lighting Cables
3) Working adjacent to water courses and flood plain
4) Soft ground conditions
5) Working adjacent to live highways and railway line
6) Unchartered services
7) Existing buildings with potential asbestos hazards

NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
   - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
   - TD 16/07: The Geometric Design of Roundabouts.
   - TD 9/93: Highway Link Design;
   - TD 50/04 The Geometric Layout of Signal Controlled Junctions and Signalised Roundabouts

KEY:

- Site Boundary
- Highway Boundary
- Stopping Sight Distance on Approach
- Junction Intervisibility
- Signal Head

F	Road markings amended	GG	DN	DN 21.11.17
E	Amended to SCC proposal	GG	DN	DN 10.11.17
D	Amendments to circulatory carriageway and barack square junction	GG	DN	DN 13.09.17
C	Amendments for traffic modelling.	MDM	LW	PAB 26.06.17
B	Further amendments for deflection.	MDM	DN	PAB 15.06.17
A	Amendments as per client's requests.	MDM	LW	PAB 03.03.17
-	First Issue	-	-	- 28.02.17

Brookbanks
6150 Knights Court Solihull Parkway Birmingham B37 7WY
Tel (0121) 329 4330 Fax (0121) 329 4331
www.brookbanks.com

Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

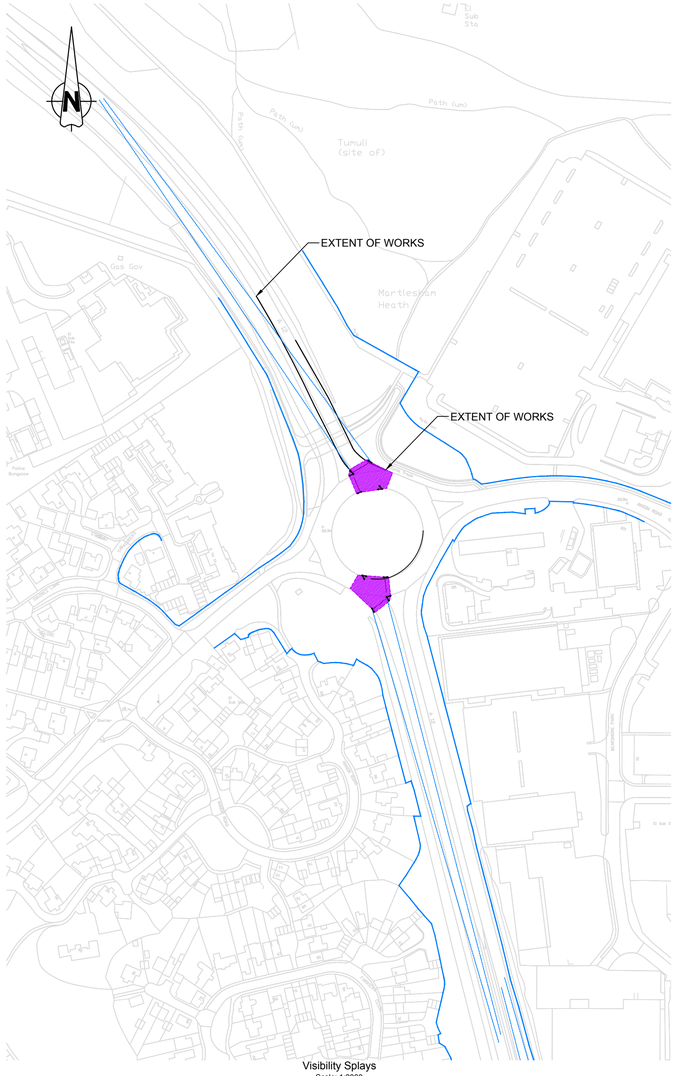
Off-site Highway Mitigation:
Adastral Park Roundabout
and Gloster Road Mitigation

Status	Status Date
Approval	Feb 2017
Drawn: MDM	Checked: LW	Date: 28.02.2017
Scale: As Shown	Number: 10391-HL-23	Rev: F

0 10 20 30 40 50
METRES

© Brookbanks Consulting Limited 2015

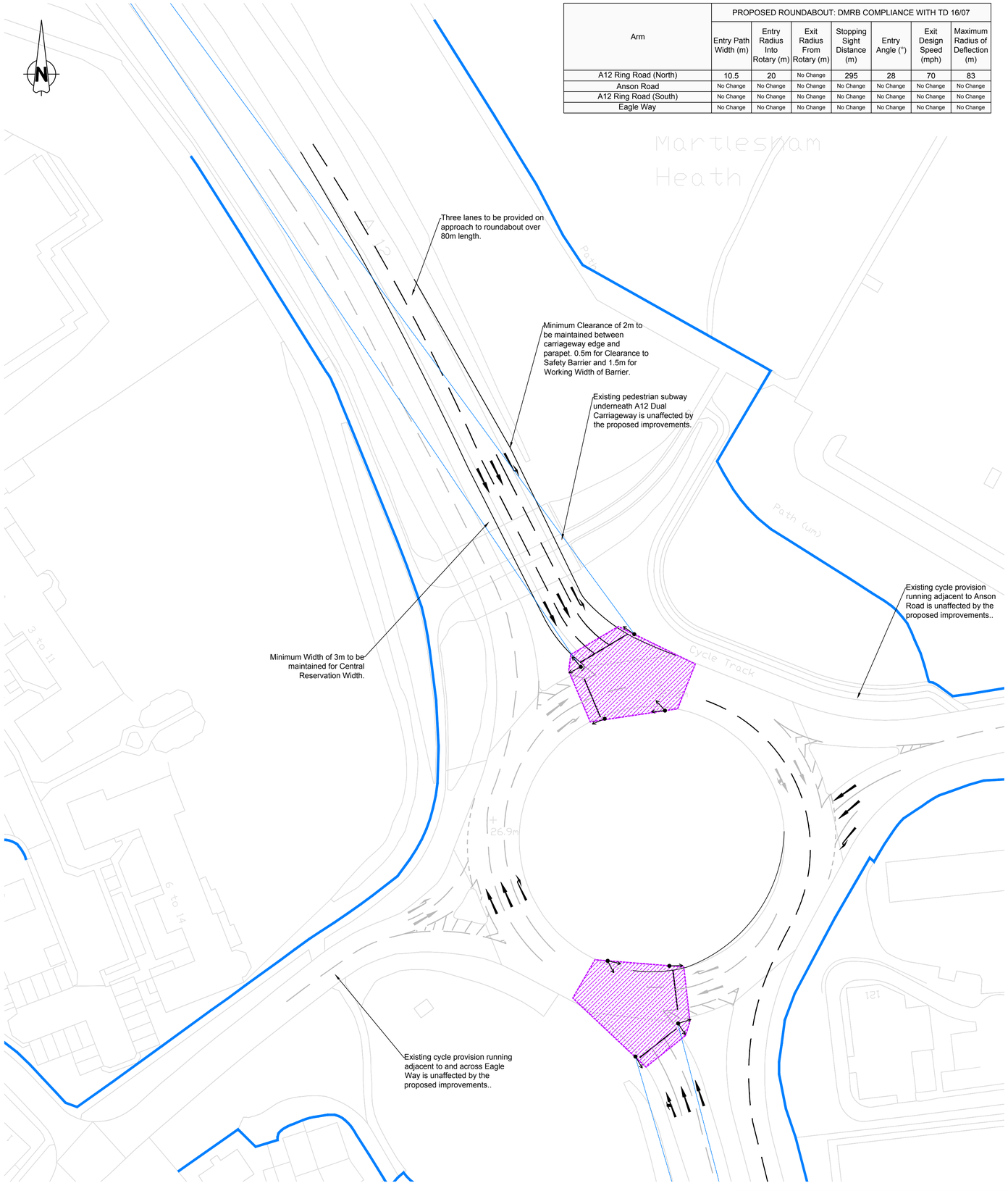
Original Drawing Size A1



Visibility Splays
Scale: 1:2000



Context Plan
Scale: 1:10000



Indicative Junction Layout
Scale: 1:500

Arm	PROPOSED ROUNDABOUT: DMRB COMPLIANCE WITH TD 16/07						
	Entry Path Width (m)	Entry Radius Into Rotary (m)	Exit Radius From Rotary (m)	Stopping Sight Distance (m)	Entry Angle (°)	Exit Design Speed (mph)	Maximum Radius of Deflection (m)
A12 Ring Road (North)	10.5	20	No Change	295	28	70	83
Anson Road	No Change	No Change	No Change	No Change	No Change	No Change	No Change
A12 Ring Road (South)	No Change	No Change	No Change	No Change	No Change	No Change	No Change
Eagle Way	No Change	No Change	No Change	No Change	No Change	No Change	No Change

Construction Design and Management (CDM)
Key Residual Risks
Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

1) Overhead and underground services
2) Street Lighting Cables
3) Working adjacent to water courses and flood plain
4) Soft ground conditions
5) Working adjacent to live highways and railway line
6) Unchartered services
7) Existing buildings with potential asbestos hazards

NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
   - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
   - TD 16/07: The Geometric Design of Roundabouts.
   - TD 9/93: Highway Link Design;
   - TD 50/04 The Geometric Layout of Signal Controlled Junctions and Signalised Roundabouts

KEY:

- Site Boundary
- Highway Boundary
- Stopping Sight Distance on Approach
- Junction Intervisibility
- Signal Head

E	Road markings amended	GG	DN	DN 21.11.17
D	Signals added on A12 approach	GG	DN	DN 10.11.17
C	Lane marks on Anson Rd added.	GG	DN	DN 13.09.17
B	Further amendments for deflection.	MDM	DN	PAB 14.06.17
A	Amendments as per client's requests.	MDM	LW	PAB 03.03.17
-	First Issue	-	-	- 28.02.17

Brookbanks
6150 Knights Court Solihull Parkway Birmingham B37 7WY
Tel (0121) 329 4330 Fax (0121) 329 4331
www.brookbanks.com

Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

Off-site Highway Mitigation:
Martlesham Roundabout Mitigation

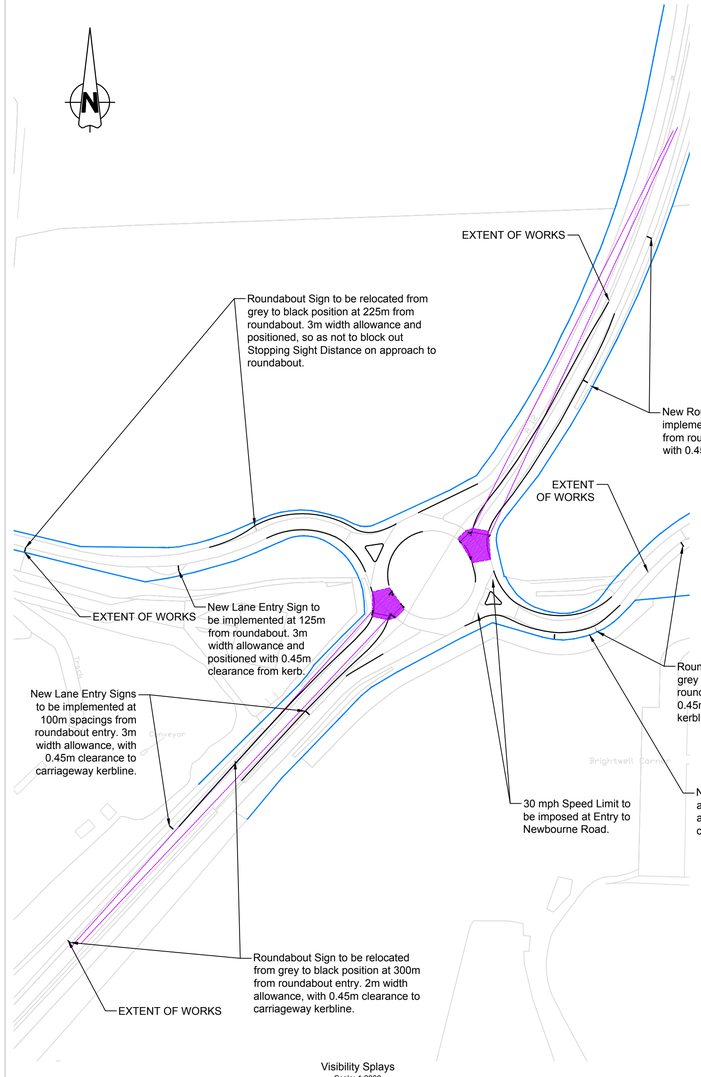
Status		Status Date
Approval		Feb 2017
Drawn	Checked	Date
MDM	LW	28.02.2017
Scale	Number	Rev
As Shown	10391-HL-24	E

0 10 20 30 40 50
METRES

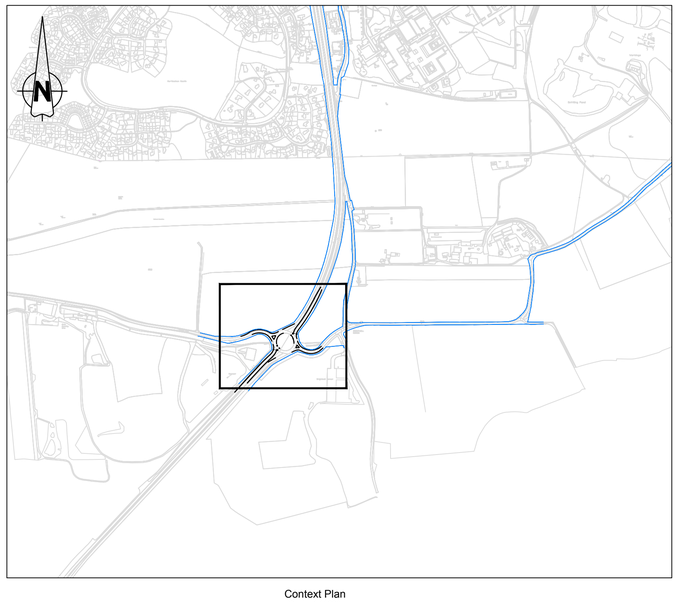
UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

© Brookbanks Consulting Limited 2015

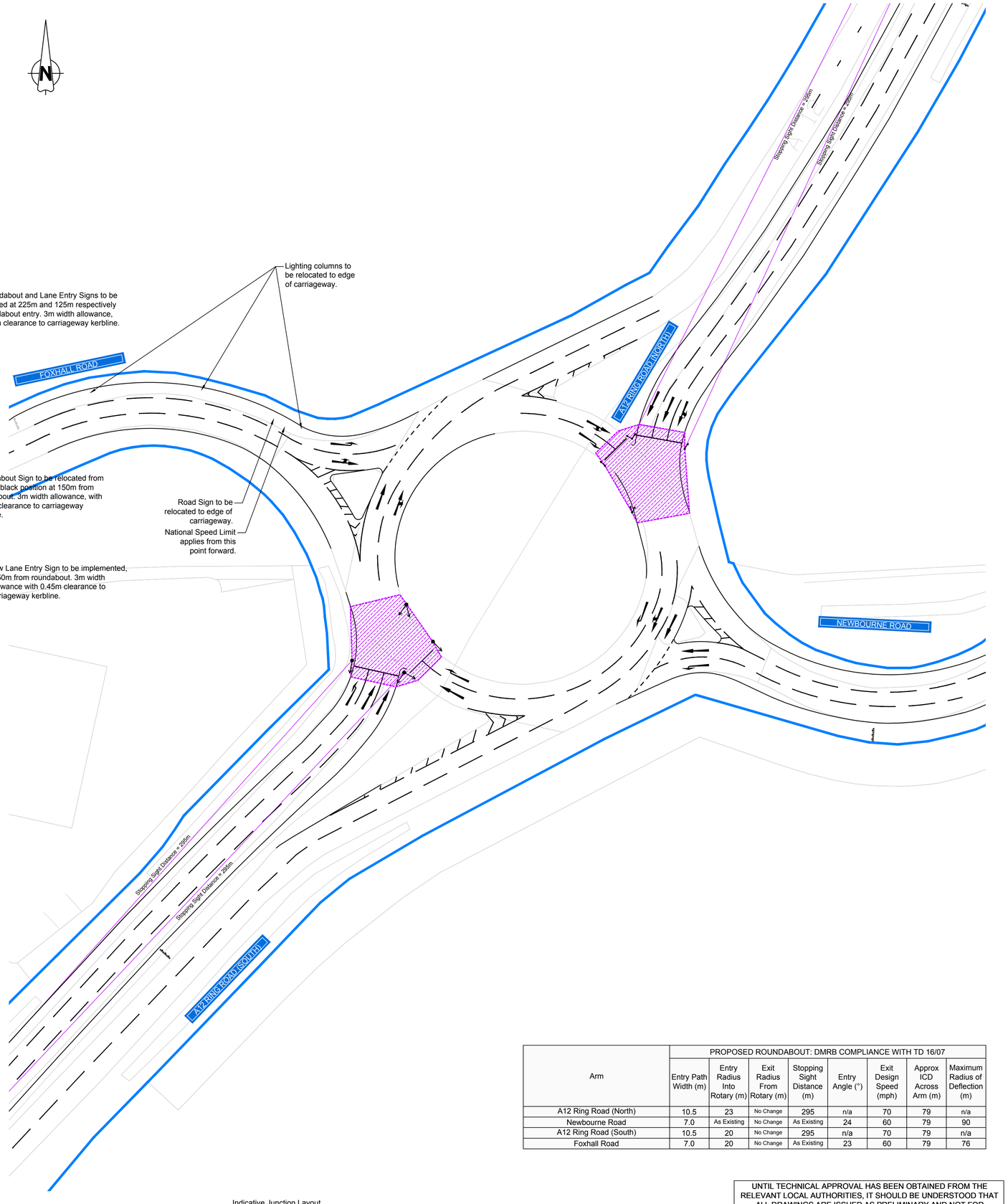
Original Drawing Size A1



Visibility Splays
Scale: 1:2000



Context Plan
Scale: 1:10000



Indicative Junction Layout
Scale: 1:500

Arm	PROPOSED ROUNDABOUT: DMRB COMPLIANCE WITH TD 16/07							
	Entry Path Width (m)	Entry Radius Into Rotary (m)	Exit Radius From Rotary (m)	Stopping Sight Distance (m)	Entry Angle (°)	Exit Design Speed (mph)	Approx ICD Across Arm (m)	Maximum Radius of Deflection (m)
A12 Ring Road (North)	10.5	23	No Change	295	n/a	70	79	n/a
Newbourne Road	7.0	As Existing	No Change	As Existing	24	60	79	90
A12 Ring Road (South)	10.5	20	No Change	295	n/a	70	79	n/a
Foxhall Road	7.0	20	No Change	As Existing	23	60	79	76

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

© Brookbanks Consulting Limited 2015

Construction Design and Management (CDM)
Key Residual Risks
Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

1) Overhead and underground services
2) Street Lighting Cables
3) Working adjacent to water courses and flood plain
4) Soft ground conditions
5) Working adjacent to live highways and railway line
6) Unchartered services
7) Existing buildings with potential asbestos hazards

NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
   - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
   - TD 16/07: The Geometric Design of Roundabouts.
   - TD 9/93: Highway Link Design;
   - TD 50/04 The Geometric Layout of Signal Controlled Junctions and Signalised Roundabouts

KEY:

- Site Boundary
- Highway Boundary
- Stopping Sight Distance on Approach
- Junction Intervisibility
- Signal Head

A	Road Markings amended	GG	DN	DN 21.11.17
-	First Issue	-	-	- 09.11.17

Brookbanks
6150 Knights Court Solihull Parkway Birmingham B37 7WY
Tel (0121) 329 4330 Fax (0121) 329 4331
www.brookbanks.com

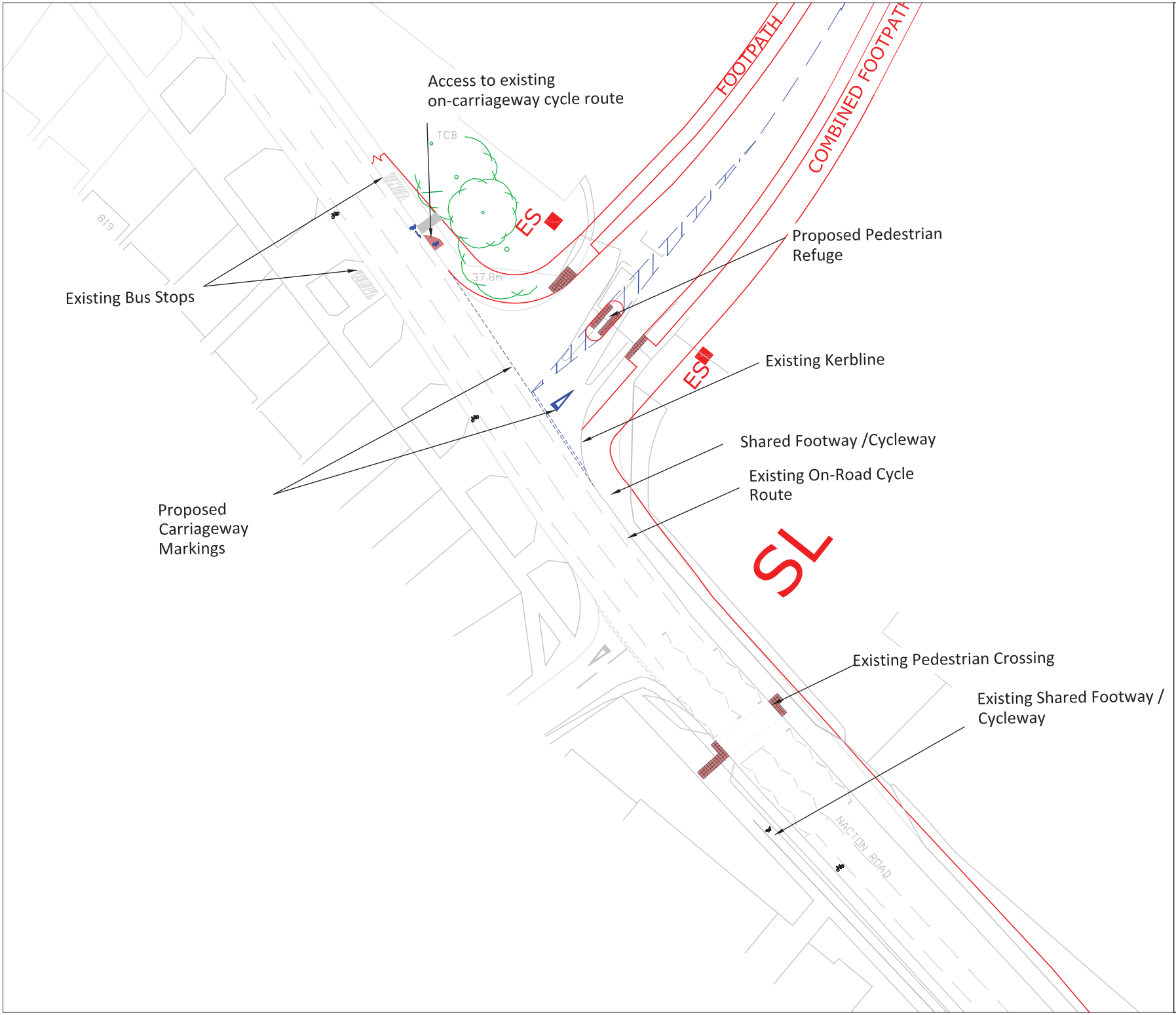
Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

Off-site Mitigation
Foxhall Roundabout
SCC Highways Proposal

Status	Status Date
Approval	November 2017
Drawn: DPN	Checked: LW	Date: 09.11.2017
Scale: As Shown	Number: 10391-HL-40	Rev: A

0 10 20 30 40 50
METRES



ADVANCE
TRANSPORTATION CONSULTING

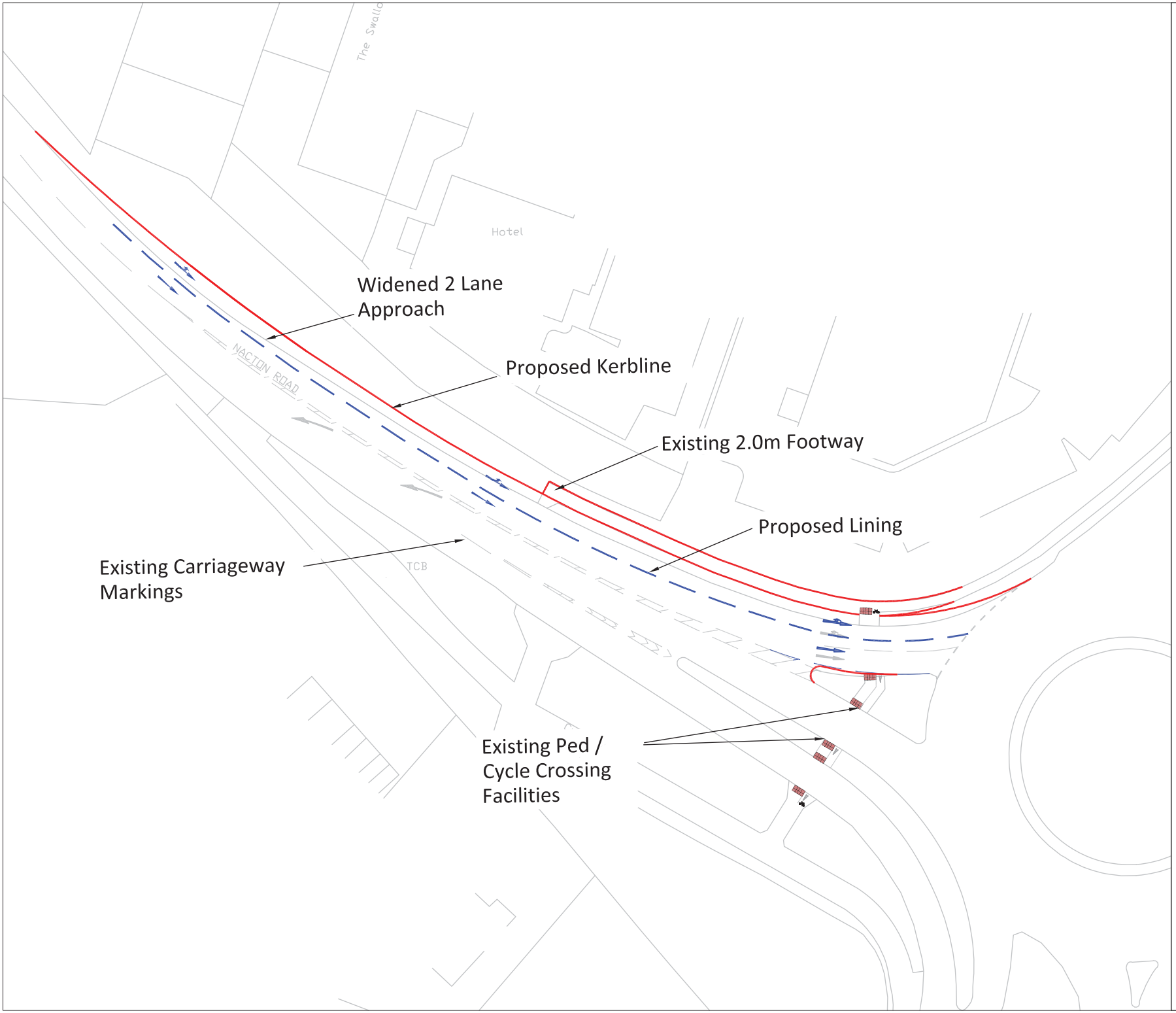
Sandy Farm Business Centre
The Sands, Farnham, GU10 1PX
Tel: 01252 782237
web: www.advancetc.co.uk

Client
AquiGen (Nacton) LLP

Project
Land West of Ransomes Way,
Ipswich

Drawing
Proposed Nacton Road Site Access
Arrangements

Scale	Drawing Number
1:500@A3	045/10



ADVANCE
TRANSPORTATION CONSULTING

Sandy Farm Business Centre
The Sands, Farnham, GU10 1PX
Tel: 01252 782237
web: www.advancetc.co.uk

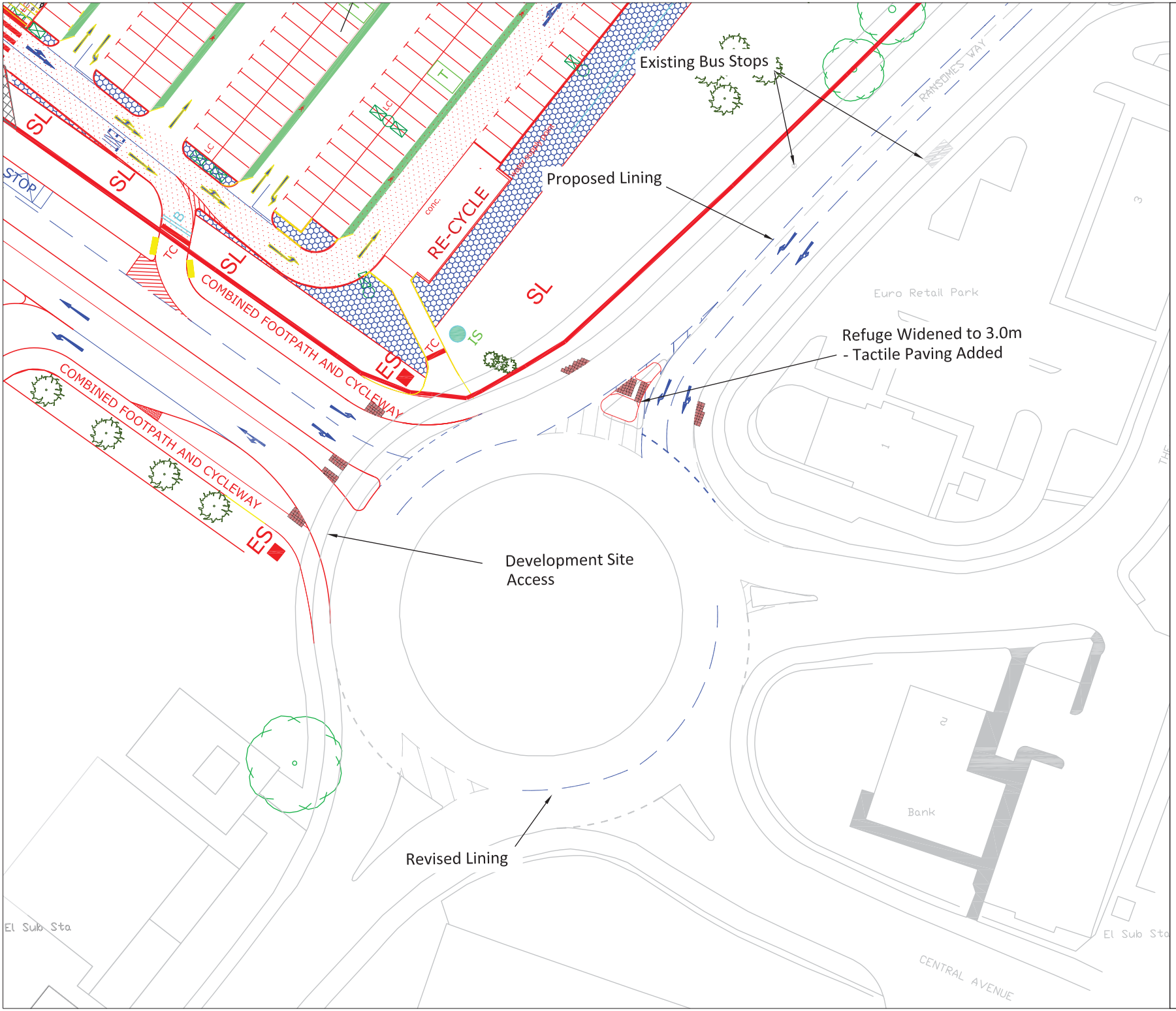
Client: AquiGen (Nacton) LLP

Project: Land West of Ransomes Way, Ipswich

Drawing: Proposed Modification to Nacton Road / The Heavens Roundabout

Scale: 1:500@A3

Drawing Number: 045/12



ADVANCE
TRANSPORTATION CONSULTING

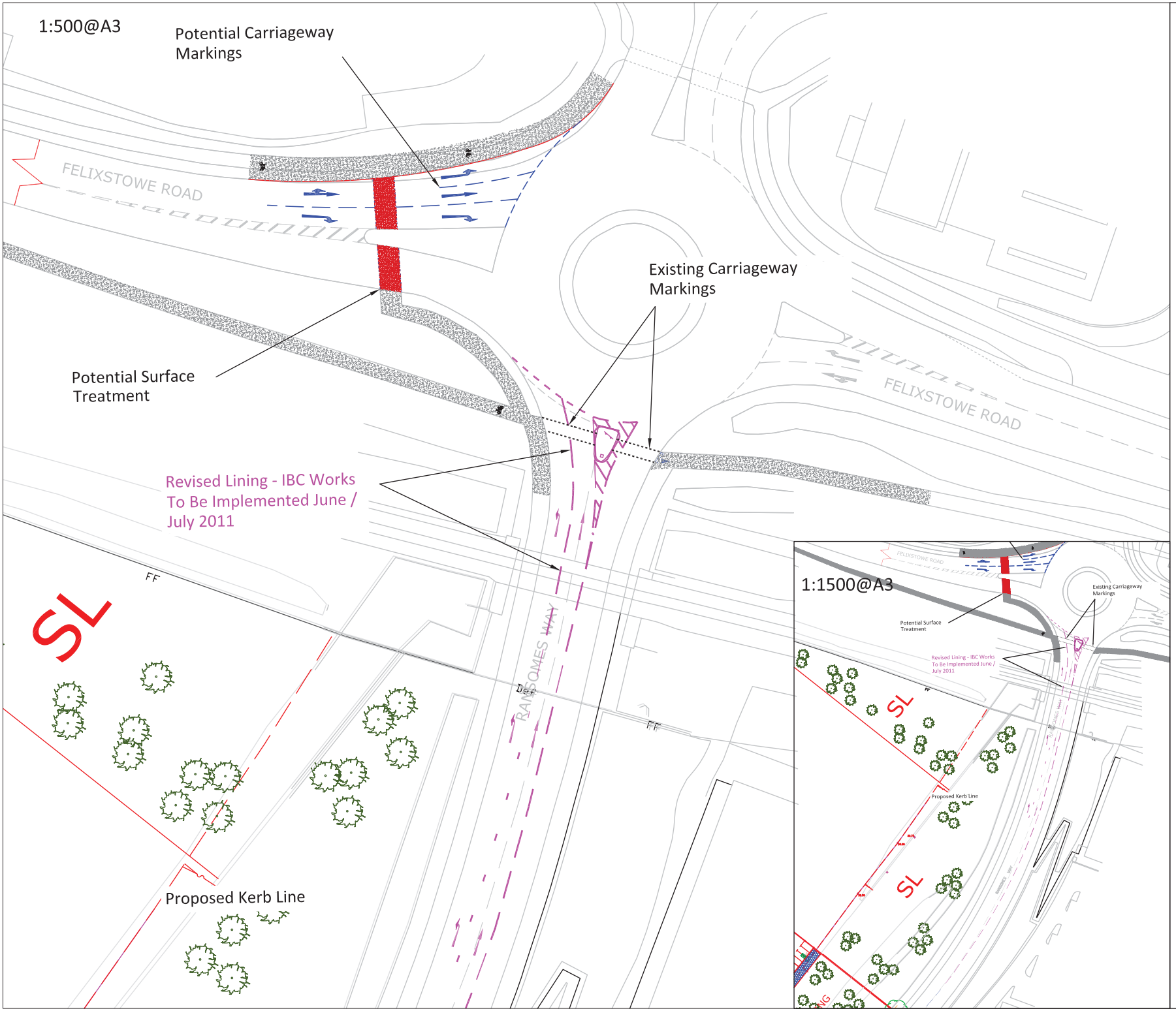
Sandy Farm Business Centre
The Sands, Farnham, GU10 1PX
Tel: 01252 782237
web: www.advancetc.co.uk

Client
AquiGen (Nacton)LLP

Project
Land West of Ransomes Way,
Ipswich

Drawing
Proposed Ransomes Way
Highway Works

Scale	Drawing Number
1:500@A3	045/09



ADVANCE
TRANSPORTATION CONSULTING
Sandy Farm Business Centre
The Sands, Farnham, GU10 1PX
Tel: 01252 782237
web: www.advancetc.co.uk

Client: AquiGen (Nacton) LLP

Project: Land West of Ransomes Way, Ipswich

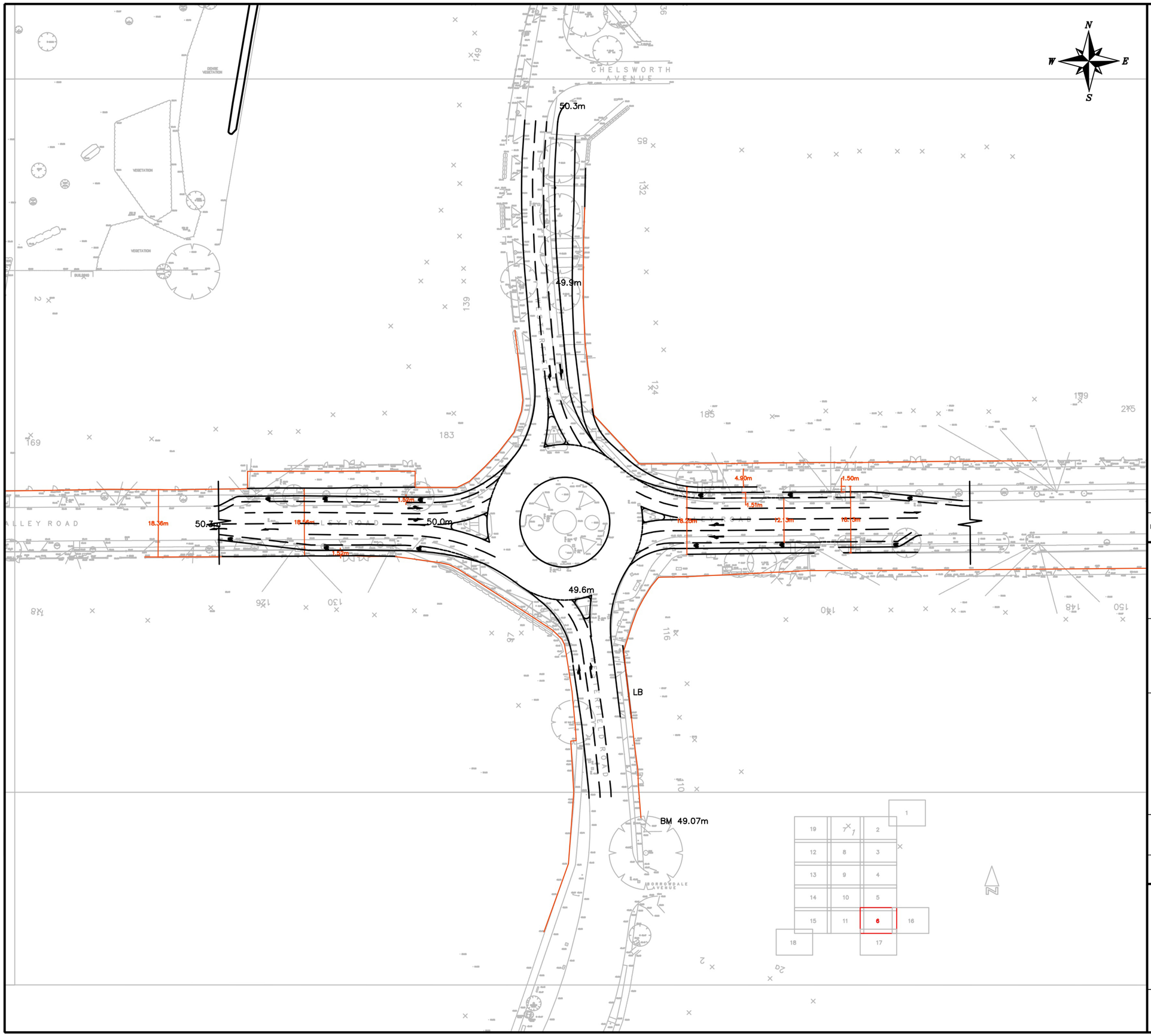
Drawing: Proposed Modifcations to Warren Heath Roundabout

Scale: Varies

Drawing Number: 045/11

NOTES

PLAN 15



REV.	DETAILS	DRAWN	CHECKED	DATE
A	Layout amendments.	MC	TR	04.06.14

CLIENT:
CBRE SPUK III (No 45) Ltd &
Mersea Homes (Ipswich) Ltd

PROJECT:
Land West of Westerfield Road
Ipswich

DRAWING TITLE:
Improvements to
A12114/ B1077 Roundabout

SCALES:
1:1000 @ A3

DRAWN:	CHECKED:	DATE:
MC	TR	17.01.14

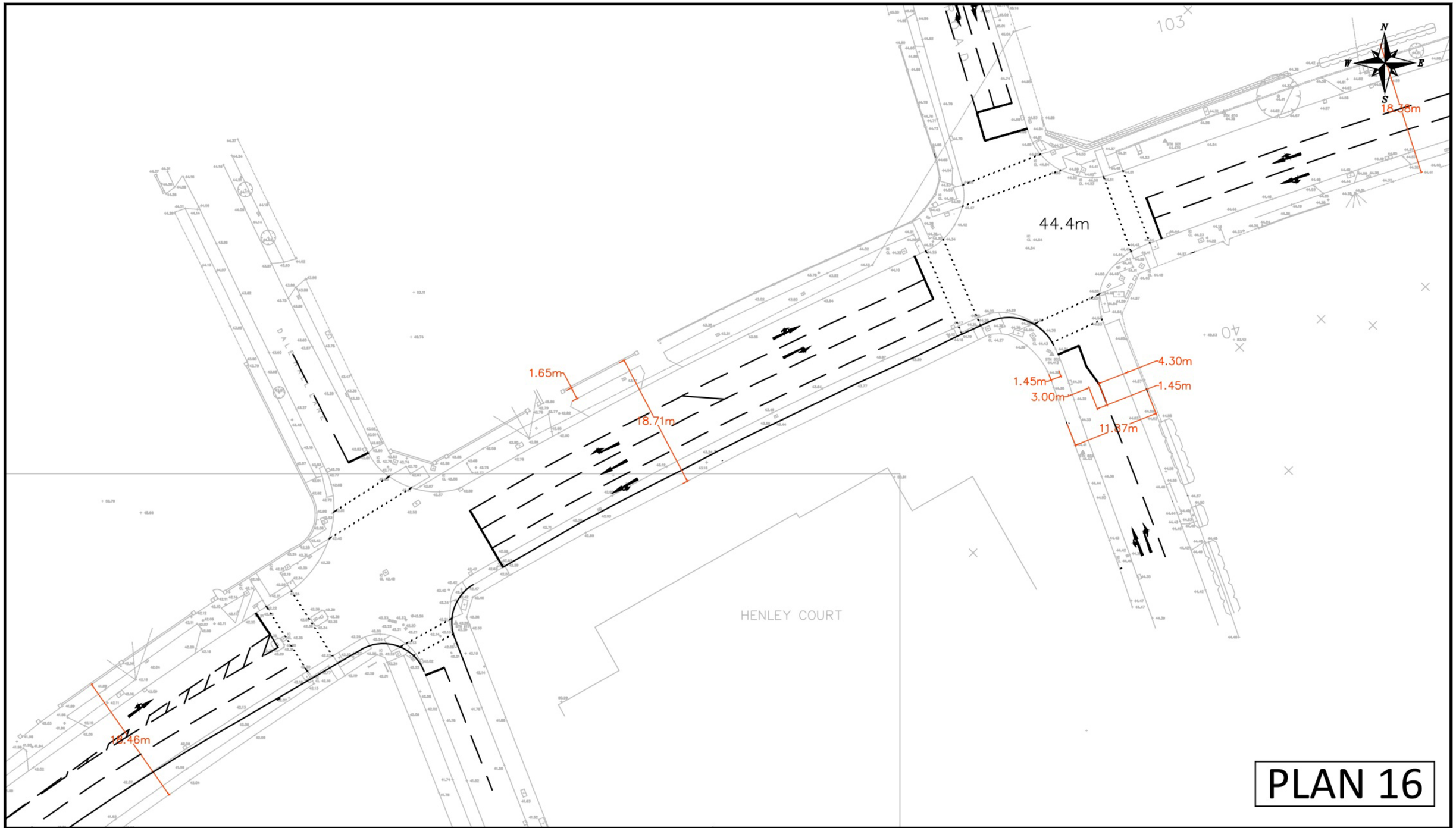
6th Floor, Quay House
Quay Street
Manchester, M3 3JE

Email: info@croftts.co.uk
Tel: 0161 827 1740
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER: 447-012

REVISION: A



PLAN 16

REV.	DETAILS	DRAWN	CHECKED	DATE
A	Layout amendments.	MC	TR	04.06.14

NOTES:

Land West of Westerfield Road, Ipswich

CBRE SPUK IIII (No 45) Ltd & Mersea Homes (Ipswich) Ltd

Improvements to
Valley Road/Henley Road & Dale Hall Lane
Junctions

6th Floor, Quay House
Quay Street
Manchester, M3 3JE

Email: info@croftts.co.uk
Tel: 0161 827 1740
Web: www.croftts.co.uk

croft Transport Solutions

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
MC	TR	07.04.14	1:500 @ A3	447-013	A



NOTES

PLAN 13

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:
CBRE SPUK III (No 45) Ltd & Mersea Homes (Ipswich) Ltd

PROJECT:
Land West of Westerfield Road Ipswich

DRAWING TITLE:
Henley Road Access

SCALES:
1:500 @ A3

DRAWN:	CHECKED:	DATE:
MC	TR	11.06.14

6th Floor, Quay House
Quay Street
Manchester, M3 3JE

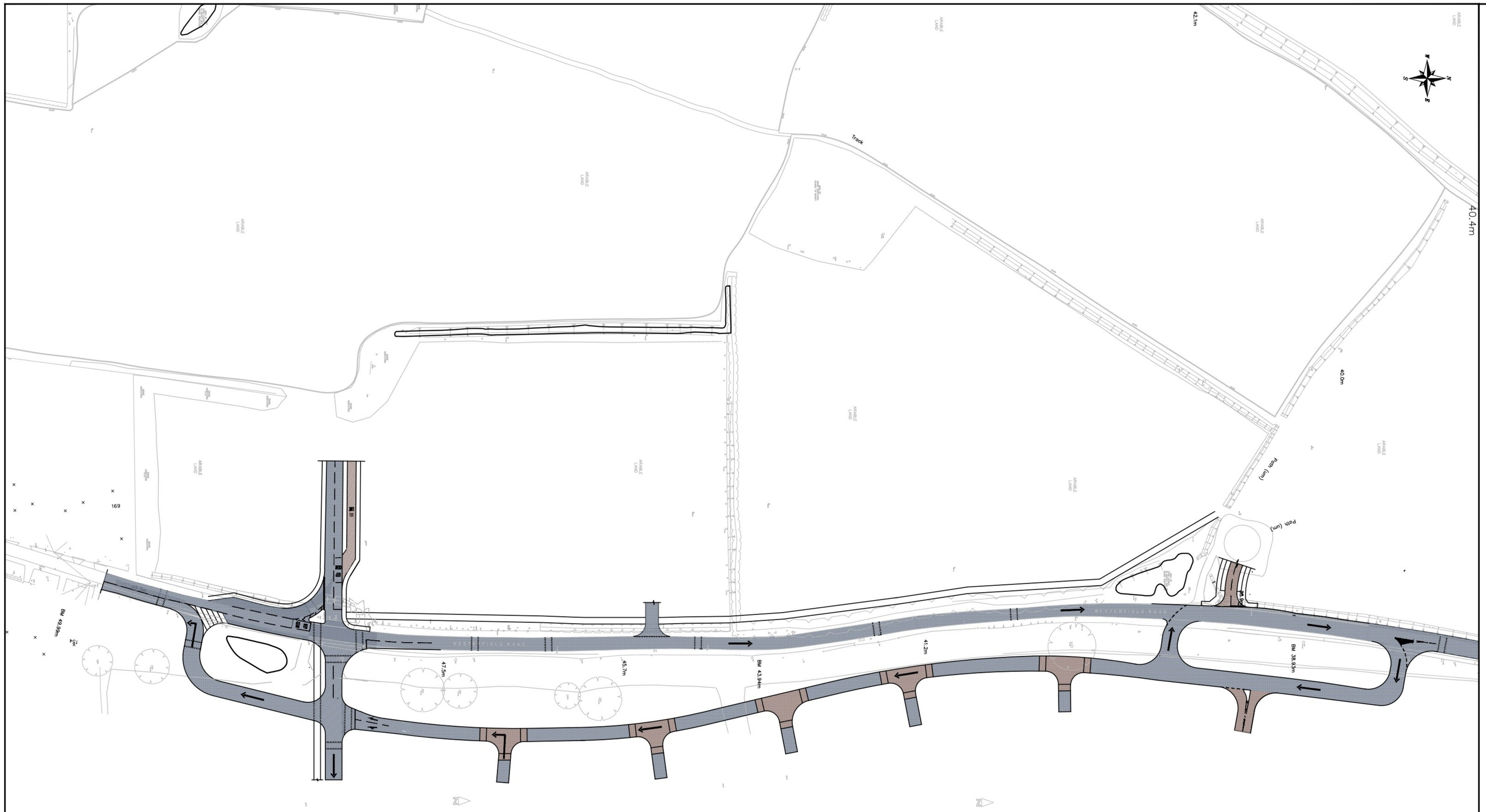
Email: info@croftts.co.uk
Tel: 0161 827 1740
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER:	REVISION:
447-014	X

NOTES

PLAN 17



REV.	DETAILS	DRAWN	CHECKED	DATE
.	.	.	.	.

CLIENT:

CBRE SPUK III (NO 45) Ltd &
Mersea Homes (Ipswich) Ltd

PROJECT:

Land West of Westerfield Road
Ipswich

DRAWING TITLE:

Conceptual Future Year
Westerfield Road
Access Arrangements

SCALES:

1:1000 @ A1

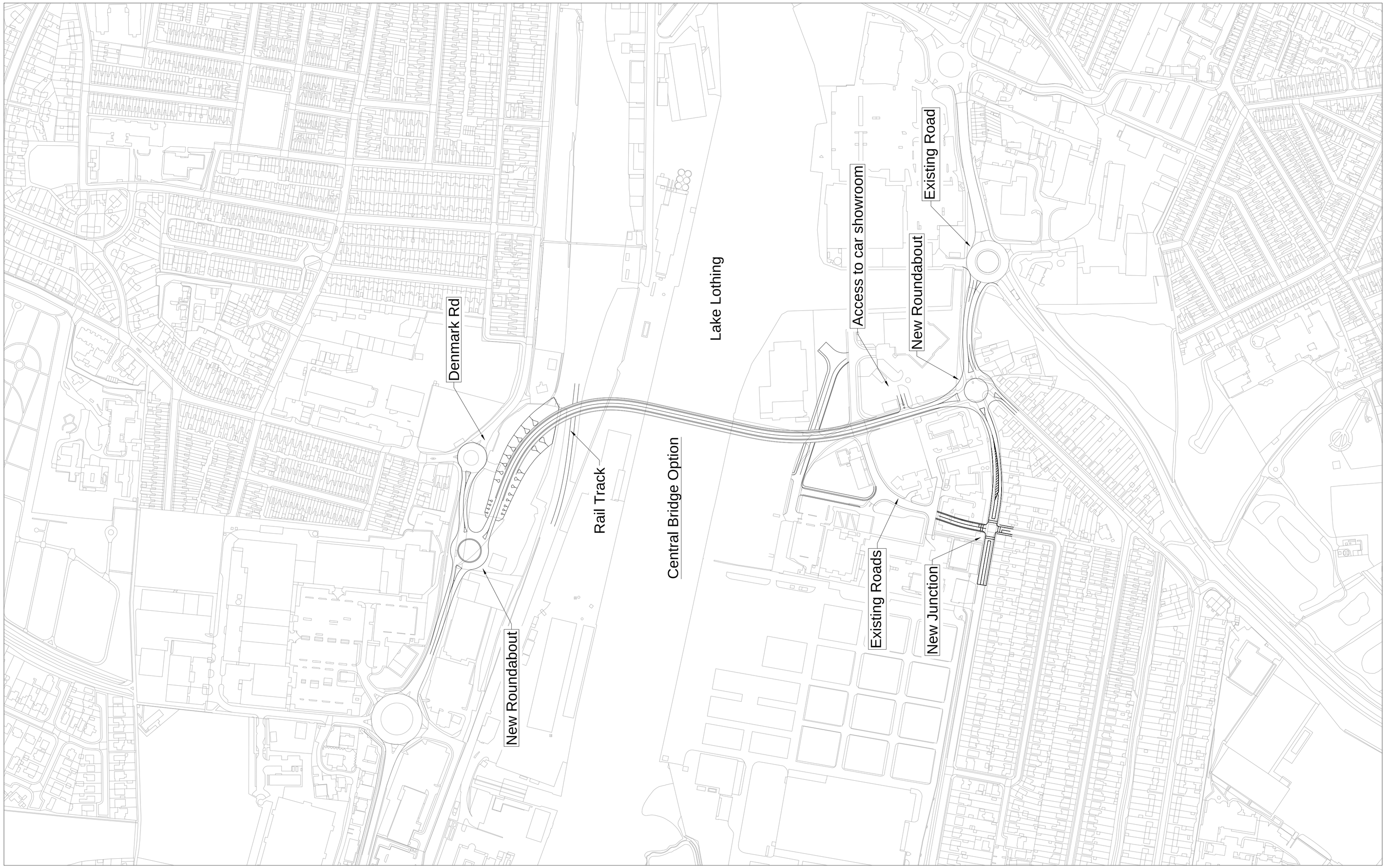
DRAWN:	CHECKED:	DATE:
HS	TR	10.07.14

6th Floor, Quay House
Quay Street
Manchester, M3 3JE

Email: info@croftts.co.uk
Tel: 0161 827 1740
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER:	REVISION:
447-200	X



Save as is permitted by the terms for the provision of this document, copyright in this document belongs to Kier Professional Services Limited. It is a condition of the supply of this document that the recipient shall not duplicate or reproduce it in whole or in part, nor disclose its contents without the written authorisation of Kier Professional Services Limited.
No liability shall be accepted for its unauthorised use.

Notes:

1. Unless shown otherwise or indicated in the Specification, whichever is the more onerous, dimensional tolerance is to be in accordance with Tables 1 and 2 of BS 5606.
2. All dimensions are in millimetres (mm) unless noted otherwise. DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
3. This drawing is to be read in conjunction with the Specification and any Specialist drawings.
4. UNLESS THE REVISION OF THIS DRAWING IS DENOTED BY THE PREFIX C THEN THIS DRAWING IS NOT FOR CONSTRUCTION.

F01	03/12/15	Issued for Information.	TDN	SE	CF

Issue codes:-
F : Feasibility | T : Tender | P: Preliminary | C : Construction | AB : As built

Drawing status: NOT FOR CONSTRUCTION

mouchel
Mouchel Consulting
Knights House, Sutton Coldfield, West Midlands B72 1PH
Tel : 0121 3558949
www.mouchel.com
Part of the Kier Group

Client: Suffolk County Council

Contract: Lake Lothing Third Crossing

Title: Central Bridge Option

Scale (A1): 1:2500

Drawing No.	Issue
1069948-OPT-C11-001	A



rev.	date	description	drn	chk'd
-	--/--/--	-	-	-

NOTES

Do not scale from this drawing, use figured dimensions only.
All dimensions to be checked on site.
All drawings to be read in conjunction with other contract documentation.
Any discrepancies to be reported to the Contract Administrator before any work commences.

© Copyright Bidwells LLP

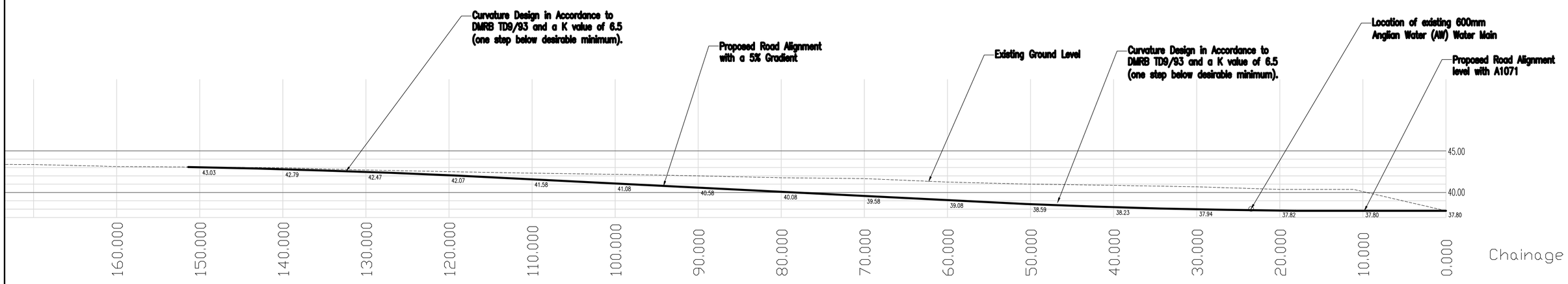
building consultancy
Number 1 Legg Street Chelmsford CM1 1JS 01245 250998
BIDWELLS

client: Suffolk Agricultural Association
project: Trinity Park, Suffolk
title: Indicative Roundabout Layouts
status: -

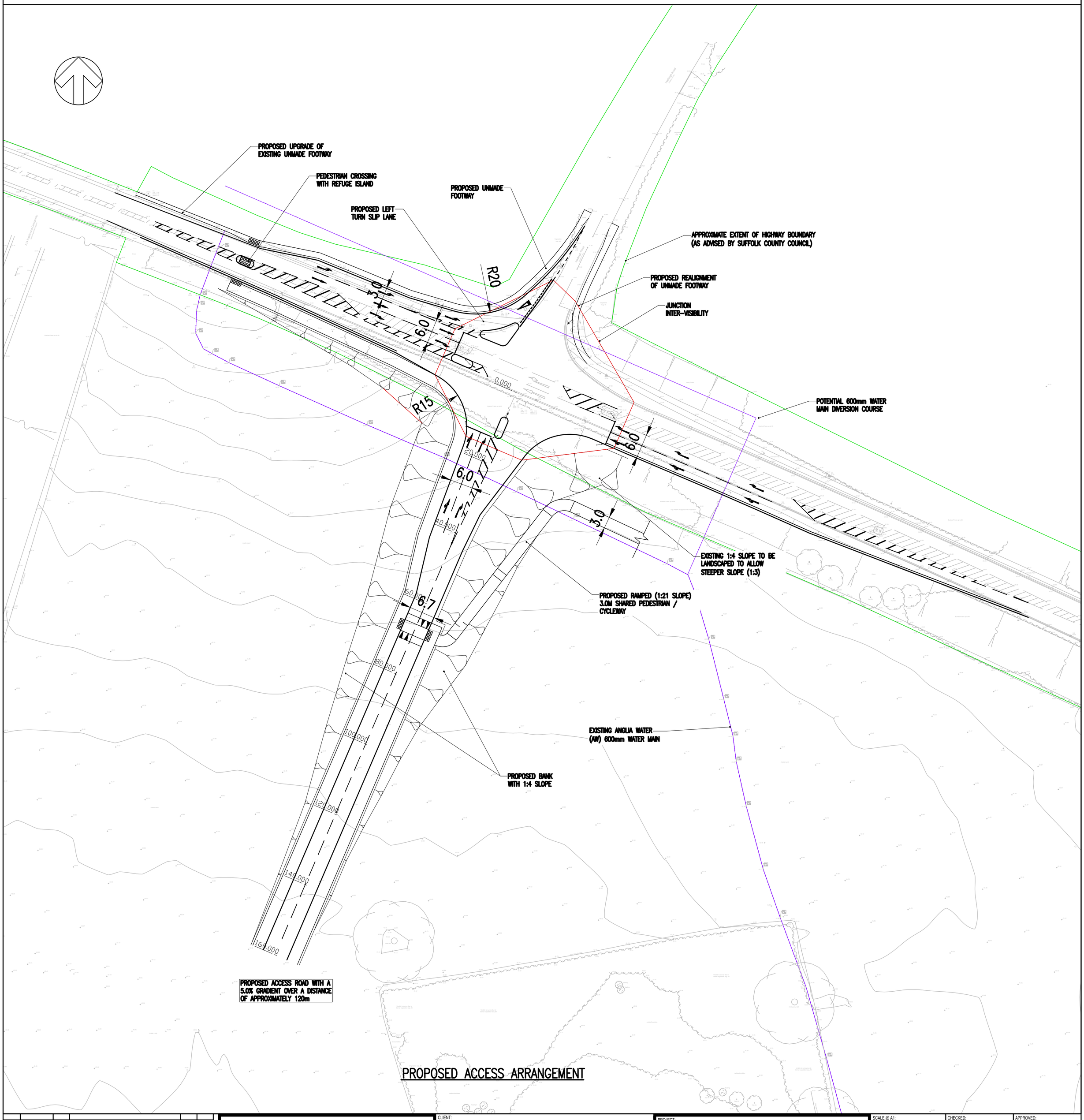
discipline	project no.	dwg no.	rev.
Transport Planning	V862400001	TR_001	-

drawn	date
SB	Aug '12
chk'd	scale @ A2
SAA	1:2,500

DO NOT SCALE



PROPOSED VERTICAL ALIGNEMENT



PROPOSED ACCESS ARRANGEMENT

REV	DATE	BY	DESCRIPTION	CHK	APD
G	21/10/15	JFD	UPDATED FOLLOWING RSA1	NE	AH
F	04/03/15	JFD	REALIGNMENT OF UNMADE FOOTWAYS	NE	AH
E	25/02/15	JFD	A1071 SOUTHBOUND LEFT TURN SLIP ROAD	NE	AH
D	06/02/15	JFD	HIGHWAY BOUNDARY	NE	AH
C	28/01/15	JFD	UPDATED WITH RAMPED PEDESTRIAN/CYLE LINK	NE	AH
B	05/12/14	JFD	UPDATED WITH WATER MAIN LOCATION	NE	AH

DRAWING STATUS: FOR INFORMATION ONLY

WSP | PARSONS BRINCKERHOFF
66-68 Hills Road, Cambridge CB2 1LA
Tel: +44 (0)1223 558 050 Fax: +44 (0)1223 558 051
www.wspgroup.com www.pbworld.com

CLIENT: PEAGASUS

ARCHITECT: TAYLOR WIMPEY STRATEGIC LAND

PROJECT: WOLSEY GRANGE, IPSWICH

TITLE: A1071 / HADLEIGH ROAD POTENTIAL 4-ARM SIGNAL CONTROLLED JUNCTION

SCALE @ A1:	CHECKED:	APPROVED:
1:500	N EGGAR	A HAMES
CAD FILE: 5244-SK-011.DWG	DESIGN-DRAWN: J DELAHOCHE	DATE: November 14

PROJECT No:	DRAWING No:	REV:
70005244	5244-SK-011	G

© WSP Group Ltd

P:\70005244 - Chantry Vale - Babergh Ipswich Fringe, IPSWICH\E Models and Drawings\Development\AUTOCAD\SK Sketches\5244-SK-011.dwg 21/10/2015 11:49:33 Delahoche, Jonathan

DO NOT SCALE

BUS STOP TO BE REMOVED ONCE ALL BUS SERVICES ARE ROUTED THOUGHT THE SITE

PROPOSED 3.0M SHARED FOOTWAY / CYCLEWAY ACCESS TO THE DEVELOPMENT

PROPOSED YELLOW BOX TO CLEAR TURNING AREA AT POPLAR LANE JUNCTION

APPROXIMATE EXTENT OF HIGHWAY BOUNDARY (AS SUGGESTED BY SUFFOLK COUNTY COUNCIL)

PROPOSED POPLAR LANE / A1071 IMPROVED JUNCTION.

PROPOSED ACCESS ROAD TO DEVELOPMENT

PROPOSED IMPROVEMENTS TO A1071 / A1214 JUNCTION DETAILED ON WSP DRAWING 5244/SK/021

PROPOSED IMPROVEMENTS TO EXISTING HOTEL ACCESS

PROPOSED BUS STOPS RELOCATION (INCLUDING ROAD MARKING, BUS STOP SIGNS, TIMETABLE INFORMATION AND SHELTERS)

PROPOSED 3-ARM ROUNDABOUT RAISED TABLE JUNCTION (FLUSH WITH FOOTWAYS). FOOTWAYS AND CARRIAGEWAY TO BE DETAILED WITH DIFFERENT MATERIALS.

FOR CONTINUATION REFER TO INSET A

FOR CONTINUATION REFER TO INSET B

INSET A

ALTERATIONS TO POPLAR LANE WEST OF PHASE 1 DEVELOPMENT ARE SHOWN AS INDICATIVE ON THIS DRAWING

TEMPORARY PHASE 1 BUS TURNING AREA. THEREAFTER, FOLLOWING LATER DEVELOPMENT PHASES THE LAYOUT WOULD PROVIDE AN EMERGENCY AND AND NON MOTORISED USERS ACCESS ONLY.

EXISTING PRIVATE VEHICULAR ACCESS TO BE IMPROVED WITH VEHICLE CROSSOVER

APPROXIMATE EXTENT OF HIGHWAY BOUNDARY (AS SUGGESTED BY SUFFOLK COUNTY COUNCIL)

PROPOSED INFORMAL PEDESTRIAN RAISED CROSSING

PERMISSIVE PATH TO A1214

2.0M FOOTWAY

5m SHARED PRIVATE DRIVE

APPROXIMATE EXTENT OF HIGHWAY BOUNDARY (AS SUGGESTED BY SUFFOLK COUNTY COUNCIL)

PROPOSED CYCLE AND PEDESTRIAN CROSSING. RAISED TABLE, SURFACING AND PRIORITY GIVEN TO NON-MOTORISED USERS

SHARED 3.0M FOOTWAY / CYCLEWAY

5m SHARED PRIVATE DRIVE

ESTATE ROAD TO MAIN RESIDENTIAL AREA

PROPOSED SEGREGATED FOOTWAY (2.0M) / CYCLEWAY (3.0M)

PROPOSED ACCESS ROAD TO FUTURE DEVELOPMENT

FOR CONTINUATION REFER TO INSET B

INSET B

REV	DATE	BY	DESCRIPTION	CHK	APD
I	19/10/15	JFD	REVISED TO ACCOMMODATE BUS U-TURN	JC	NJ
H	05/10/15	JFD	REVISED FOLLOWING ACCOM COMMENTS	JC	NJ
G	17/09/15	JFD	REVISED FOLLOWING SAFETY AUDIT COMMENTS	JC	NJ
F	17/07/15	JFD	SLIGHTLY ALTERED FOLLOWING ACCOM TN COMMENTS	TJE	NJ
E	22/05/15	JFD	REVISED ACCESSES TO RESIDENTIAL AREAS SOUTH OF POPLAR LANE	TJE	NJ
D	26/02/15	JFD	MINOR CHANGES	TJE	NJ
C	12/02/15	JFD	REVISED TO SUIT ARCHITECT DRAWINGS	TJE	NJ
B	06/02/15	JFD	HIGHWAY BOUNDARY	TJE	NJ
A	26/01/15	JFD	FIRST ISSUE	TJE	NJ

DRAWING STATUS: FOR INFORMATION ONLY

WSP
66-68 Hills Road, Cambridge CB2 1LA
Tel: +44 (0)1223 558 050 Fax: +44 (0)12 2355 8051
http://www.wspgroup.com

CLIENT: TAYLOR WIMPEY STRATEGIC LAND

ARCHITECT: PEGASUS

PROJECT: WOLSEY GRANGE, IPSWICH

TITLE: PROPOSED POPLAR LANE HIGHWAY IMPROVEMENTS

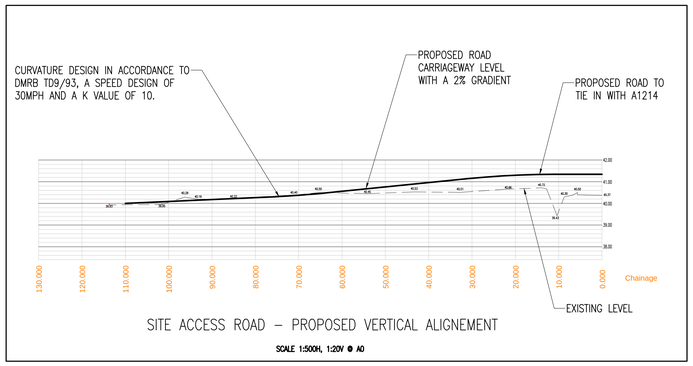
SCALE @ A0:	DRAWN:	CHECKED:	APPROVED:
1:500	JFD	N EGGAR	A HAMES
CAD FILE: 5244-SK-20	DESIGN DRAWN: J DELAHOCHE	DATE: January 2015	

PROJECT No: 70005244 | DRAWING No: 5244-SK-20 | REV: I

© WSP Group Ltd

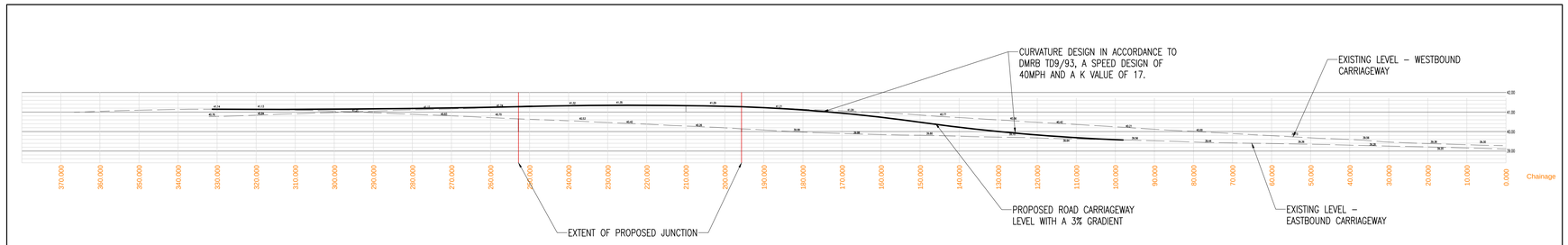
P:\70005244 - Chantry Vale - Babergh Ipswich Fringe, IPSWICH\E Models and Drawings\Development\AUTOCAD\SK Sketches\5244-SK-20.dwg 21/10/2015 13:05:31 Delahoche, Jonathon

DO NOT SCALE



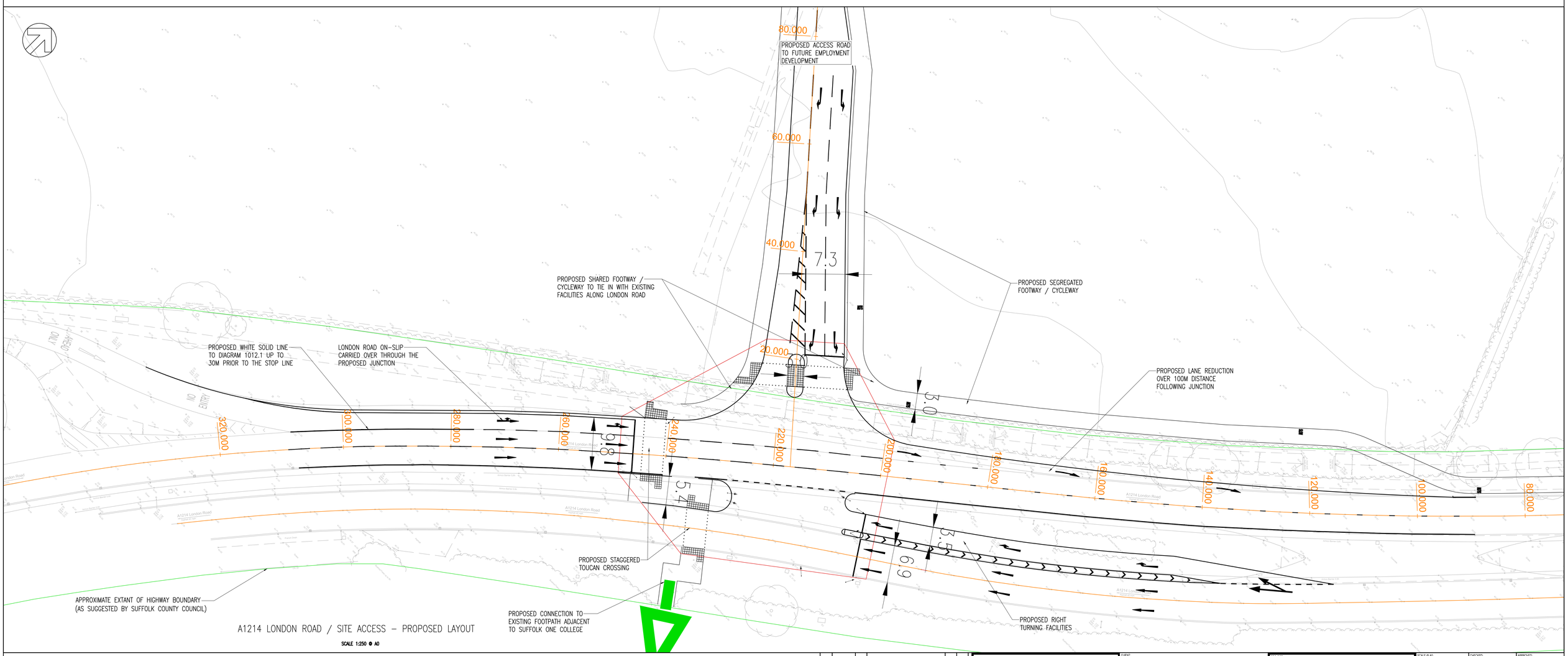
SITE ACCESS ROAD – PROPOSED VERTICAL ALIGNEMENT

SCALE 1:500H, 1:20V @ A0



A1214 LONDON ROAD – PROPOSED VERTICAL ALIGNEMENT

SCALE 1:500H, 1:20V @ A0



A1214 LONDON ROAD / SITE ACCESS – PROPOSED LAYOUT

SCALE 1:250 @ A0

REV	DATE	BY	DESCRIPTION	CHK	APD
F	16/09/15	JFD	REVISED TO FOLLOW ROAD SAFETY COMMENTS	NE	AH
E	17/07/15	JFD	REVISED FOLLOWING AECOM TN COMMENTS	NE	AH
D	26/02/15	JFD	REVISED RIGHT TURN LANE & WHITE MARKINGS	NE	AH
C	06/02/15	JFD	HIGHWAY BOUNDARY	NE	AH
B	30/01/15	JFD	REVISED TO SUIT SCC COMMENTS ON LONDON RD OFF SLIP	NE	AH

DRAWING STATUS: FOR INFORMATION ONLY

WSP
66-68 Hills Road, Cambridge CB2 1LA
Tel: +44 (0)1223 558 050 Fax: +44 (0)1223 558 051
http://www.wspgroup.com

CLIENT: TAYLOR WIMPEY STRATEGIC LAND

ARCHITECT: PEGASUS

PROJECT: WOLSEY GRANGE, IPSWICH

TITLE: PROPOSED SIGNAL CONTROLLED JUNCTION A1214 LONDON ROAD

SCALE @ A0:	CHECKED:	APPROVED:
AS SHOWN	N EGGAR	A HAMES
CAD FILE:	DESIGN/DRAWN:	DATE:
5244-SK-22.DWG	J DELAHOCHE	January 15
PROJECT No:	DRAWING No:	REV:
70005244	5244-SK-22	F

© WSP Group Ltd

P:\70005244 – CHANTRY VALE – BABERGH IPSWICH FRINGE, IPSWICH\E MODELS AND DRAWINGS\DEVELOPMENT\AUTOCAD\SK SKETCHES\5244–SK–22.DWG 16/09/2015 18:34:17 Delahoche, Jonathan

DO NOT SCALE

PROPOSED BUILD-OUT

PROPOSED ROAD MARKING AMENDMENTS AND DESTINATION ARROWS

PROPOSED SIGNAL CONTROLLED JUNCTION BETWEEN THE A1214 SOUTHBOUND ARM AND GYRATORY LANES

PROPOSED ROAD MARKING AMENDMENTS TO GUIDE VEHICLES THROUGH THE REVISED JUNCTION LAYOUT

PROPOSED LANE DESTINATION ARROWS

PROPOSED AMENDMENT TO LANE DESTINATION ARROW

PROPOSED SLIGHT ROAD MARKING AMENDMENTS

P:\70005244 - Chantry Vale - Babergh Ipswich Fringe, IPSWICH\E Models and Drawings\Development\AUTOCAD\SK Sketches\5244-SK-26.dwg 17/09/2015 18:22:21 Delahoche, Jonathan

Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Licence no. 100048755. Crown copyright reserved.

REV	DATE	BY	DESCRIPTION	CHK	APD
c	17/09/15	JFD	REVISED FOLLOWING ROAD SAFETY AUDIT	GC	AH
B	04/03/15	JFD	REVISED FOLLOWING CAPACITY ASSESSMENT	NE	AH
A	27/02/15	JFD	FIRST ISSUE	NE	AH

DRAWING STATUS: FOR INFORMATION ONLY

WSP
66-68 Hills Road, Cambridge CB2 1LA
Tel: +44 (0)1223 558 050 Fax: +44 (0)1223 558 051
http://www.wspgroup.com

CLIENT: TAYLOR WIMPAY STRATEGIC LAND

ARCHITECT: PEGASUS

PROJECT: WOLSEY GRANGE, IPSWICH

TITLE: A1214 / SCRIVENER DRIVE / RETAIL PARK ACCESS PROPOSED HIGHWAY IMPROVEMENTS

SCALE @ A1:	CHECKED:	APPROVED:
1:250	N EGGAR	A HAMES
CAD FILE:	DESIGN-DRAWN:	DATE:
5244-SK-26.DWG	J DELAHOCHE	February 15

PROJECT No:	DRAWING No:	REV:
70005244	5244-SK-26	C

© WSP Group Ltd

APPENDIX 8C: VISUM TRAFFIC MODEL CUMULATIVE ASSESSMENT MODELLING INPUTS

Contents

- Technical Note describing the Cumulative Assessment Traffic Inputs

SIZEWELL C VISUM TRAFFIC MODEL

TECHNICAL NOTE: CUMULATIVE ASSESSMENT MODELLING INPUTS

Quality management		Project number	50400326-50B	Report number		File reference	
Version	Date	Author	Signed	Checked	Signed	Authorised	Signed
First issue	11 October 2019	Sally Powell		Stephanie Biggs		Nick Cottman	

1.0 INTRODUCTION

1.1. As part of the Sizewell C strategic VISUM traffic modelling for DCO, assessments have been undertaken on three forecast years:

- 2023 – 'Early Years' phase of construction
- 2028 – 'Peak Construction'
- 2034 – 'Operational Traffic'

1.2. Seven individual modelled hours have been assessed:

- 06:00-09:00 hours
- 15:00-19:00 hours

1.3. A separate application is being put forward by Scottish Power (SPR) to develop the East Anglia project which would begin construction sooner than the Sizewell C project. However if both projects were to go ahead, the construction phases would likely overlap, therefore it was agreed with Suffolk County Council (SCC), during a meeting on 19 September 2018, and subsequently with SPR during a meeting on 12 March 2019, that the SPR development traffic should be considered as part of the Sizewell C assessments since the traffic associated with each project would use some of the same roads.

1.4. Since the SPR development is not committed it should not be included within the 'Reference Case' or 'With Development' Sizewell C scenarios but it should be included within a 'Cumulative' scenario for the air quality, noise and vibration assessments. In addition, the junction modelling carried out to assess capacity impacts will include the SPR traffic in the first instance to ensure the 'worst case' traffic flows are used to assess junction performance. Further detail on the scenarios assessed will be provided in the Transport Assessment.

1.5. Following discussions with SPR it was determined that the construction of two elements of the SPR's East Anglia project could overlap with the construction of Sizewell C:

- 'East Anglia 1 North' (EA1N)
- 'East Anglia 2' (EA2)

1.6. These two projects are assumed to be under construction during the Sizewell C 'Early Years' phase of construction (currently 2023) and could potentially be constructed either consecutively or concurrently. For the

purposes of assessing a worst case, the 'concurrent build' traffic flows have been used, derived from the Preliminary Environmental Information (PEI)[1] for the 'EA1N&2' development.

1.7. Although the proposed timeline for construction shows the 'EA1N&2' development completed before the Sizewell C 'Peak Construction' year (currently 2028) under a concurrent build, if the construction programme were to be delayed the concurrent build could still be continuing in 2028 therefore the full 'EA1N&2' traffic flows have also been assessed in the Sizewell C 2028 Peak Construction scenario. The SPR development would be completed by the Sizewell C Operational Traffic assessment year (2034) therefore it has not been assessed in this forecast year.

1.8. This document sets out the calculation of SPR traffic flows relating to the construction of EA1N&2, for the purposes of assessing a 'Cumulative' scenario in 2023 (Sizewell C 'Early Years') and 2028 (Sizewell C 'Peak Construction').

2.0 DEVELOPMENT INPUTS – SUMMARY

2.1 The development inputs obtained from the SPR PEI are summarised below in **Table 1**. A diagram of the associated onshore development locations is provided in **Figure 1**.

Table 1 – Development Inputs – SPR EA1N&2

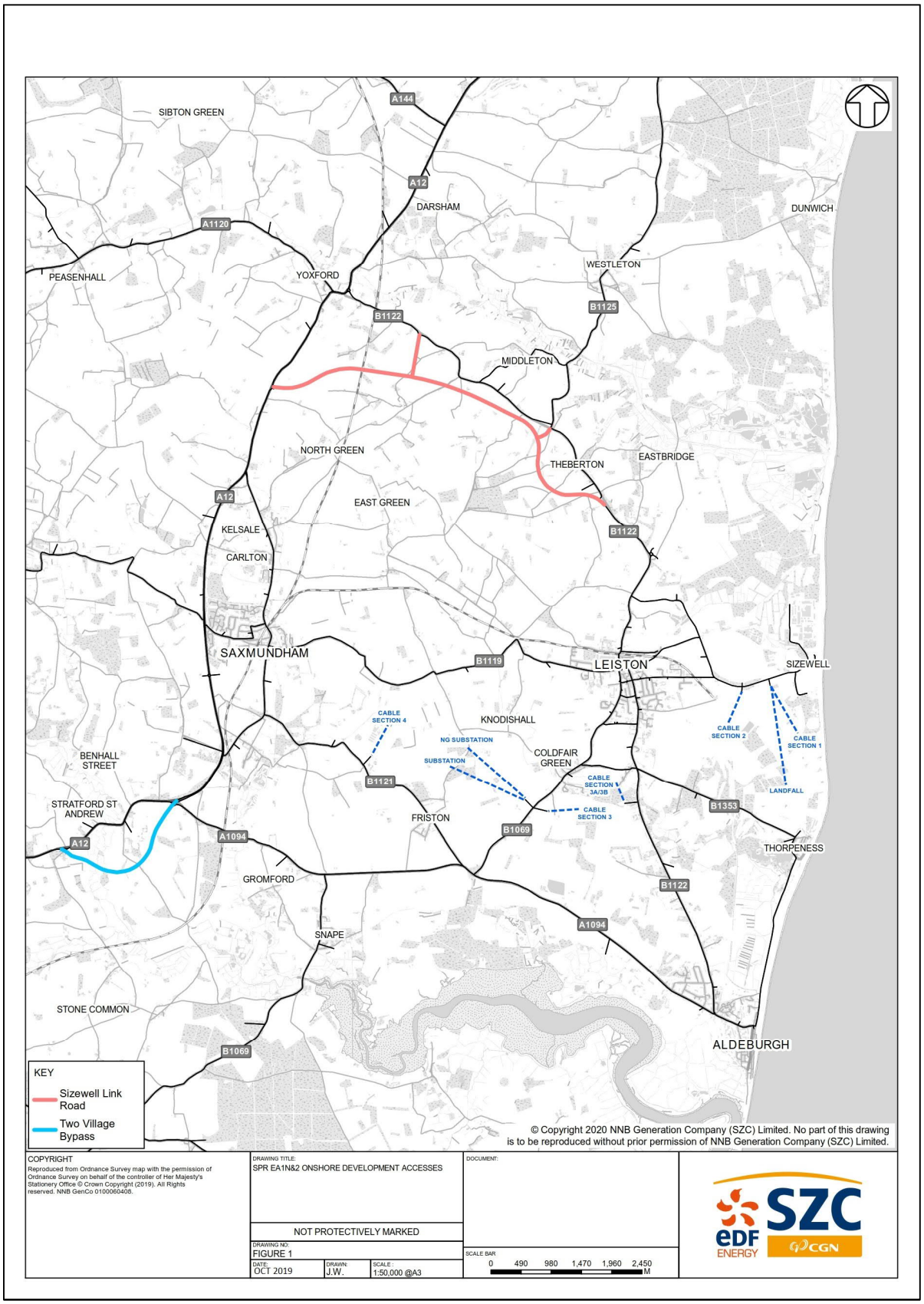
ELEMENT	INPUT PARAMETER
Developments	• East Anglia 1 North (EA1N) • East Anglia 2 (EA2)
Build programme	Concurrent ('EA1N&2')
Forecast years for cumulative assessment	• 2023 (Sizewell C 'Early Years') • 2028 (Sizewell C 'Peak Construction')
Development locations	• Landfall • Cable Section 1 • Cable Section 2 • Cable Section 3 • Cable Section 3a/3b • Cable Section 4 • Substation • National Grid (NG) Substation
Hours of car traffic movements	Network peaks: • 8-9am for workers travelling to work • 5-6pm for workers travelling from work

[1] East Anglia One North Offshore Windfarm Preliminary Environmental Information Volume 1, and East Anglia Two Offshore Windfarm Preliminary Environmental Information Volume 1

ELEMENT	INPUT PARAMETER
Hours of HGV movements	Delivery window 07:00:1900 hours, with ten hours delivery times allocated so 1/10th of trips are modelled in each hour to allow for breaks in deliveries. Evenly spread arrivals and departures within same hour.
Routing of car traffic	Any route.
Routing of HGVs from the A12	Via B1122 (Sizewell link road in 2028) and Sizewell Gap: • Landfall • Cable Section 1 • Cable Section 2 Via A1094: • Cable Section 3 • Cable Section 3a/3b • Cable Section 4 • Substation • NG Substation
Wider distribution of HGVs	The distribution of SPR HGVs, to each site, for the cumulative assessment is based on that of the Sizewell C HGVs: • 85% from south • 15% from north Note that SPR's assessment is based on a desktop study assuming either all HGVs from the north or all from the south, as a worst case. For the purposes of modelling the Sizewell C Cumulative assessment the above Sizewell C split has been assumed, which was agreed with SPR during a meeting on 19 September 2018.

2.2 A diagram of the associated onshore development location access points is provided in **Figure 1**, which was derived from Figure 26.7 contained in Chapter 26 "Traffic and Transport" of the EA2 PEI Volume 2.

Figure 1 – SPR EA1N&2 onshore development site accesses



2.3 **Figure 1** shows the highway access points for car traffic. The routing of SPR HGV traffic, from the A12, is shown on **Figure 2**. This was derived from Figure 1 contained in the "EA Two and EA One North Traffic and Transport Factsheet" which formed part of the PEI. Since the PEI was submitted SPR has confirmed that the Friston site would be taken forward over the Broom Grove site, and that for the purposes of modelling the Sizewell C cumulative scenario, HGV access to the Landfall area should be assumed via the B1122 and Sizewell Gap rather than the A1094 and B1353.

2.4 Note that **Figures 1 and 2** show the two village bypass and Sizewell link road which form part of Sizewell C's proposals. These would not be in place during the Early Years phase of construction but would be completed by Peak Construction, so in the 2028 Cumulative assessment SPR traffic is expected to use these proposed bypass routes, but in the 2023 assessment SPR traffic would use the existing A12 through Farnham and the B1122 through Theberton.

2.5 Each of the items listed in **Table 1** is described in detail in the following sections.

2.6 The VISUM model zone numbers assigned to each SPR development area are listed in **Table 2**.

www.wsp.com

Figure 2 – SPR EA1N&2 HGV routes from the A12

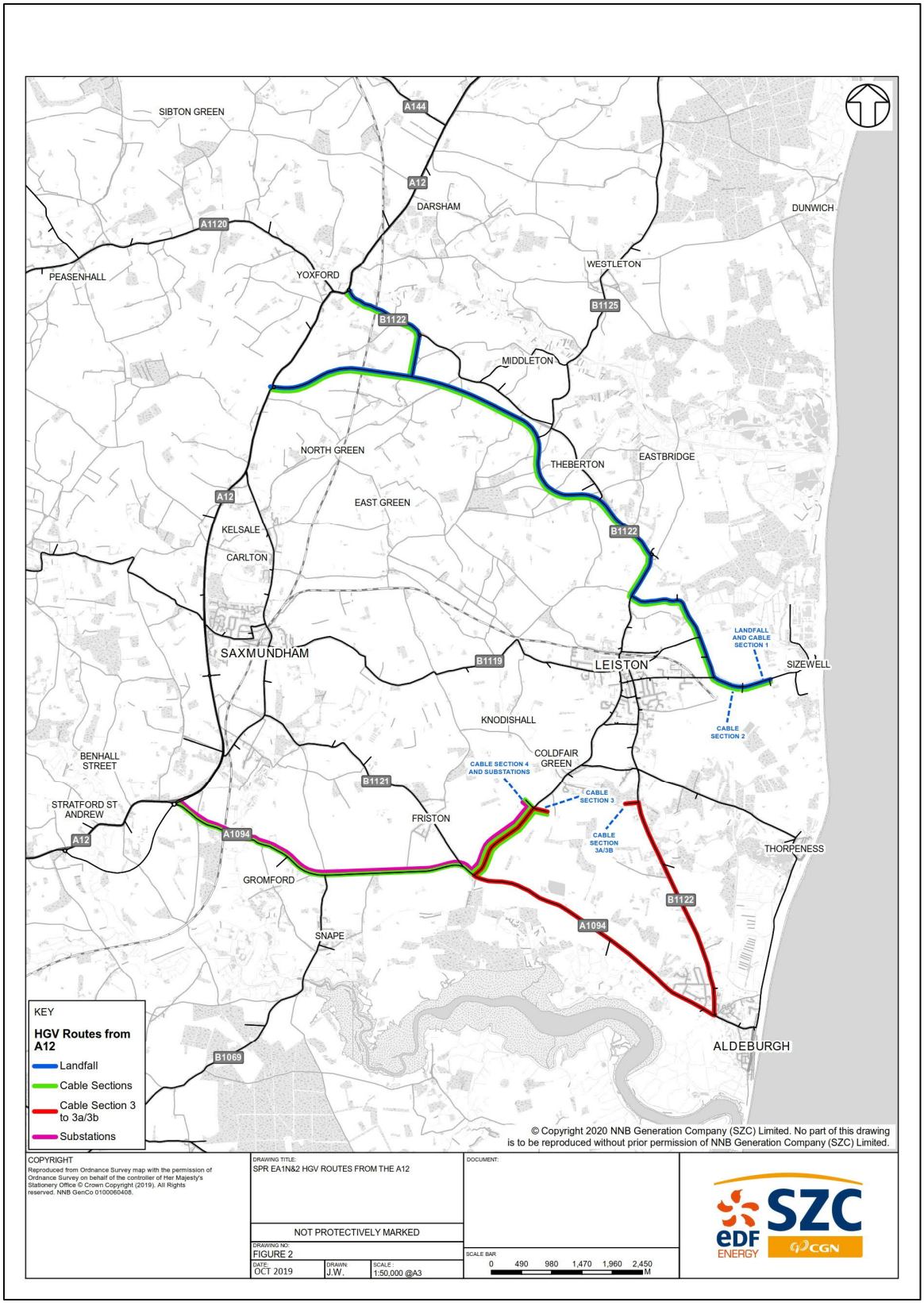


Table 2 – SPR EA1N&2 Development Zones

SITE	VISUM ZONE NUMBER
Landfall	1151
Cable Section 1	1152
Cable Section 2	1153
Cable Section 3	1154
Cable Section 3a/3b	1155
Cable Section 4	1156
Substation	1157
NG Substation	1158

3.0 WORKFORCE INPUTS

3.1 The assessed workforce numbers for a concurrent build of EA1N&2, taken from the PEI for EA1N&2, are shown in **Table 3** along with the resultant car trips, assuming a car share factor of 1.5 at all sites except the NG Substation.

Table 3 – SPR EA1N&2 Onshore Site Worker Trips

SITE	WORKERS	CARS	
		EACH WAY	TWO-WAY
Landfall	32	21	42
Cable Section 1	70	47	94
Cable Section 2	53	35	70
Cable Section 3	44	29	58
Cable Section 4	47	31	62
Substation	92	61	122
NG Substation	19	19	38
Total	**357**	**243**	**486**

3.2 In addition, of the 44 workers at Cable Section 3, nine workers (six car trips each way) would travel on to work at Cable Section 3a/3b.

3.3 The proportions of home based and non-home based workers, defined in the PEI for EA1N&2, are as follows:

- 'home based' (living at home) – 34%
- 'non-home based' (living temporarily in rented accommodation) – 66%

3.4 The assumed distribution of workforce contained in the PEI for EA1N&2 is shown in **Table 4**, and split by worker type as described above.

Table 4 – SPR EA1N&2 Workforce Distribution

SITE	% OF WORKERS	CARS	
		EACH WAY	TWO-WAY
Home Based (34%)			
Halesworth, Bungay, Beccles, Southwold, Lowestoft, Harleston, Long Stratton, Norwich, Great Yarmouth	31.0	25.6	51.2
Saxmundham	8.3	6.9	13.7
Ipswich, Felixstowe, Framlingham, Woodbridge, Manningtree, Colchester, Bury St Edmunds	42.4	35.0	70.1
Aldeburgh	1.6	1.3	2.6
Leiston	5.8	4.8	9.6
Stowmarket, Diss and Eye	10.9	9.0	18.0
Total	**100**	**82.6**	**165.2**
Non-Home Based (66%)			
Halesworth, Bungay, Beccles, Southwold, Lowestoft	31.9	51.2	102.3
Saxmundham	13.0	20.8	41.7
Ipswich, Felixstowe, Framlingham, Woodbridge	28.7	46.0	92.1
Aldeburgh	17.3	27.7	55.5
Leiston	9.1	14.6	29.2
Total	**100**	**160.4**	**320.8**

3.5 For each of the areas shown in **Table 4**, the appropriate VISUM model zones were allocated and the distribution of existing traffic from these zones in the 2023 reference case model was used to provide a trip distribution for each of the onshore sites shown in **Table 3**.

3.6 As stated in the EA1N&2 PEI, all workers are assumed to travel in the network peaks, so the construction workers at each site are assumed to travel from home to work during 08:00-09:00 hours, and from work to home during 17:00-18:00 hours.

4.0 GOODS VEHICLES

Light Goods Vehicles

4.1 No indication of Light Goods Vehicle (LGV) movements is provided in the EA1N&2 PEI, so these are not included in the modelling.

Heavy Goods Vehicles

4.2 HGVs would undertake deliveries to each of the sites listed in **Table 2**.

4.3 The assessed HGV volumes for a concurrent build of EA1N&2, taken from the PEI for EA1N&2[2], are shown in **Table 5**. It is understood that the initial number of assessed HGV deliveries to each site was based on a 'worst case scenario' with various site construction peaks coinciding, and that the total two-way HGVs on the A12 would be capped at 322 per day as stated in the PEI. The HGVs to and from each site have therefore been factored to reflect this daily cap.

Table 5 – SPR EA1N&2 HGV Daily Trips

SITE	EACH WAY	TWO-WAY	CAPPED TWO-WAY
Landfall	22.5	45	35
Cable Section 1	27	54	42
Cable Section 2	26.5	53	42
Cable Section 3	24	48	38
Cable Section 4	41.5	83	65
Substation	41	82	64
NG Substation	22.5	45	35
Total	**205**	**410**	**322**

4.4 In addition, of the 38 HGVs travelling to Cable Section 3, eight would travel on to Cable Section 3a/3b.

4.5 The PEI for EA1N&2, which is based on a desktop assessment of link flows rather than a highway assignment model, assumed a 'worst case' of all HGVs travelling from the A12 north AND all HGVs travelling from the A12 south. For the Sizewell C cumulative assessment, which uses a VISUM highway assignment model, it has been agreed with SPR that the distribution of SPR construction HGVs beyond the A12 would be based on that applied for the Sizewell C construction HGVs, as set out below:

- North (15%):
  - Norwich – 5%
  - Lowestoft – 10%
- South (85%):
  - London/South of England (including Colchester and Chelmsford) – 60%
  - Felixstowe – 15%
  - Ipswich – 10%

4.6 This split is applied to each onshore development site listed in **Table 5**, resulting in volumes shown in **Table 6**.

[2] EA2_PEI_Ch26_App26-21-Assignment_of_HGV_and_Employee_Traffic_to_the_Highway_Network_Scen1.pdf

Table 6 – SPR EA1N&2 HGV Distribution

SITE	CAPPED TWO-WAY	A12 NORTH	A12 SOUTH
Landfall	35	5	30
Cable Section 1	42	6	36
Cable Section 2	42	6	35
Cable Section 3	38	6	32
Cable Section 4	65	10	55
Substation	64	10	55
NG Substation	35	5	30
Total	**322**	**48**	**274**

4.7 As indicated in **Figure 2** access to the Landfall and Cable Sections 1 and 2 would be via the B1122 (and Sizewell link road in the cumulative scenario) and Sizewell Gap. Access to Cable Sections 3 and 4, the Substation and NG Substation would be via the A1094 and B1069. Since the deliveries to each site would be split between A12 north and A12 south, there would be some HGV movements expected on the A12 Saxmundham bypass, made up of those from A12 south to the Landfall and Cable Sections 1 and 2, and those from A12 north to the Substations and Cable Sections 3 and 4 (and in the reverse direction).

4.8 As indicated in T**able 1**, within the PEI for EA1N&2 a 12-hour delivery window was defined for HGVs between 07:00-19:00 hours, and it was assumed that deliveries would be made within ten of those hours, allowing for breaks in deliveries. Return trips were assumed to be made within the hour. Consequently for the Sizewell C cumulative assessment, the HGV flows assigned in the seven modelled hours were calculated as shown in **Table 7**. Numbers have been rounded.

Table 7 – SPR EA1N&2 HGV Hourly Flows (each way)

HOUR	%	TOTAL	LANDFALL	CABLE 1	CABLE 2	CABLE 3	CABLE 4	SUB	NG SUB
06:00-07:00	0%	-	-	-	-	-	-	-	-
07:00-08:00	10%	16	2	2	2	2	3	3	2
08:00-09:00	10%	16	2	2	2	2	3	3	2
15:00-16:00	10%	16	2	2	2	2	3	3	2
16:00-17:00	10%	16	2	2	2	2	3	3	2
17:00-18:00	10%	16	2	2	2	2	3	3	2
18:00-19:00	10%	16	2	2	2	2	3	3	2
Total (24 hours)	**100%**	**161**	**18**	**21**	**21**	**19**	**33**	**32**	**18**
Total (two-way)	**100%**	**322**	**35**	**42**	**42**	**38**	**65**	**64**	**35**

5.0 MITIGATION

5.1 As set out in the PEI for EA1N&2, the following mitigation is proposed and has been included in the Sizewell C cumulative modelling scenarios:

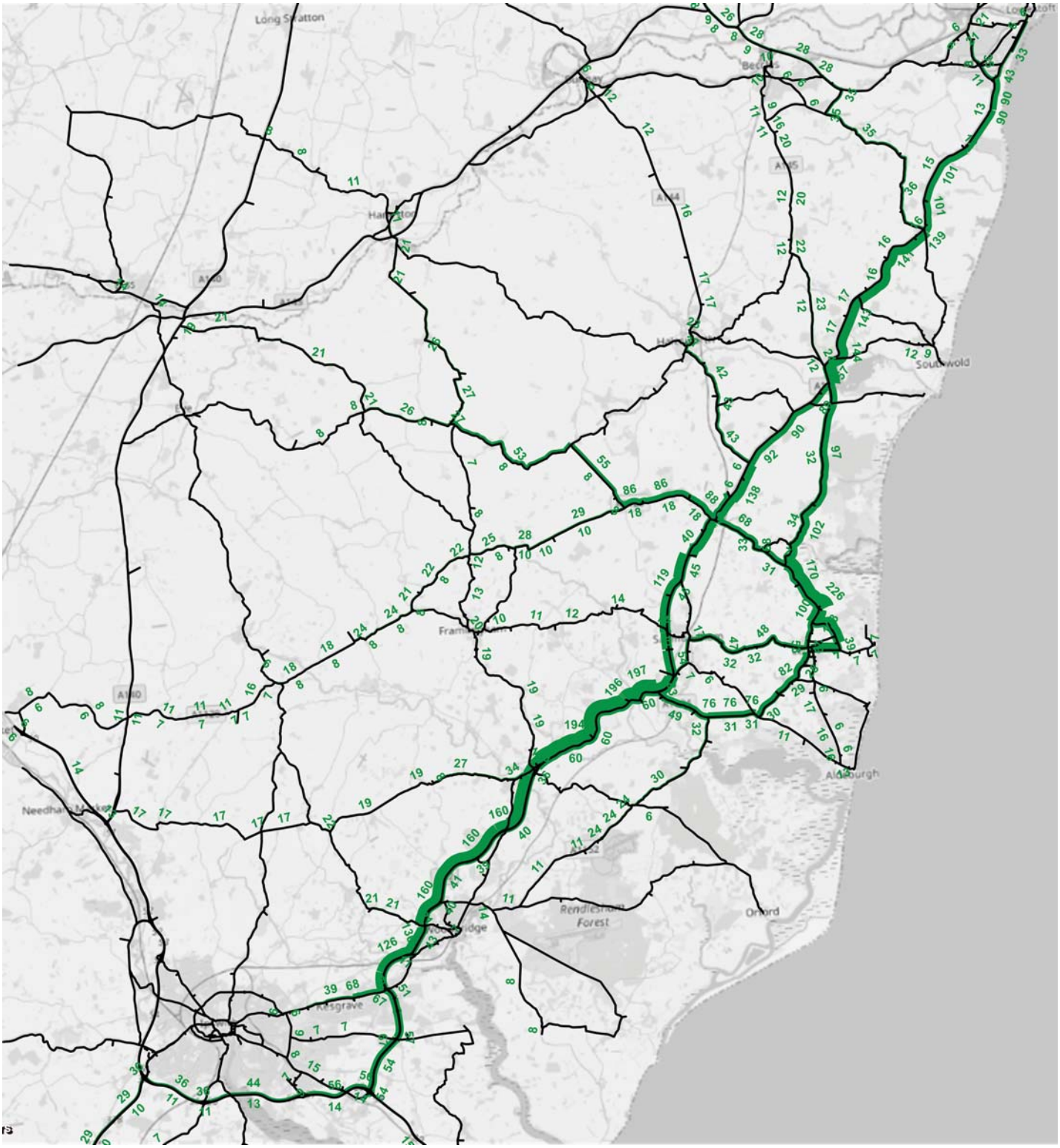
- speed reduction on A12 approaches to A1094 Friday Street junction (superseded by the implementation of EDF Energy's proposed two village bypass around Farnham and Stratford St Andrew, which includes a new roundabout at this junction)
- speed reduction on A1094 approaches to B1069 Snape Road junction

APPENDIX 8D: SIZEWELL C TRAFFIC FLOW PLOTS

Contents

- Figure 8D.1: Sizewell C Traffic Flows, 2023 Early Years 07:00-08:00
- Figure 8D.2: Sizewell C Traffic Flows, 2023 Early Years 07:00-08:00 Local Area
- Figure 8D.3: Sizewell C Traffic Flows, 2023 Early Years 08:00-09:00
- Figure 8D.4: Sizewell C Traffic Flows, 2023 Early Years 08:00-09:00 Local Area
- Figure 8D.5: Sizewell C Traffic Flows, 2023 Early Years 17:00-18:00
- Figure 8D.6: Sizewell C Traffic Flows, 2023 Early Years 17:00-18:00 Local Area
- Figure 8D.7: Sizewell C Traffic Flows, 2028 Integrated Typical Day 06:00-07:00
- Figure 8D.8: Sizewell C Traffic Flows, 2028 Integrated Typical Day 06:00-07:00 Local Area
- Figure 8D.9: Sizewell C Traffic Flows, 2028 Integrated Typical Day 08:00-09:00
- Figure 8D.10: Sizewell C Traffic Flows, 2028 Integrated Typical Day 08:00-09:00 Local Area
- Figure 8D.11: Sizewell C Traffic Flows, 2028 Integrated Typical Day 17:00-18:00
- Figure 8D.12: Sizewell C Traffic Flows, 2028 Integrated Typical Day 17:00-18:00 Local Area
- Figure 8D.13: Sizewell C Traffic Flows, 2028 Integrated Typical Day 18:00-19:00
- Figure 8D.14: Sizewell C Traffic Flows, 2028 Integrated Typical Day 18:00-19:00 Local Area
- Figure 8D.15: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 06:00-07:00
- Figure 8D.16: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 06:00-07:00 Local Area
- Figure 8D.17: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 08:00-09:00
- Figure 8D.18: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 08:00-09:00 Local Area
- Figure 8D.19: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 17:00-18:00
- Figure 8D.20: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 17:00-18:00 Local Area

- Figure 8D.21: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 18:00-19:00
- Figure 8D.22: Sizewell C Traffic Flows, 2028 Integrated Busiest Day 18:00-19:00 Local Area
- Figure 8D.23: Sizewell C Traffic Flows, 2034 Operational 08:00-09:00
- Figure 8D.24: Sizewell C Traffic Flows, 2034 Operational 08:00-09:00 Local Area
- Figure 8D.25: Sizewell C Traffic Flows, 2034 Operational 16:00-17:00
- Figure 8D.26: Sizewell C Traffic Flows, 2034 Operational 16:00-17:00 Local Area



KEY

MODELLED NETWORK

TRAFFIC FLOWS

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS
07:00-08:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.1

DATE: JAN 2020 | DRAWN: J.W. | SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

MODELLED NETWORK

TRAFFIC FLOWS

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

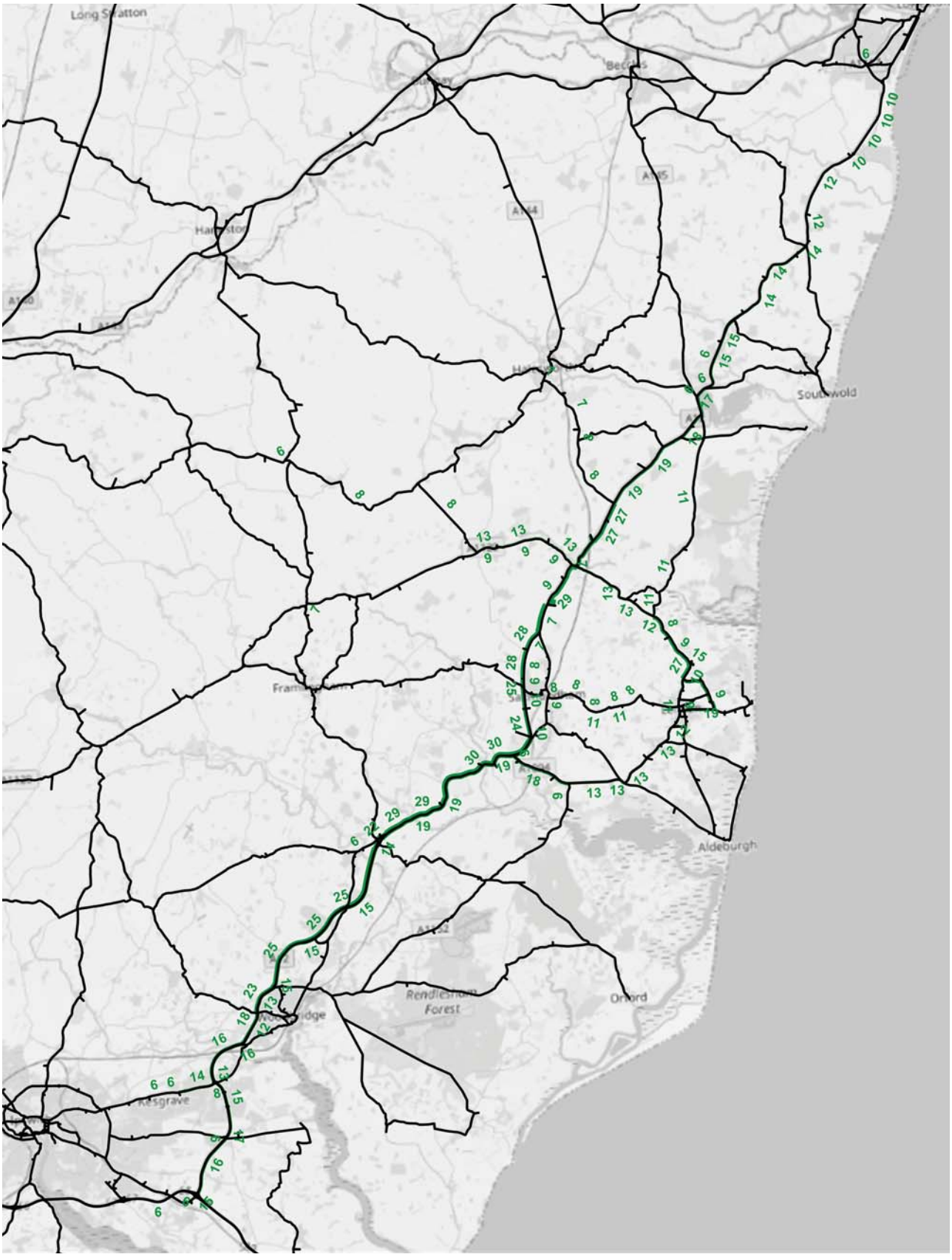
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS 07:00-08:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.2

DATE: JAN 2020 | DRAWN: J.W. | SCALE : X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK

TRAFFIC FLOWS

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS
08:00-09:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.3

DATE: JAN 2020 | DRAWN: J.W. | SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

MODELLED NETWORK

TRAFFIC FLOWS

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS 08:00-09:00, LOCAL AREA

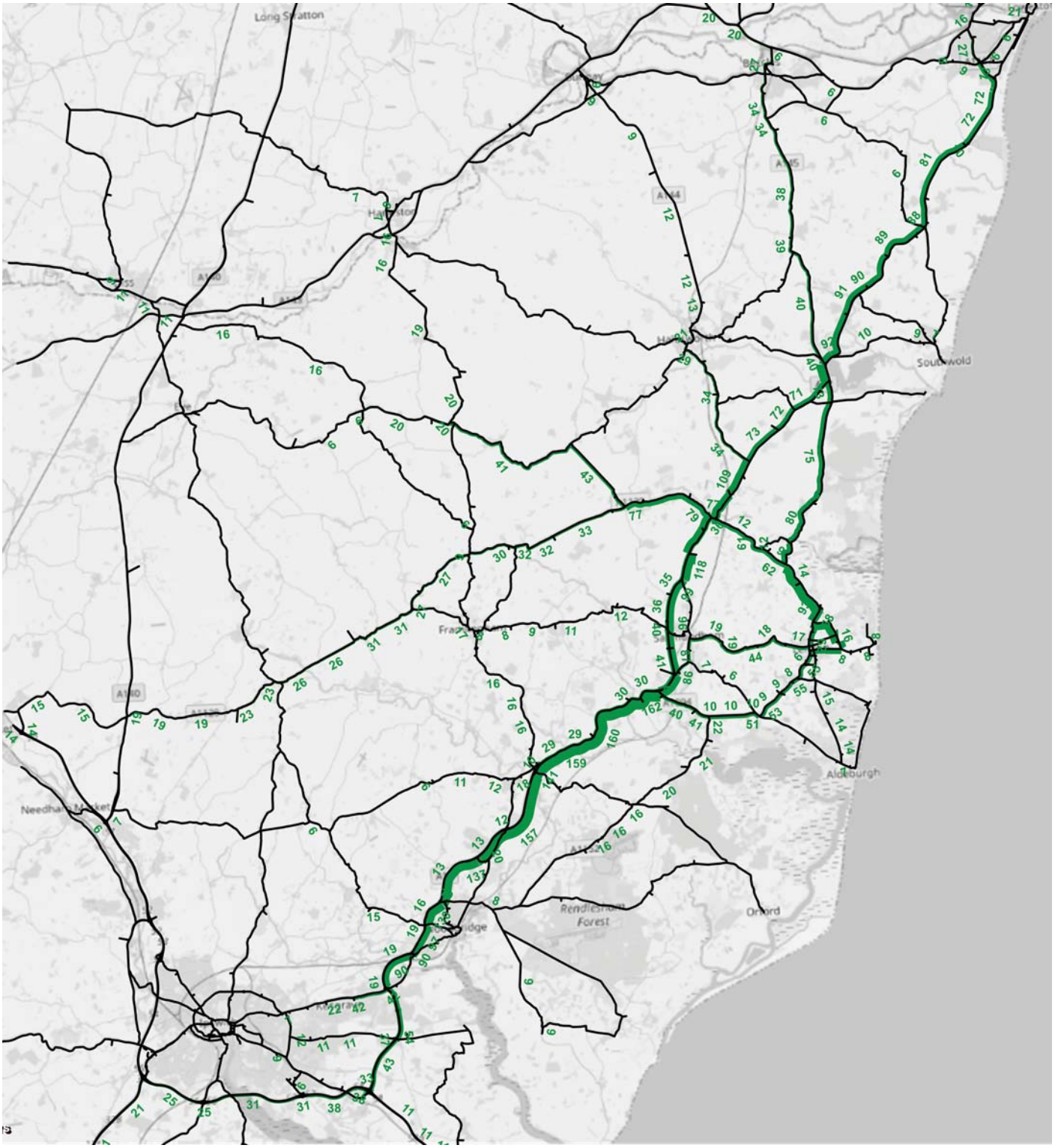
DRAWING NO:
FIGURE 8D.4

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR

X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK

TRAFFIC FLOWS

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS
17:00-18:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.5

DATE: JAN 2020 | DRAWN: J.W. | SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

MODELLED NETWORK

TRAFFIC FLOWS

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2023 EARLY YEARS 17:00-18:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.6

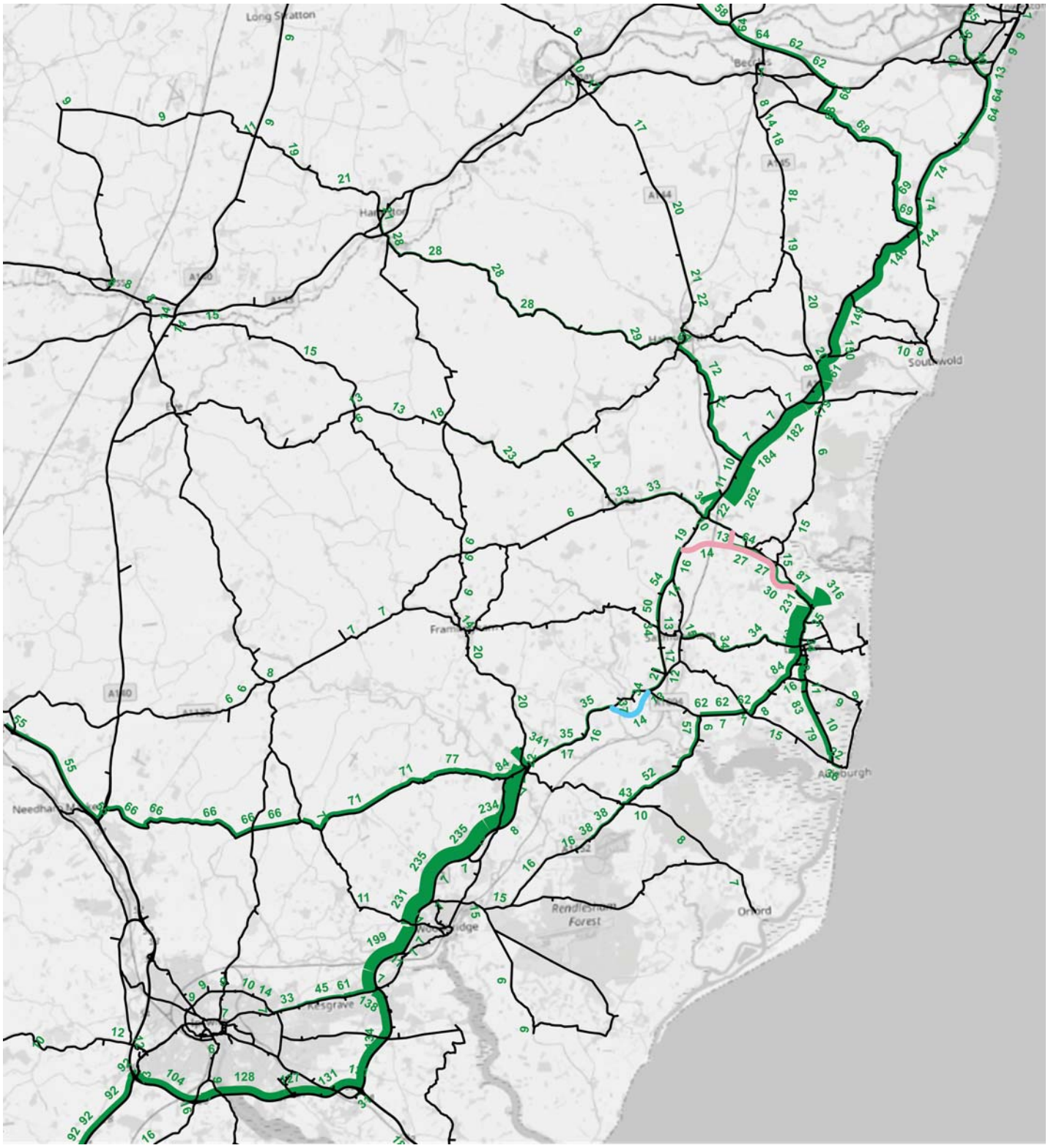
DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR

X X X X X X

M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 06:00-07:00

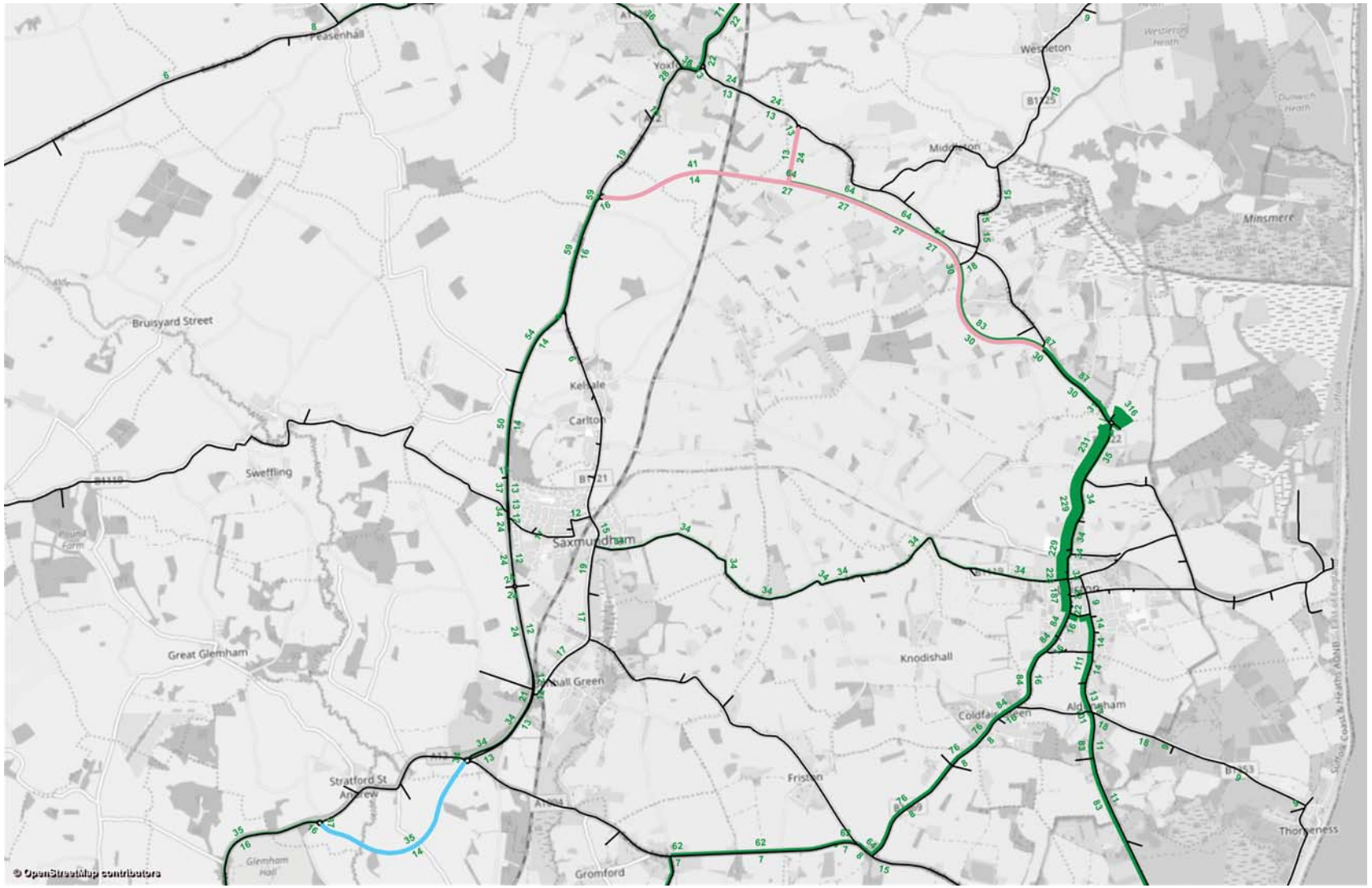
NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.7

DATE: JAN 2020
DRAWN: J.W.
SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

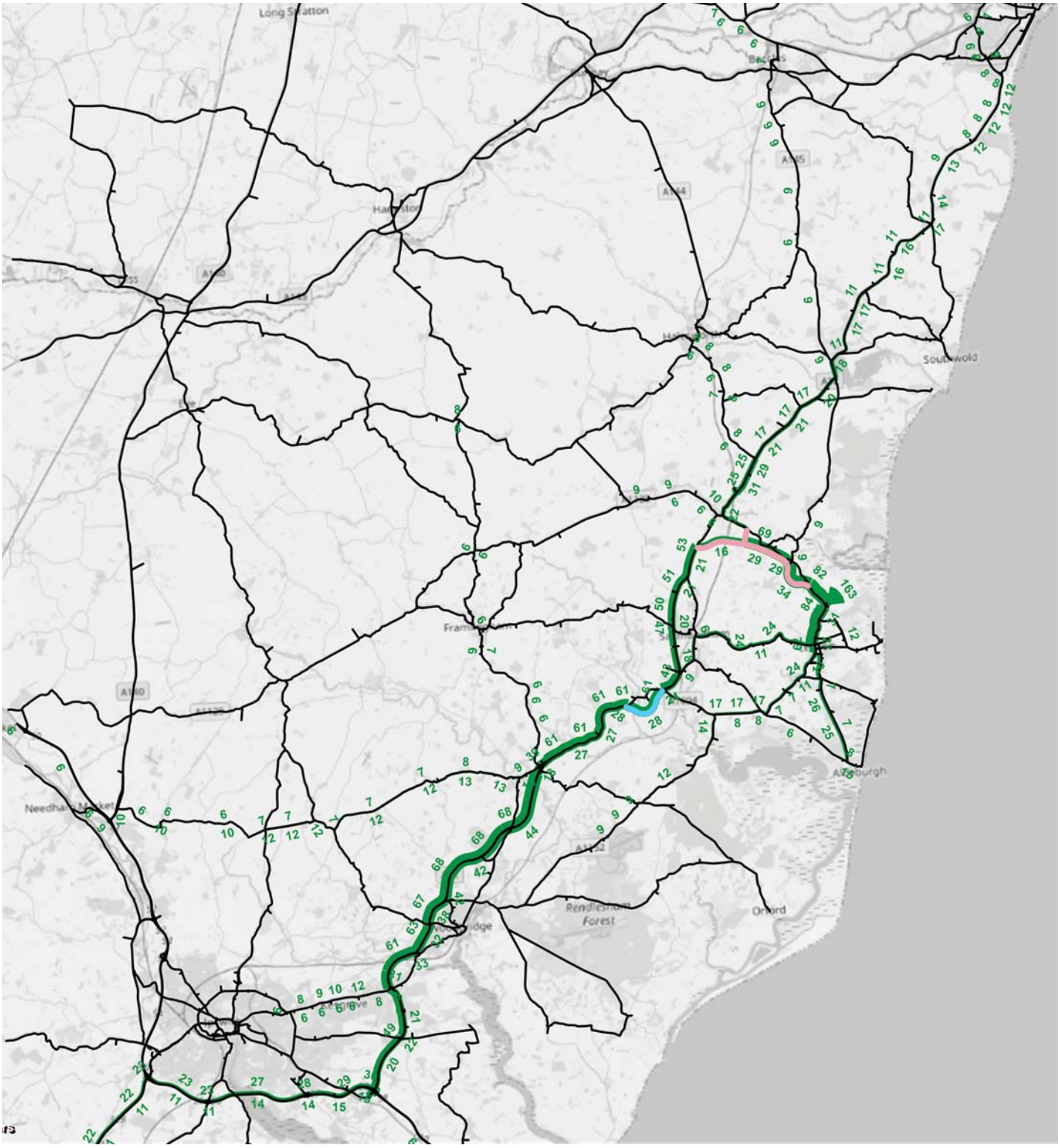
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED
TYPICAL DAY 06:00-07:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.8

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR
X X X X X X
M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 08:00-09:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.9

DATE: JAN 2020
DRAWN: J.W.
SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

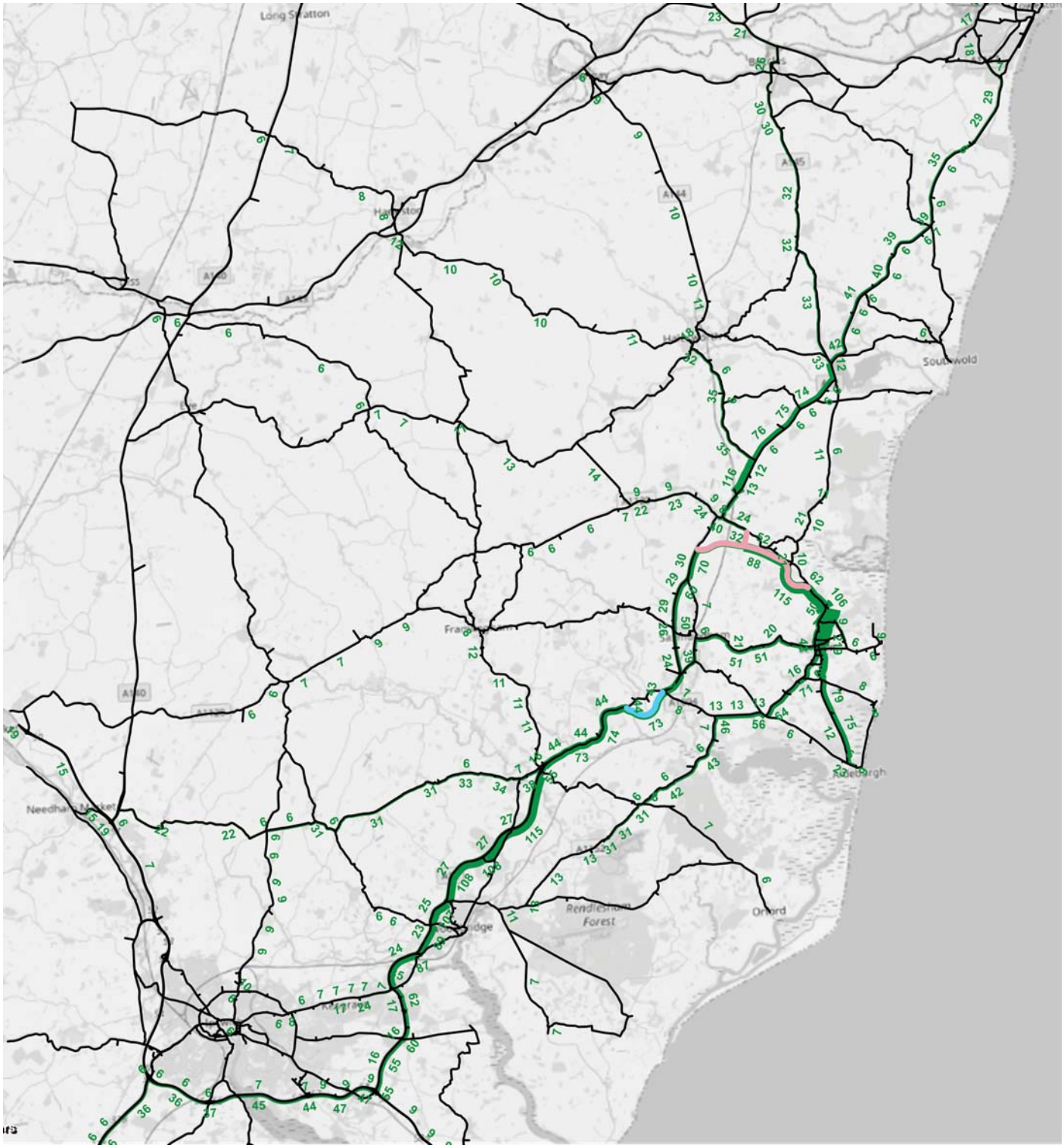
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED
TYPICAL DAY 08:00-09:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.10

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR
X X X X X X
M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 17:00-18:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.11

DATE: JAN 2020
DRAWN: J.W.
SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

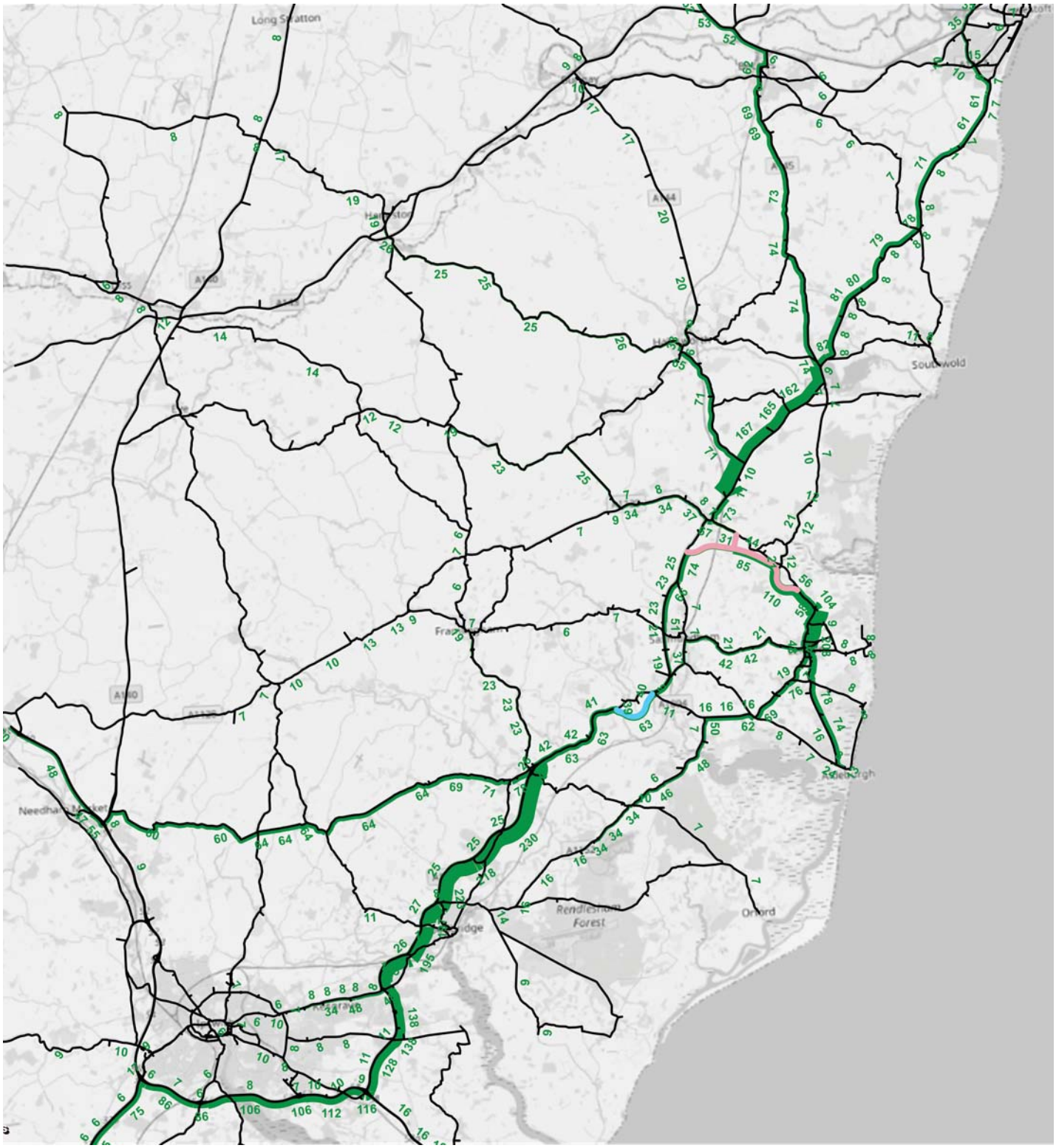
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 17:00-18:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.12

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 18:00-19:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.13

DATE: JAN 2020
DRAWN: J.W.
SCALE : X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

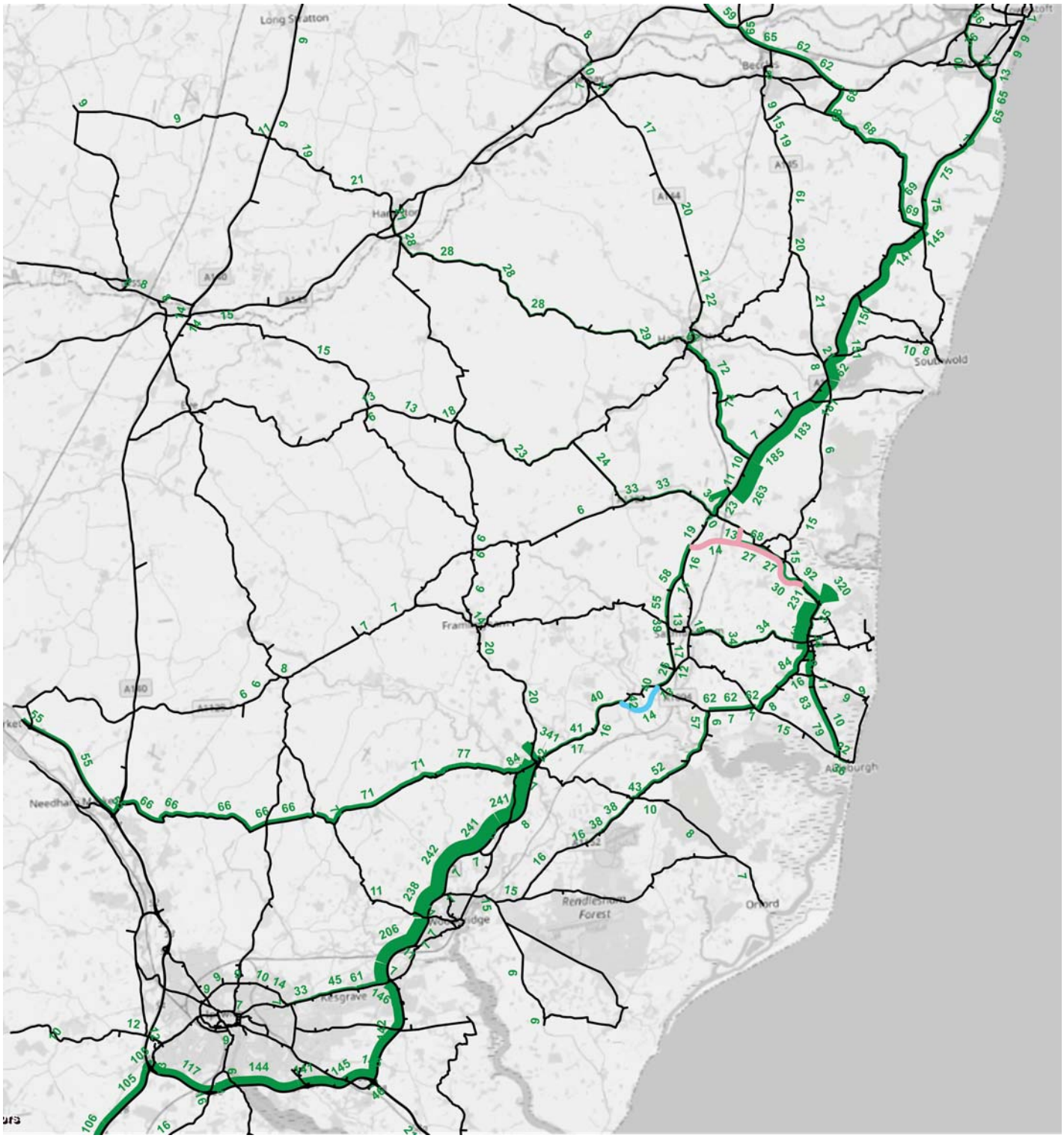
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED TYPICAL DAY 18:00-19:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.14

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 06:00-07:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.15

DATE: JAN 2020
DRAWN: J.W.
SCALE: X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

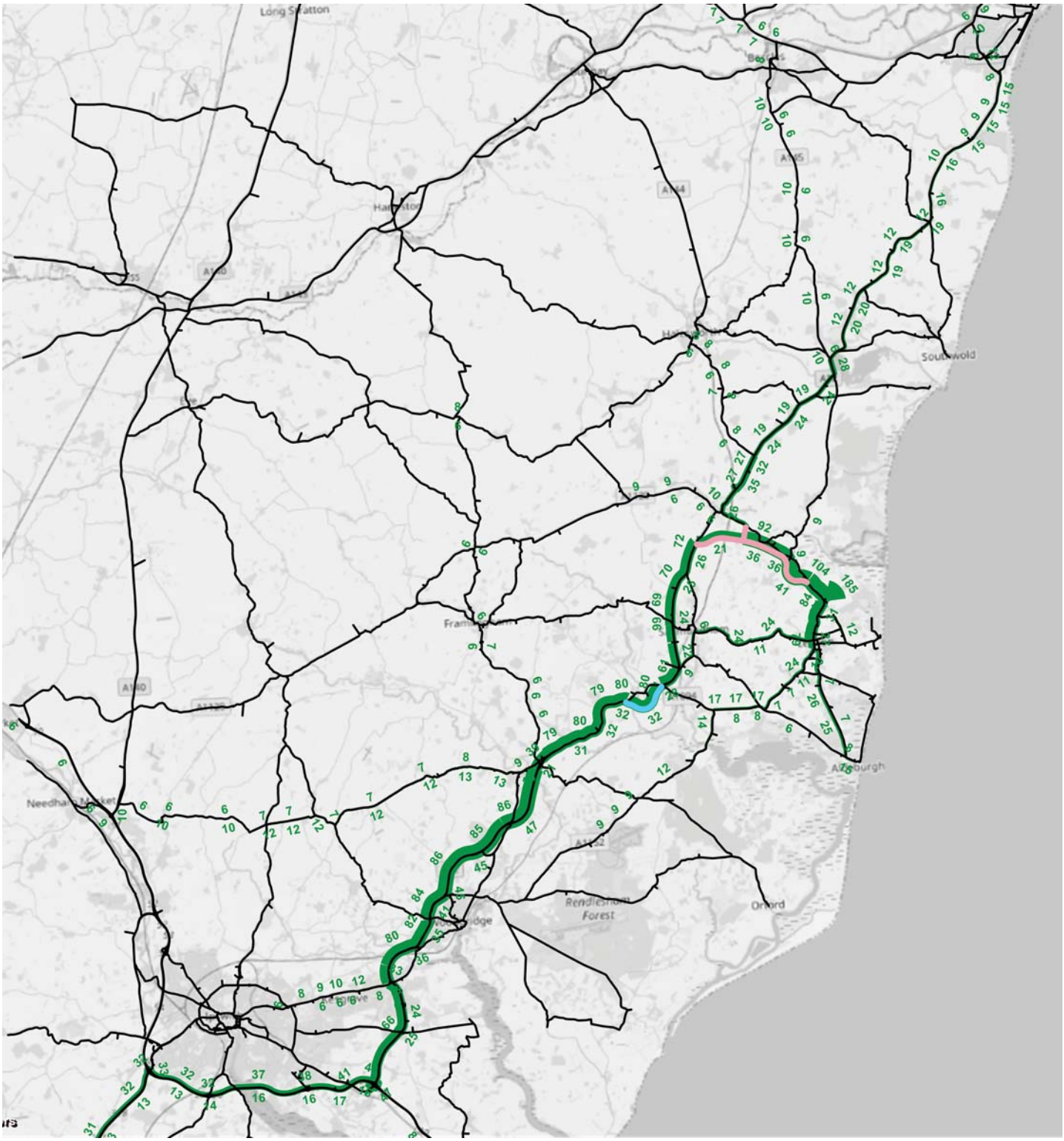
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED
BUSIEST DAY 06:00-07:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.16

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 08:00-09:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.17

DATE: JAN 2020
DRAWN: J.C.
SCALE: X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

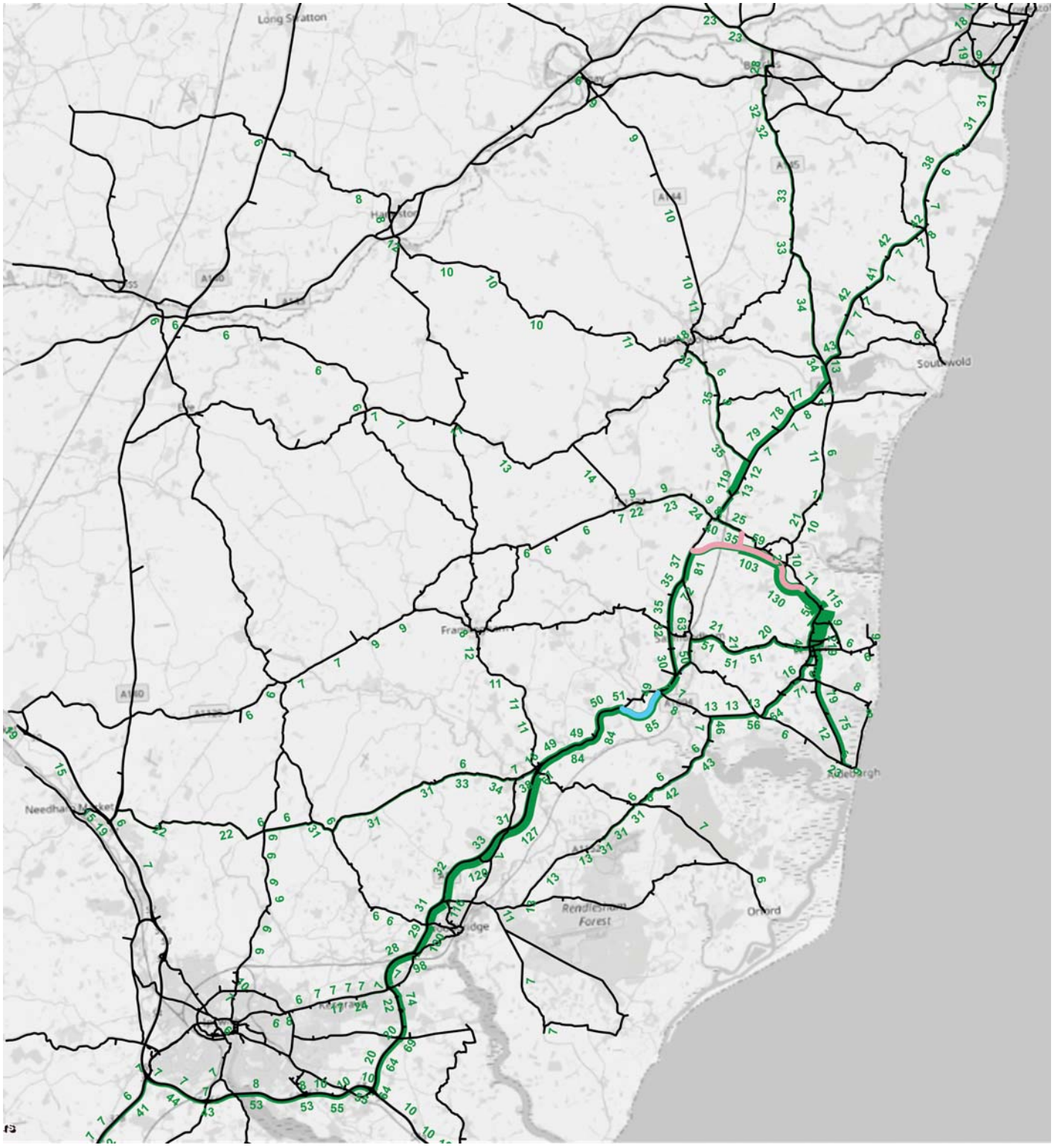
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED
BUSIEST DAY 08:00-09:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.18

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 17:00-18:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.19

DATE: JAN 2020
DRAWN: J.C.
SCALE: X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

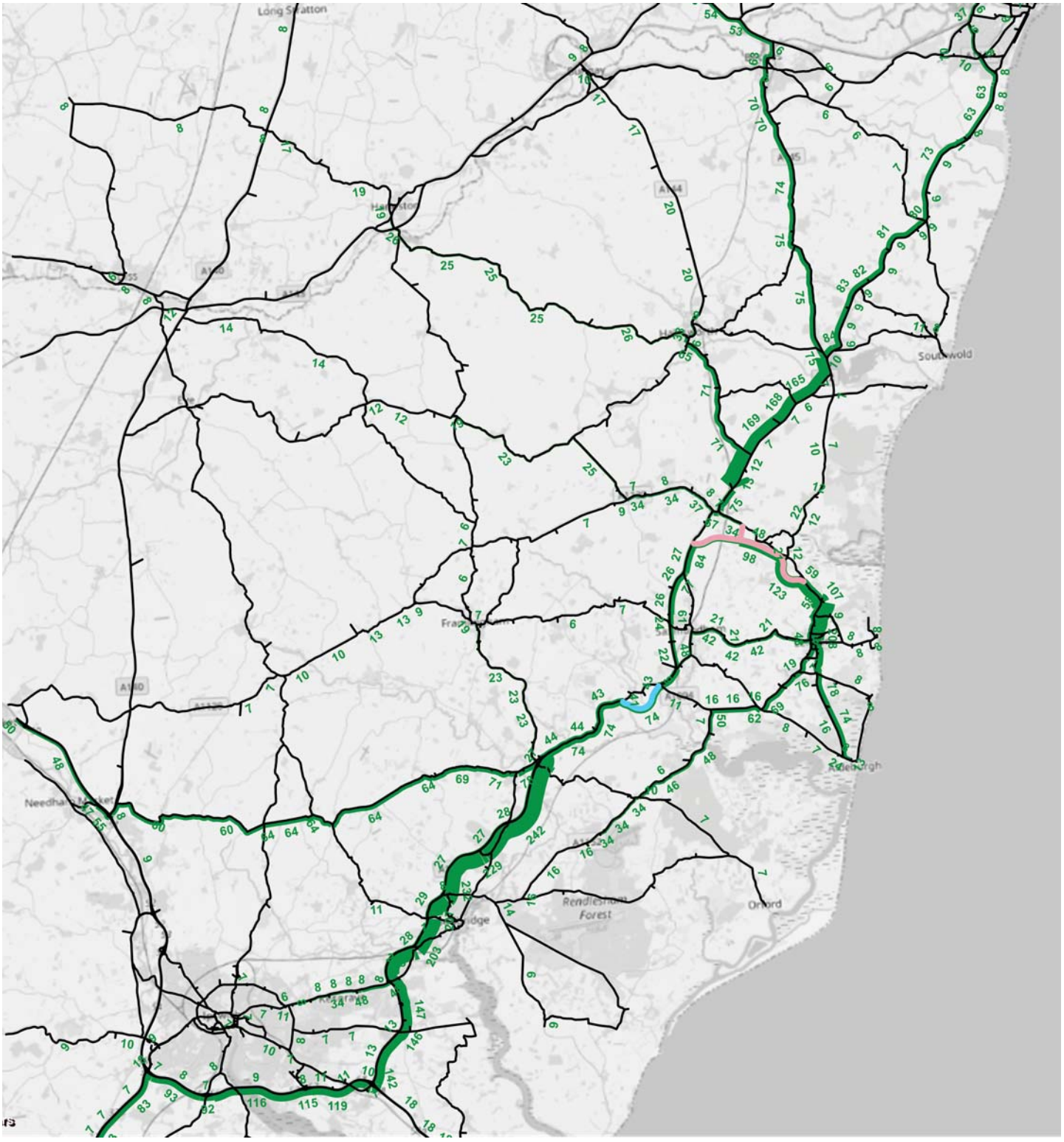
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 17:00-18:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.20

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 18:00-19:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.21

DATE: JAN 2020
DRAWN: J.C.
SCALE: X@A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

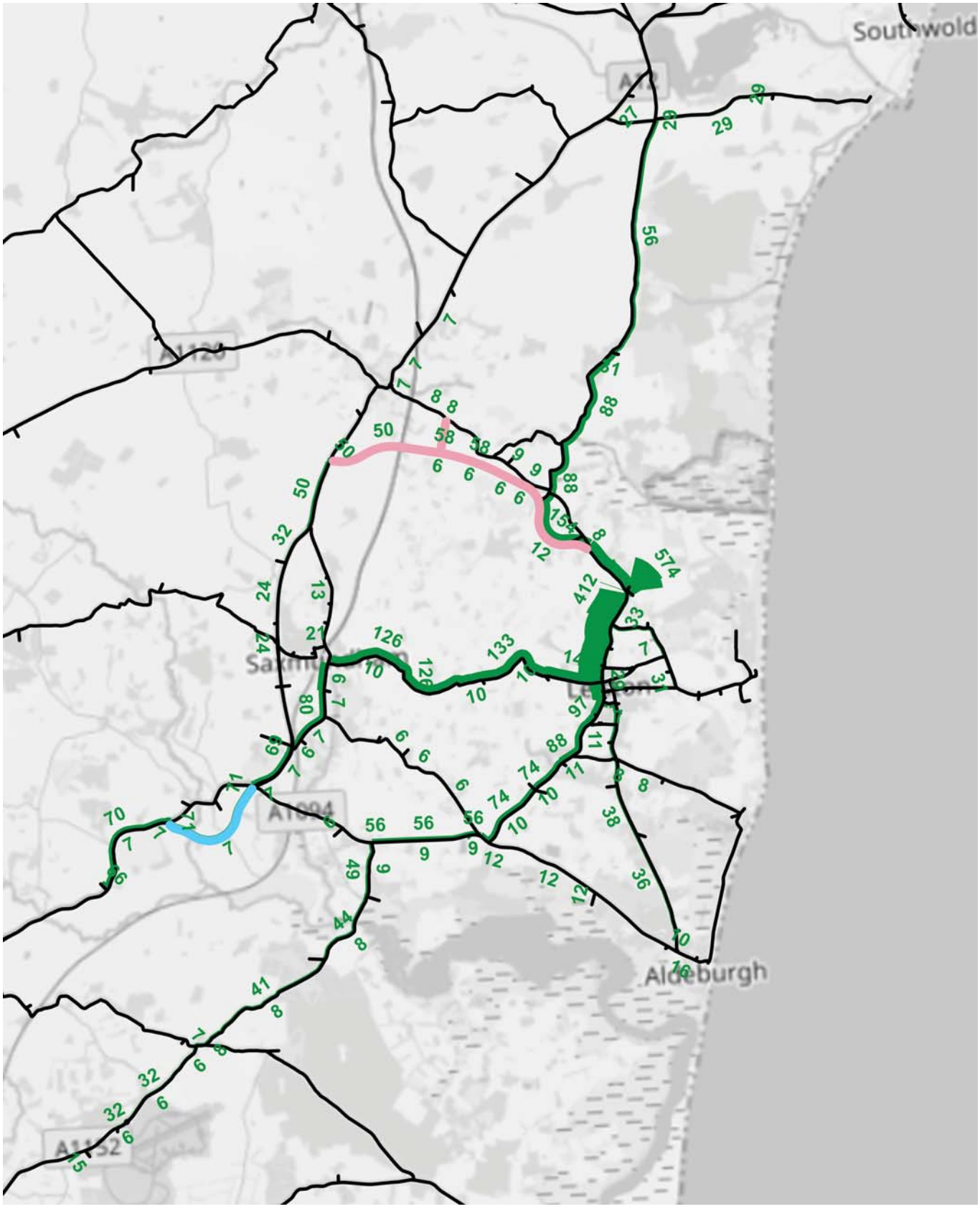
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2028 INTEGRATED BUSIEST DAY 18:00-19:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.22

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X
M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2034 OPERATIONAL
08:00-09:00

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.23

DATE: JAN 2020
DRAWN: J.W.
SCALE : X @A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

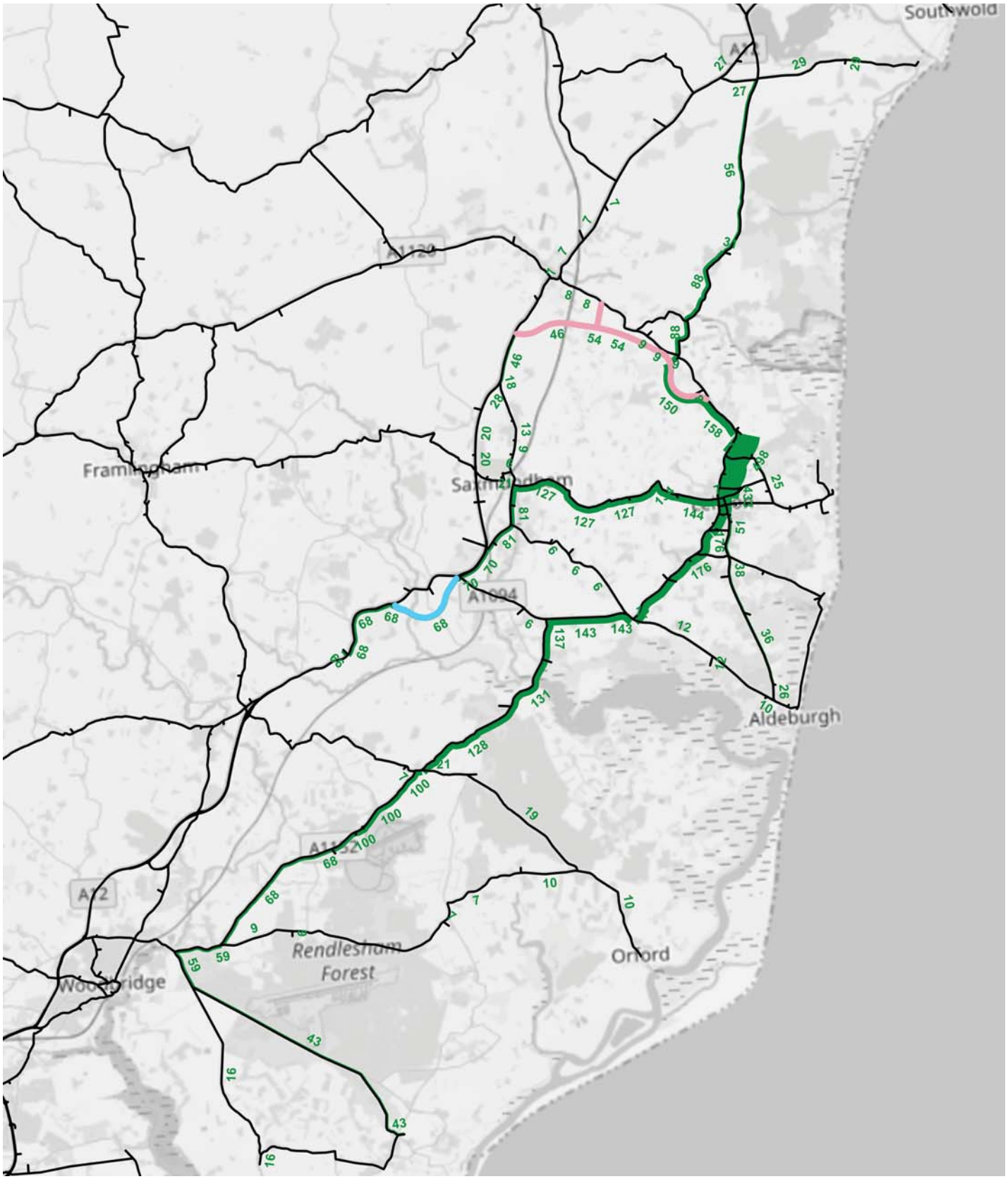
DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS,
2034 OPERATIONAL 08:00-09:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.24

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.



KEY

MODELLED NETWORK
TRAFFIC FLOWS
TWO VILLAGE BYPASS
SIZEWELL LINK ROAD

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS, 2034 OPERATIONAL 16:00-17:00

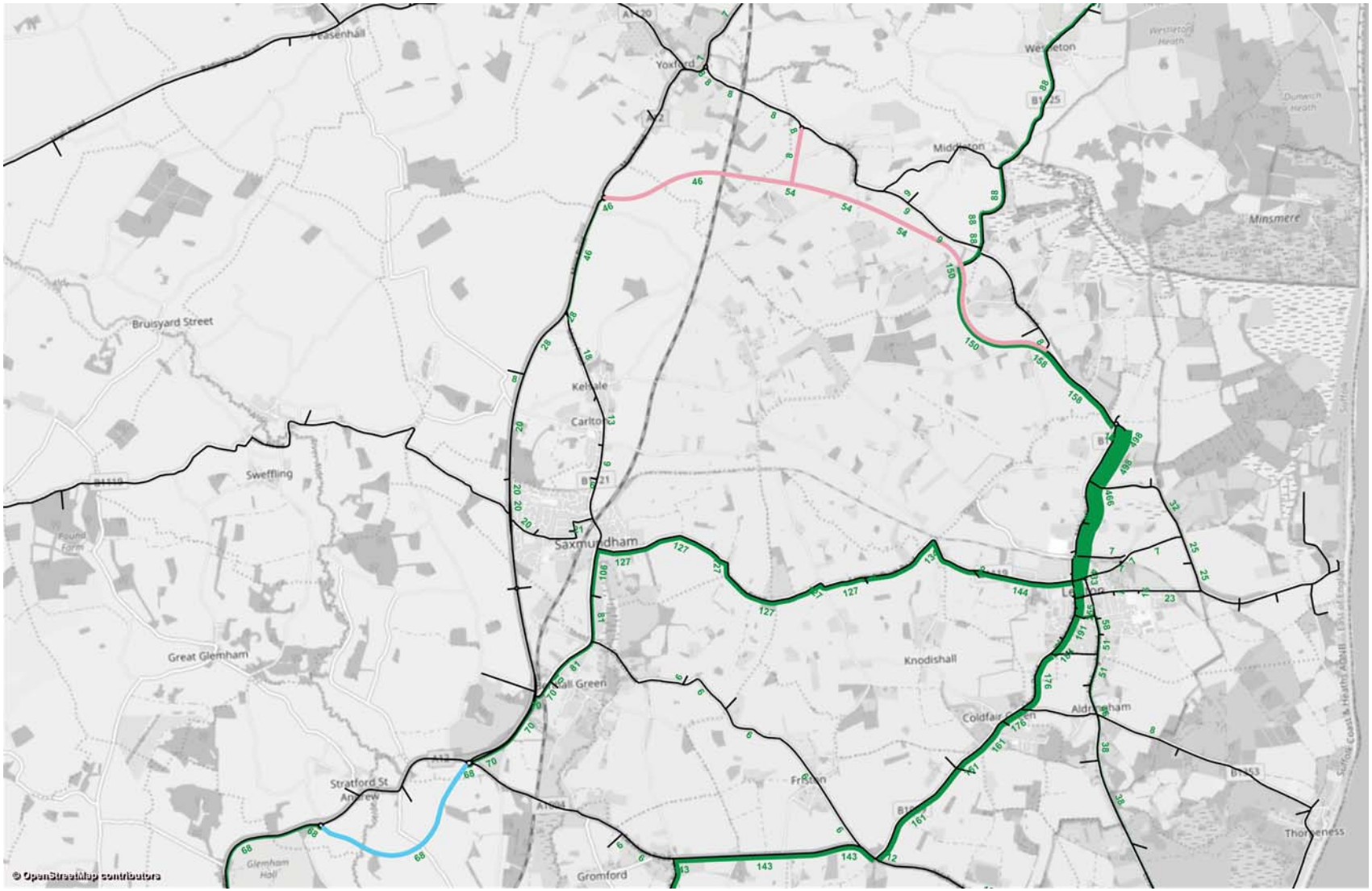
NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 8D.25

DATE: JAN 2020
DRAWN: X.X.
SCALE : X @A4

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

SCALE BAR
X X X X X X M



NOTES

KEY

- MODELLED NETWORK
- TRAFFIC FLOWS
- TWO VILLAGE BYPASS
- SIZEWELL LINK ROAD

NOT PROTECTIVELY MARKED

COPYRIGHT
Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.

DOCUMENT:
SIZEWELL C
TRANSPORT ASSESSMENT
CHAPTER 8
STRATEGIC MODELLING

DRAWING TITLE:
SIZEWELL C TRAFFIC FLOWS,
2034 OPERATIONAL 16:00-17:00, LOCAL AREA

DRAWING NO:
FIGURE 8D.26

DATE:	DRAWN:	SCALE :
JAN 2020	J.C.	X@A4

SCALE BAR
X X X X X X M

© Copyright 2020 NNB Generation Company (SZC) Limited. No part of this drawing is to be reproduced without prior permission of NNB Generation Company (SZC) Limited.

APPENDIX 8E: VISUM TRAFFIC MODEL JOURNEY TIMES

Contents

- Table 8E.1: Sizewell C Modelled Journey Times, 2023 Early Years 06:00-07:00
- Table 8E.2: Sizewell C Modelled Journey Times, 2023 Early Years 07:00-08:00
- Table 8E.3: Sizewell C Modelled Journey Times, 2023 Early Years 08:00-09:00
- Table 8E.4: Sizewell C Modelled Journey Times, 2023 Early Years 15:00-16:00
- Table 8E.5: Sizewell C Modelled Journey Times, 2023 Early Years 16:00-17:00
- Table 8E.6: Sizewell C Modelled Journey Times, 2023 Early Years 17:00-18:00
- Table 8E.7: Sizewell C Modelled Journey Times, 2023 Early Years 18:00-19:00
- Table 8E.8: Sizewell C Modelled Journey Times, 2028 Peak Construction 06:00-07:00
- Table 8E.9: Sizewell C Modelled Journey Times, 2028 Peak Construction 07:00-08:00
- Table 8E.10: Sizewell C Modelled Journey Times, 2028 Peak Construction 08:00-09:00
- Table 8E.11: Sizewell C Modelled Journey Times, 2028 Peak Construction 15:00-16:00
- Table 8E.12 Sizewell C Modelled Journey Times, 2028 Peak Construction 16:00-17:00
- Table 8E.13: Sizewell C Modelled Journey Times, 2028 Peak Construction 17:00-18:00
- Table 8E.14: Sizewell C Modelled Journey Times, 2028 Peak Construction 18:00-19:00
- Table 8E.15: Sizewell C Modelled Journey Times, 2034 Operational Traffic 06:00-07:00
- Table 8E.16: Sizewell C Modelled Journey Times, 2034 Operational Traffic 07:00-08:00
- Table 8E.17 Sizewell C Modelled Journey Times, 2034 Operational Traffic 08:00-09:00
- Table 8E.18 Sizewell C Modelled Journey Times, 2034 Operational Traffic 15:00-16:00

- Table 8E.19 Sizewell C Modelled Journey Times, 2034 Operational Traffic 16:00-17:00
- Table 8E.20: Sizewell C Modelled Journey Times, 2034 Operational Traffic 17:00-18:00
- Table 8E.21: Sizewell C Modelled Journey Times, 2034 Operational Traffic 18:00-19:00

Table 8E.1 – 2023 Early Years – Journey Times 06:00-07:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	18:46	18:55	2	0%	2	0%
	WB	19:14	19:31	0	0%	0	0%
2	NB	27:40	27:57	10	1%	10	1%
	SB	27:48	28:17	3	0%	3	0%
3	NB	25:31	25:31	0	0%	0	0%
	SB	25:36	25:40	3	0%	3	0%
4	EB	41:45	41:48	-5	0%	-5	0%
	WB	41:29	41:29	-12	0%	-12	0%
5	EB	40:20	40:20	-2	0%	-2	0%
	WB	39:47	39:48	4	0%	4	0%
6	NB	23:57	23:58	0	0%	0	0%
	SB	22:00	22:03	0	0%	0	0%
7	NB	26:49	26:50	1	0%	1	0%
	SB	27:26	27:28	1	0%	1	0%
8	NB	30:10	30:20	0	0%	0	0%
	SB	29:50	30:03	2	0%	2	0%
9	EB	26:45	26:45	1	0%	1	0%
	WB	26:49	26:50	0	0%	0	0%
10	NB	32:32	32:34	0	0%	0	0%
	SB	32:40	32:45	1	0%	1	0%
11	NB	03:09	03:09	0	0%	0	0%
	SB	03:13	03:13	0	0%	0	0%
12	NB	49:36	00:49:43	8	0%	8	0%
	SB	48:31	48:54	6	0%	6	0%
13	NB	29:13	29:28	7	0%	7	0%
	SB	29:05	29:21	-2	0%	-2	0%
14	NB	12:06	12:07	-8	-1%	-8	-1%
	SB	11:55	11:58	-5	-1%	-5	-1%

Table 8E.2 – 2023 Early Years – Journey Times 07:00-08:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	20:17	21:18	11	1%	18	1%
	WB	20:50	21:51	8	1%	9	1%
2	NB	29:30	30:43	99	5%	106	6%
	SB	30:25	32:53	34	2%	51	3%
3	NB	25:45	25:54	4	0%	4	0%
	SB	26:06	26:04	26	2%	25	2%
4	EB	42:00	42:05	7	0%	6	0%
	WB	41:51	42:02	-10	0%	-10	0%
5	EB	40:31	40:37	1	0%	1	0%
	WB	40:10	40:19	8	0%	8	0%
6	NB	24:14	24:21	1	0%	1	0%
	SB	22:18	22:20	3	0%	2	0%
7	NB	27:06	27:06	1	0%	2	0%
	SB	27:43	27:42	10	1%	10	1%
8	NB	31:06	31:33	48	3%	49	3%
	SB	31:31	33:08	22	1%	32	2%
9	EB	26:53	26:57	3	0%	3	0%
	WB	27:06	27:42	0	0%	5	0%
10	NB	33:32	33:47	2	0%	1	0%
	SB	33:59	34:23	5	0%	5	0%
11	NB	03:17	03:20	3	2%	4	2%
	SB	03:22	03:24	1	0%	1	0%
12	NB	57:13	57:53	88	3%	108	3%
	SB	50:42	52:27	58	2%	70	2%
13	NB	30:05	30:39	89	5%	91	5%
	SB	30:44	32:34	28	1%	41	2%
14	NB	12:09	12:10	-6	-1%	-6	-1%
	SB	12:01	12:01	3	0%	2	0%

Table 8E.3 – 2023 Early Years – Journey Times 08:00-09:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	21:21	22:53	3	0%	2	0%
	WB	21:07	22:04	2	0%	5	0%
2	NB	30:34	32:38	26	1%	69	4%
	SB	32:37	37:26	39	2%	62	3%
3	NB	25:55	25:55	2	0%	2	0%
	SB	26:08	26:14	4	0%	14	1%
4	EB	42:08	42:14	-5	0%	-2	0%
	WB	42:05	42:23	-8	0%	-7	0%
5	EB	40:42	40:51	-3	0%	-2	0%
	WB	40:25	40:45	9	0%	9	0%
6	NB	24:26	24:32	1	0%	1	0%
	SB	22:20	22:27	0	0%	1	0%
7	NB	27:30	27:20	0	0%	0	0%
	SB	27:44	27:48	3	0%	8	0%
8	NB	31:33	32:34	-2	0%	30	2%
	SB	33:31	37:39	30	1%	44	2%
9	EB	26:57	27:16	0	0%	2	0%
	WB	27:20	31:46	16	1%	20	1%
10	NB	33:55	34:12	2	0%	2	0%
	SB	34:36	35:24	2	0%	3	0%
11	NB	03:21	03:27	15	7%	35	17%
	SB	03:25	05:29	17	5%	23	7%
12	NB	01:00:58	01:01:39	18	0%	49	1%
	SB	52:43	55:09	25	1%	48	1%
13	NB	30:22	31:27	9	0%	33	2%
	SB	32:45	35:07	16	1%	32	2%
14	NB	12:11	12:11	-8	-1%	-7	-1%
	SB	12:01	12:01	-5	-1%	-2	0%

Table 8E.4 – 2023 Early Years – Journey Times 15:00-16:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	20:29	21:49	1	0%	2	0%
	WB	20:29	21:57	4	0%	3	0%
2	NB	31:15	34:41	32	2%	59	3%
	SB	30:10	34:44	51	2%	66	3%
3	NB	26:14	26:16	0	0%	1	0%
	SB	25:59	26:03	1	0%	2	0%
4	EB	42:02	42:07	-4	0%	-4	0%
	WB	41:42	41:59	-9	0%	-8	0%
5	EB	40:39	40:46	0	0%	0	0%
	WB	40:03	40:21	5	0%	5	0%
6	NB	24:32	24:48	0	0%	1	0%
	SB	22:17	22:21	0	0%	0	0%
7	NB	27:15	27:17	1	0%	2	0%
	SB	27:55	27:53	1	0%	1	0%
8	NB	32:45	35:41	16	1%	37	2%
	SB	31:10	34:23	35	2%	48	2%
9	EB	26:53	27:06	2	0%	2	0%
	WB	26:55	27:19	6	0%	7	0%
10	NB	33:11	33:21	2	0%	3	0%
	SB	33:25	33:54	3	0%	3	0%
11	NB	03:23	05:01	7	2%	10	3%
	SB	03:24	04:19	30	12%	36	14%
12	NB	54:13	56:30	24	1%	49	1%
	SB	50:21	53:12	21	1%	32	1%
13	NB	31:39	32:57	20	1%	43	2%
	SB	30:29	33:12	16	1%	28	1%
14	NB	12:08	12:11	-7	-1%	-6	-1%
	SB	12:00	12:00	-7	-1%	-7	-1%

Table 8E.5– 2023 Early Years – Journey Times 16:00-17:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	21:23	22:27	1	0%	-4	0%
	WB	21:43	23:23	1	0%	-8	-1%
2	NB	32:22	34:42	48	2%	76	4%
	SB	31:55	35:42	51	2%	59	3%
3	NB	26:29	26:31	1	0%	6	0%
	SB	25:56	25:59	-2	0%	0	0%
4	EB	42:13	42:21	-5	0%	-5	0%
	WB	41:50	42:07	-8	0%	-6	0%
5	EB	40:53	41:03	-9	0%	-9	0%
	WB	40:09	40:27	12	0%	13	1%
6	NB	24:39	24:54	0	0%	0	0%
	SB	22:13	22:16	0	0%	0	0%
7	NB	27:11	27:14	5	0%	5	0%
	SB	27:50	27:50	0	0%	1	0%
8	NB	33:17	35:12	41	2%	63	3%
	SB	32:08	34:21	37	2%	44	2%
9	EB	27:03	27:18	2	0%	5	0%
	WB	27:16	28:37	12	1%	13	1%
10	NB	33:28	33:38	3	0%	-2	0%
	SB	34:18	34:56	6	0%	6	0%
11	NB	03:23	03:56	20	8%	29	12%
	SB	03:25	04:04	20	8%	16	7%
12	NB	54:28	56:10	88	3%	54	2%
	SB	51:22	53:24	27	1%	45	1%
13	NB	32:25	33:52	25	1%	47	2%
	SB	31:29	33:29	27	1%	44	2%
14	NB	12:14	12:16	-6	-1%	-5	-1%
	SB	11:57	11:57	-5	-1%	-5	-1%

Table 8E.6– 2023 Early Years – Journey Times 17:00-18:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	21:15	22:06	2	0%	3	0%
	WB	21:20	22:49	3	0%	1	0%
2	NB	31:38	34:49	32	2%	50	2%
	SB	30:26	33:42	103	5%	156	8%
3	NB	26:22	26:24	24	2%	26	2%
	SB	25:51	25:56	2	0%	2	0%
4	EB	42:07	42:13	-6	0%	-6	0%
	WB	41:46	41:53	1	0%	5	0%
5	EB	40:48	40:54	-7	0%	-7	0%
	WB	40:08	40:18	17	1%	17	1%
6	NB	24:31	24:41	3	0%	4	0%
	SB	22:14	22:16	0	0%	0	0%
7	NB	27:07	27:08	11	1%	15	1%
	SB	27:49	27:47	1	0%	1	0%
8	NB	32:45	35:32	25	1%	40	2%
	SB	31:19	33:15	66	3%	111	6%
9	EB	27:03	27:15	2	0%	4	0%
	WB	27:13	28:02	19	1%	32	2%
10	NB	33:17	33:22	1	0%	3	0%
	SB	33:45	34:09	1	0%	4	0%
11	NB	03:28	05:52	7	2%	3	1%
	SB	03:26	03:29	29	14%	42	20%
12	NB	53:34	54:17	51	2%	160	5%
	SB	50:06	52:24	73	2%	113	4%
13	NB	31:32	32:02	24	1%	48	2%
	SB	30:18	32:29	74	4%	118	6%
14	NB	12:12	12:12	-1	0%	3	0%
	SB	11:56	11:57	-6	-1%	-6	-1%

Table 8E.7– 2023 Early Years – Journey Times 18:00-19:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)			
		2015 Base Year	2023 Reference Case	Seconds	%	Seconds	%
				2023 Early Years		2023 Early Years (Cumulative)	
1	EB	19:36	20:01	0	0%	2	0%
	WB	19:41	20:07	7	1%	9	1%
2	NB	29:14	30:02	9	0%	25	1%
	SB	28:30	29:27	47	3%	54	3%
3	NB	25:50	25:54	7	0%	7	0%
	SB	25:41	25:41	3	0%	4	0%
4	EB	41:52	41:58	-7	0%	-6	0%
	WB	41:34	41:38	-4	0%	-3	0%
5	EB	40:28	40:38	-8	0%	-8	0%
	WB	39:54	40:02	12	0%	12	0%
6	NB	24:06	24:12	1	0%	1	0%
	SB	22:06	22:07	1	0%	1	0%
7	NB	26:57	26:57	4	0%	4	0%
	SB	27:36	27:38	-1	0%	-1	0%
8	NB	31:11	31:38	1	0%	11	1%
	SB	30:22	30:54	12	1%	15	1%
9	EB	26:52	26:55	1	0%	1	0%
	WB	26:55	27:03	0	0%	0	0%
10	NB	32:47	32:53	0	0%	0	0%
	SB	33:03	33:13	1	0%	1	0%
11	NB	03:18	03:21	0	0%	1	0%
	SB	03:17	03:20	4	2%	5	3%
12	NB	50:50	51:22	16	1%	28	1%
	SB	49:03	49:39	36	1%	41	1%
13	NB	30:11	30:48	4	0%	18	1%
	SB	29:26	30:05	35	2%	40	2%
14	NB	12:09	12:11	-1	0%	0	0%
	SB	11:53	11:57	-7	-1%	-6	-1%

Table 8E.8 – 2028 Peak Construction – Journey Times 06:00-07:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	18:46	18:57	4	0%	5	0%	4	0%	5	0%
	WB	19:14	19:36	0	0%	0	0%	0	0%	0	0%
2	NB	27:40	28:06	5	0%	7	0%	5	0%	7	0%
	SB	27:48	28:52	-14	-1%	-13	-1%	-14	-1%	-13	-1%
3	NB	25:31	25:31	5	0%	5	0%	5	0%	5	0%
	SB	25:36	25:40	18	1%	19	1%	18	1%	19	1%
4	EB	41:45	41:48	-64	-3%	-63	-3%	-64	-3%	-63	-3%
	WB	41:29	41:31	-75	-3%	-75	-3%	-75	-3%	-75	-3%
5	EB	40:20	40:20	-6	0%	-5	0%	-6	0%	-5	0%
	WB	39:47	39:50	5	0%	5	0%	5	0%	5	0%
6	NB	23:57	23:58	1	0%	1	0%	1	0%	1	0%
	SB	22:00	22:03	3	0%	3	0%	3	0%	3	0%
7	NB	26:49	26:50	4	0%	4	0%	4	0%	4	0%
	SB	27:26	27:28	-3	0%	-1	0%	-3	0%	-1	0%
8	NB	30:10	30:29	8	0%	9	0%	8	0%	9	0%
	SB	29:50	30:17	1	0%	1	0%	1	0%	1	0%
9	EB	26:45	26:45	7	0%	7	0%	7	0%	7	0%
	WB	26:49	26:50	1	0%	1	0%	1	0%	1	0%
10	NB	32:32	32:35	0	0%	0	0%	0	0%	0	0%
	SB	32:40	32:48	0	0%	0	0%	0	0%	0	0%
11	NB	03:09	03:16	0	0%	0	0%	0	0%	0	0%
	SB	03:13	03:25	0	0%	0	0%	0	0%	0	0%
12	NB	49:36	49:39	6	0%	6	0%	6	0%	6	0%
	SB	48:31	48:53	3	0%	4	0%	3	0%	4	0%
13	NB	29:13	29:28	-176	-10%	-174	-10%	-176	-10%	-174	-10%
	SB	29:05	29:22	-196	-11%	-196	-11%	-196	-11%	-196	-11%
14	NB	12:06	12:07	-72	-10%	-72	-10%	-72	-10%	-72	-10%
	SB	11:55	11:58	-64	-9%	-63	-9%	-64	-9%	-63	-9%

Table 8E.9 – 2028 Peak Construction – Journey Times 07:00-08:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	20:17	21:37	11	1%	17	1%	14	1%	20	2%
	WB	20:50	22:12	2	0%	2	0%	3	0%	2	0%
2	NB	29:30	31:24	55	3%	74	4%	68	4%	90	5%
	SB	30:25	33:41	-8	0%	-3	0%	8	0%	9	0%
3	NB	25:45	25:58	6	0%	8	1%	7	0%	9	1%
	SB	26:06	26:06	26	2%	28	2%	28	2%	28	2%
4	EB	42:00	42:09	-61	-2%	-57	-2%	-60	-2%	-57	-2%
	WB	41:51	42:00	-70	-3%	-70	-3%	-70	-3%	-70	-3%
5	EB	40:31	40:38	-4	0%	-4	0%	-4	0%	-4	0%
	WB	40:10	40:19	6	0%	6	0%	6	0%	6	0%
6	NB	24:14	24:23	2	0%	2	0%	2	0%	2	0%
	SB	22:18	22:23	4	0%	4	0%	4	0%	4	0%
7	NB	27:06	27:07	5	0%	5	0%	6	0%	6	0%
	SB	27:43	27:45	-2	0%	-2	0%	-2	0%	-2	0%
8	NB	31:06	32:01	50	3%	58	3%	57	3%	69	4%
	SB	31:31	33:29	2	0%	5	0%	9	0%	9	0%
9	EB	26:53	26:55	8	0%	8	0%	8	0%	8	0%
	WB	27:06	27:20	2	0%	2	0%	2	0%	3	0%
10	NB	33:32	33:56	0	0%	0	0%	0	0%	0	0%
	SB	33:59	34:31	3	0%	2	0%	4	0%	3	0%
11	NB	03:17	03:33	5	2%	8	4%	8	4%	9	4%
	SB	03:22	03:55	2	1%	2	1%	4	2%	4	2%
12	NB	57:13	54:06	28	1%	13	0%	10	0%	18	1%
	SB	50:42	52:13	13	0%	18	1%	25	1%	26	1%
13	NB	30:05	30:53	-139	-8%	-125	-7%	-132	-7%	-112	-6%
	SB	30:44	32:18	-198	-10%	-195	-10%	-188	-10%	-187	-10%
14	NB	12:09	12:11	-69	-9%	-69	-9%	-69	-9%	-69	-9%
	SB	12:01	12:02	-61	-8%	-57	-8%	-60	-8%	-57	-8%

Table 8E.10 – 2028 Peak Construction – Journey Times 08:00-09:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	21:21	23:15	-6	0%	-5	0%	-7	-1%	-8	-1%
	WB	21:07	22:35	3	0%	4	0%	6	0%	8	1%
2	NB	30:34	34:01	13	1%	46	2%	65	3%	93	5%
	SB	32:37	38:29	10	0%	14	1%	30	1%	38	2%
3	NB	25:55	25:59	9	1%	10	1%	7	0%	9	1%
	SB	26:08	26:14	12	1%	16	1%	22	1%	23	1%
4	EB	42:08	42:15	-63	-2%	-59	-2%	-58	-2%	-55	-2%
	WB	42:05	42:22	-78	-3%	-77	-3%	-76	-3%	-75	-3%
5	EB	40:42	40:52	-5	0%	-5	0%	-5	0%	-2	0%
	WB	40:25	40:45	6	0%	7	0%	8	0%	8	0%
6	NB	24:26	24:38	1	0%	1	0%	1	0%	1	0%
	SB	22:20	22:28	0	0%	0	0%	0	0%	0	0%
7	NB	27:30	27:25	5	0%	5	0%	5	0%	5	0%
	SB	27:44	27:50	-1	0%	-1	0%	4	0%	4	0%
8	NB	31:33	33:48	15	1%	41	2%	61	3%	81	4%
	SB	33:31	38:01	16	1%	19	1%	30	1%	36	2%
9	EB	26:57	27:09	5	0%	7	0%	13	1%	16	1%
	WB	27:20	29:38	-1	0%	-7	0%	-1	0%	-2	0%
10	NB	33:55	34:29	0	0%	2	0%	2	0%	3	0%
	SB	34:36	35:26	1	0%	1	0%	1	0%	1	0%
11	NB	03:21	04:39	-15	-5%	3	1%	8	3%	17	6%
	SB	03:25	06:29	13	3%	15	4%	24	6%	28	7%
12	NB	01:00:58	54:23	42	1%	57	2%	72	2%	93	3%
	SB	52:43	54:25	3	0%	10	0%	23	1%	26	1%
13	NB	30:22	31:19	-144	-8%	-125	-7%	-109	-6%	-86	-5%
	SB	32:45	34:22	-195	-9%	-192	-9%	-186	-9%	-183	-9%
14	NB	12:11	12:11	-77	-11%	-77	-11%	-77	-11%	-76	-10%
	SB	12:01	12:01	-64	-9%	-60	-8%	-58	-8%	-56	-8%

Table 8E.11 – 2028 Peak Construction – Journey Times 15:00-16:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	20:29	22:09	-1	0%	1	0%	1	0%	3	0%
	WB	20:29	22:05	3	0%	3	0%	2	0%	2	0%
2	NB	31:15	35:08	27	1%	46	2%	51	2%	64	3%
	SB	30:10	36:00	62	3%	73	3%	83	4%	92	4%
3	NB	26:14	26:20	21	1%	20	1%	21	1%	21	1%
	SB	25:59	26:07	11	1%	13	1%	14	1%	14	1%
4	EB	42:02	42:09	-61	-2%	-61	-2%	-62	-2%	-62	-2%
	WB	41:42	41:57	-72	-3%	-71	-3%	-72	-3%	-69	-3%
5	EB	40:39	40:48	-2	0%	-2	0%	-3	0%	-3	0%
	WB	40:03	40:17	10	0%	10	0%	10	0%	10	0%
6	NB	24:32	25:05	3	0%	3	0%	4	0%	4	0%
	SB	22:17	22:21	1	0%	1	0%	1	0%	1	0%
7	NB	27:15	27:17	8	0%	8	0%	8	0%	9	1%
	SB	27:55	27:56	-4	0%	-3	0%	-1	0%	-1	0%
8	NB	32:45	35:50	32	1%	46	2%	48	2%	55	3%
	SB	31:10	35:29	66	3%	73	3%	79	4%	87	4%
9	EB	26:53	27:03	3	0%	4	0%	3	0%	4	0%
	WB	26:55	27:04	6	0%	6	0%	8	0%	9	1%
10	NB	33:11	33:32	3	0%	3	0%	3	0%	3	0%
	SB	33:25	34:03	2	0%	3	0%	4	0%	3	0%
11	NB	03:23	03:56	5	2%	9	4%	10	4%	12	5%
	SB	03:24	05:58	50	14%	57	16%	62	17%	66	18%
12	NB	54:13	56:14	45	1%	56	2%	61	2%	70	2%
	SB	50:21	52:30	21	1%	27	1%	32	1%	37	1%
13	NB	31:39	34:09	-155	-8%	-143	-7%	-140	-7%	-130	-6%
	SB	30:29	32:32	-172	-9%	-167	-9%	-164	-8%	-156	-8%
14	NB	12:08	12:11	-74	-10%	-73	-10%	-74	-10%	-71	-10%
	SB	12:00	12:00	-65	-9%	-65	-9%	-65	-9%	-65	-9%

Table 8E.12 – 2028 Peak Construction – Journey Times 16:00-17:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	21:23	22:50	2	0%	6	0%	6	0%	6	0%
	WB	21:43	23:19	2	0%	2	0%	2	0%	2	0%
2	NB	32:22	35:35	18	1%	42	2%	41	2%	60	3%
	SB	31:55	37:58	65	3%	83	4%	86	4%	107	5%
3	NB	26:29	26:37	12	1%	12	1%	11	1%	11	1%
	SB	25:56	26:03	11	1%	11	1%	11	1%	13	1%
4	EB	42:13	42:23	-70	-3%	-69	-3%	-70	-3%	-71	-3%
	WB	41:50	42:10	-71	-3%	-67	-3%	-71	-3%	-67	-3%
5	EB	40:53	41:03	-8	0%	-6	0%	-8	0%	-8	0%
	WB	40:09	40:30	15	1%	16	1%	15	1%	16	1%
6	NB	24:39	25:02	2	0%	2	0%	2	0%	2	0%
	SB	22:13	22:16	2	0%	2	0%	2	0%	2	0%
7	NB	27:11	27:17	6	0%	5	0%	5	0%	5	0%
	SB	27:50	27:47	-4	0%	-4	0%	-4	0%	-4	0%
8	NB	33:17	35:52	24	1%	41	2%	40	2%	56	3%
	SB	32:08	36:26	65	3%	82	4%	83	4%	102	5%
9	EB	27:03	27:29	6	0%	6	0%	6	0%	7	0%
	WB	27:16	28:18	35	2%	34	2%	37	2%	44	3%
10	NB	33:28	33:43	1	0%	2	0%	0	0%	1	0%
	SB	34:18	35:11	3	0%	4	0%	4	0%	4	0%
11	NB	03:23	03:48	20	9%	35	15%	36	16%	52	23%
	SB	03:25	06:31	36	9%	44	11%	45	12%	59	15%
12	NB	54:28	56:57	10	0%	17	0%	15	0%	17	0%
	SB	51:22	53:04	36	1%	47	1%	49	2%	58	2%
13	NB	32:25	34:42	-184	-9%	-176	-8%	-179	-9%	-176	-8%
	SB	31:29	33:09	-156	-8%	-143	-7%	-143	-7%	-134	-7%
14	NB	12:14	12:17	-70	-10%	-67	-9%	-70	-10%	-67	-9%
	SB	11:57	11:58	-70	-10%	-71	-10%	-70	-10%	-71	-10%

Table 8E.13 – 2028 Peak Construction – Journey Times 17:00-18:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	21:15	22:43	-1	0%	0	0%	3	0%	1	0%
	WB	21:20	23:04	5	0%	6	0%	7	1%	8	1%
2	NB	31:38	35:19	17	1%	27	1%	43	2%	50	2%
	SB	30:26	36:01	49	2%	66	3%	96	4%	114	5%
3	NB	26:22	26:28	13	1%	14	1%	24	2%	25	2%
	SB	25:51	25:57	11	1%	12	1%	12	1%	13	1%
4	EB	42:07	42:18	-68	-3%	-68	-3%	-68	-3%	-68	-3%
	WB	41:46	41:58	-72	-3%	-71	-3%	-68	-3%	-65	-3%
5	EB	40:48	41:00	-8	0%	-8	0%	-8	0%	-8	0%
	WB	40:08	40:22	14	1%	14	1%	15	1%	15	1%
6	NB	24:31	24:50	4	0%	4	0%	6	0%	6	0%
	SB	22:14	22:16	1	0%	1	0%	1	0%	1	0%
7	NB	27:07	27:10	10	1%	10	1%	15	1%	15	1%
	SB	27:49	27:46	-3	0%	-2	0%	-2	0%	-2	0%
8	NB	32:45	35:35	24	1%	33	2%	47	2%	54	3%
	SB	31:19	35:09	56	3%	70	3%	84	4%	96	5%
9	EB	27:03	27:21	7	0%	10	1%	11	1%	11	1%
	WB	27:13	27:53	24	1%	31	2%	35	2%	35	2%
10	NB	33:17	33:25	0	0%	0	0%	0	0%	2	0%
	SB	33:45	34:19	7	0%	7	0%	9	0%	9	0%
11	NB	03:28	04:08	30	12%	32	13%	48	19%	49	20%
	SB	03:26	05:32	37	11%	48	14%	51	15%	58	17%
12	NB	53:34	55:59	3	0%	11	0%	17	1%	26	1%
	SB	50:06	52:11	20	1%	27	1%	53	2%	63	2%
13	NB	31:32	33:51	-191	-9%	-183	-9%	-187	-9%	-179	-9%
	SB	30:18	32:19	-171	-9%	-164	-8%	-137	-7%	-125	-6%
14	NB	12:12	12:13	-70	-10%	-69	-9%	-67	-9%	-64	-9%
	SB	11:56	11:57	-68	-9%	-68	-9%	-68	-9%	-68	-9%

Table 8E.14 – 2028 Peak Construction – Journey Times 18:00-19:00 hours

Route	Direc-tion	Average Journey Time (mm:ss)		Difference from Reference Case (s)							
		2015 Base Year	2028 Reference Case	Seconds	%	Seconds	%	Seconds	%	Seconds	%
				Core				Cumulative			
				2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)		2028 Peak Construction (Typical Day)		2028 Peak Construction (Busiest Day)	
1	EB	19:36	20:18	2	0%	2	0%	3	0%	3	0%
	WB	19:41	20:20	6	0%	8	1%	8	1%	8	1%
2	NB	29:14	30:52	0	0%	2	0%	8	0%	11	1%
	SB	28:30	30:24	40	2%	48	3%	54	3%	61	3%
3	NB	25:50	25:56	15	1%	15	1%	15	1%	15	1%
	SB	25:41	25:44	12	1%	13	1%	14	1%	14	1%
4	EB	41:52	41:58	-69	-3%	-69	-3%	-69	-3%	-69	-3%
	WB	41:34	41:40	-73	-3%	-73	-3%	-73	-3%	-72	-3%
5	EB	40:28	40:38	-8	0%	-8	0%	-8	0%	-8	0%
	WB	39:54	40:03	10	0%	10	0%	10	0%	10	0%
6	NB	24:06	24:15	3	0%	3	0%	3	0%	3	0%
	SB	22:06	22:08	2	0%	2	0%	2	0%	2	0%
7	NB	26:57	26:57	14	1%	14	1%	14	1%	14	1%
	SB	27:36	27:36	-3	0%	-3	0%	-3	0%	-3	0%
8	NB	31:11	32:09	9	0%	11	1%	13	1%	13	1%
	SB	30:22	31:20	45	2%	48	3%	51	3%	54	3%
9	EB	26:52	26:55	1	0%	1	0%	2	0%	2	0%
	WB	26:55	27:00	9	1%	9	1%	8	0%	9	1%
10	NB	32:47	32:53	2	0%	2	0%	2	0%	2	0%
	SB	33:03	33:19	0	0%	0	0%	0	0%	0	0%
11	NB	03:18	03:35	0	0%	2	1%	2	1%	2	1%
	SB	03:17	03:45	22	10%	23	10%	26	12%	29	13%
12	NB	50:50	51:42	17	1%	17	1%	21	1%	24	1%
	SB	49:03	49:45	21	1%	27	1%	29	1%	33	1%
13	NB	30:11	31:07	-180	-10%	-179	-10%	-175	-9%	-172	-9%
	SB	29:26	30:10	-172	-10%	-165	-9%	-163	-9%	-159	-9%
14	NB	12:09	12:12	-68	-9%	-68	-9%	-68	-9%	-67	-9%
	SB	11:53	11:57	-68	-9%	-68	-9%	-68	-9%	-68	-9%

Table 8E.15 – 2034 Operational Traffic – Journey Times 06:00-07:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	18:46	19:02	0	0%
	WB	19:14	19:44	0	0%
2	NB	27:40	28:12	-11	-1%
	SB	27:48	28:58	-14	-1%
3	NB	25:31	25:32	4	0%
	SB	25:36	25:40	9	1%
4	EB	41:45	41:49	-70	-3%
	WB	41:29	41:32	-79	-3%
5	EB	40:20	40:20	-6	0%
	WB	39:47	39:51	5	0%
6	NB	23:57	24:00	0	0%
	SB	22:00	22:04	0	0%
7	NB	26:49	26:51	3	0%
	SB	27:26	27:29	-3	0%
8	NB	30:10	30:33	-2	0%
	SB	29:50	30:21	0	0%
9	EB	26:45	26:45	0	0%
	WB	26:49	26:52	0	0%
10	NB	32:32	32:39	0	0%
	SB	32:40	32:51	0	0%
11	NB	03:09	03:16	0	0%
	SB	03:13	03:26	0	0%
12	NB	49:36	49:44	-7	0%
	SB	48:31	48:54	-6	0%
13	NB	29:13	29:33	-192	-11%
	SB	29:05	29:24	-198	-11%
14	NB	12:06	12:07	-78	-11%
	SB	11:55	11:59	-70	-10%

Table 8E.16 – 2034 Operational Traffic – Journey Times 07:00-08:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	20:17	22:13	-2	0%
	WB	20:50	22:46	0	0%
2	NB	29:30	32:32	-14	-1%
	SB	30:25	34:30	-21	-1%
3	NB	25:45	26:02	4	0%
	SB	26:06	26:06	8	1%
4	EB	42:00	42:14	-70	-3%
	WB	41:51	42:03	-77	-3%
5	EB	40:31	40:43	-5	0%
	WB	40:10	40:23	4	0%
6	NB	24:14	24:26	0	0%
	SB	22:18	22:26	0	0%
7	NB	27:06	27:12	3	0%
	SB	27:43	27:47	-6	0%
8	NB	31:06	32:41	6	0%
	SB	31:31	33:47	0	0%
9	EB	26:53	27:04	0	0%
	WB	27:06	27:28	0	0%
10	NB	33:32	34:10	0	0%
	SB	33:59	34:42	0	0%
11	NB	03:17	03:39	-1	0%
	SB	03:22	04:04	0	0%
12	NB	57:13	53:46	24	1%
	SB	50:42	52:32	-13	0%
13	NB	30:05	31:31	-197	-10%
	SB	30:44	32:36	-207	-11%
14	NB	12:09	12:11	-76	-10%
	SB	12:01	12:03	-70	-10%

Table 8E.17 – 2034 Operational Traffic – Journey Times 08:00-09:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	21:21	23:51	-1	0%
	WB	21:07	23:29	5	0%
2	NB	30:34	36:42	-15	-1%
	SB	32:37	41:38	8	0%
3	NB	25:55	26:05	6	0%
	SB	26:08	26:18	8	1%
4	EB	42:08	42:29	-64	-3%
	WB	42:05	42:34	-66	-3%
5	EB	40:42	41:07	-3	0%
	WB	40:25	41:02	9	0%
6	NB	24:26	24:59	0	0%
	SB	22:20	22:32	0	0%
7	NB	27:30	27:29	3	0%
	SB	27:44	27:56	-2	0%
8	NB	31:33	36:16	2	0%
	SB	33:31	40:37	21	1%
9	EB	26:57	28:04	-1	0%
	WB	27:20	32:27	20	1%
10	NB	33:55	34:57	0	0%
	SB	34:36	35:58	2	0%
11	NB	03:21	07:06	0	0%
	SB	03:25	07:35	42	9%
12	NB	01:00:58	56:34	-14	0%
	SB	52:43	56:08	-34	-1%
13	NB	30:22	31:26	-193	-10%
	SB	32:45	36:00	-229	-11%
14	NB	12:11	12:11	-68	-9%
	SB	12:01	12:02	-65	-9%

Table 8E.18 – 2034 Operational Traffic – Journey Times 15:00-16:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	20:29	23:27	-1	0%
	WB	20:29	22:52	1	0%
2	NB	31:15	37:47	-21	-1%
	SB	30:10	39:34	-10	0%
3	NB	26:14	26:28	4	0%
	SB	25:59	26:14	10	1%
4	EB	42:02	42:18	-70	-3%
	WB	41:42	42:07	-80	-3%
5	EB	40:39	40:57	-6	0%
	WB	40:03	40:32	4	0%
6	NB	24:32	25:27	0	0%
	SB	22:17	22:26	0	0%
7	NB	27:15	27:25	3	0%
	SB	27:55	28:01	-4	0%
8	NB	32:45	37:56	-2	0%
	SB	31:10	38:33	12	1%
9	EB	26:53	27:15	0	0%
	WB	26:55	27:30	-3	0%
10	NB	33:11	33:50	0	0%
	SB	33:25	34:44	-1	0%
11	NB	03:23	04:46	1	0%
	SB	03:24	08:38	11	2%
12	NB	54:13	58:56	-17	0%
	SB	50:21	53:20	-11	0%
13	NB	31:39	35:24	-205	-10%
	SB	30:29	33:10	-208	-10%
14	NB	12:08	12:11	-78	-11%
	SB	12:00	12:01	-70	-10%

Table 8E.19 – 2034 Operational Traffic – Journey Times 16:00-17:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	21:23	23:44	-2	0%
	WB	21:43	23:49	0	0%
2	NB	32:22	36:21	-10	0%
	SB	31:55	40:22	-15	-1%
3	NB	26:29	26:38	6	0%
	SB	25:56	26:07	9	1%
4	EB	42:13	42:31	-62	-2%
	WB	41:50	42:22	-75	-3%
5	EB	40:53	41:12	1	0%
	WB	40:09	40:43	20	1%
6	NB	24:39	25:20	0	0%
	SB	22:13	22:17	0	0%
7	NB	27:11	27:19	4	0%
	SB	27:50	27:49	-3	0%
8	NB	33:17	36:16	5	0%
	SB	32:08	38:20	19	1%
9	EB	27:03	27:57	5	0%
	WB	27:16	29:20	7	0%
10	NB	33:28	33:51	1	0%
	SB	34:18	35:41	0	0%
11	NB	03:23	04:02	9	4%
	SB	03:25	07:42	7	2%
12	NB	54:28	57:11	-12	0%
	SB	51:22	54:06	-13	0%
13	NB	32:25	34:54	-202	-10%
	SB	31:29	34:07	-205	-10%
14	NB	12:14	12:18	-70	-9%
	SB	11:57	11:58	-62	-9%

Table 8E.20 – 2034 Operational Traffic – Journey Times 17:00-18:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	21:15	24:15	-1	0%
	WB	21:20	24:41	2	0%
2	NB	31:38	37:31	-15	-1%
	SB	30:26	39:21	-15	-1%
3	NB	26:22	26:33	2	0%
	SB	25:51	26:04	8	1%
4	EB	42:07	42:22	-77	-3%
	WB	41:46	42:11	-79	-3%
5	EB	40:48	41:03	0	0%
	WB	40:08	40:38	13	1%
6	NB	24:31	25:17	-1	0%
	SB	22:14	22:18	0	0%
7	NB	27:07	27:12	3	0%
	SB	27:49	27:50	-4	0%
8	NB	32:45	37:12	-4	0%
	SB	31:19	37:03	5	0%
9	EB	27:03	28:07	1	0%
	WB	27:13	30:02	5	0%
10	NB	33:17	33:33	0	0%
	SB	33:45	35:00	0	0%
11	NB	03:28	05:22	-4	-1%
	SB	03:26	06:45	3	1%
12	NB	53:34	56:28	-9	0%
	SB	50:06	53:14	-12	0%
13	NB	31:32	34:15	-196	-10%
	SB	30:18	33:14	-208	-10%
14	NB	12:12	12:15	-74	-10%
	SB	11:56	11:58	-77	-11%

Table 8E.21 – 2034 Operational Traffic – Journey Times 18:00-19:00 hours

Route	Direction	Average Journey Time (mm:ss)		Difference from Reference Case	
		2015 Base Year	2034 Reference Case	Seconds	%
				2034 Operational Traffic	
1	EB	19:36	20:41	0	0%
	WB	19:41	20:41	0	0%
2	NB	29:14	31:29	-15	-1%
	SB	28:30	31:10	-14	-1%
3	NB	25:50	25:56	3	0%
	SB	25:41	25:48	9	1%
4	EB	41:52	42:00	-77	-3%
	WB	41:34	41:41	-78	-3%
5	EB	40:28	40:40	-1	0%
	WB	39:54	40:03	12	0%
6	NB	24:06	24:16	0	0%
	SB	22:06	22:09	0	0%
7	NB	26:57	26:57	3	0%
	SB	27:36	27:38	-4	0%
8	NB	31:11	32:32	-8	0%
	SB	30:22	31:45	3	0%
9	EB	26:52	26:59	0	0%
	WB	26:55	27:04	0	0%
10	NB	32:47	32:59	0	0%
	SB	33:03	33:24	2	0%
11	NB	03:18	03:39	0	0%
	SB	03:17	04:00	2	1%
12	NB	50:50	52:04	-12	0%
	SB	49:03	50:06	-8	0%
13	NB	30:11	31:26	-199	-11%
	SB	29:26	30:27	-204	-11%
14	NB	12:09	12:12	-72	-10%
	SB	11:53	11:57	-76	-11%

APPENDIX 9A: SCOPED-OUT JUNCTION ASSESSMENT

Contents

- Technical Note describing the Scoped-Out Junction Assessments

APPENDIX 9A: SCOPED-OUT JUNCTION ASSESSMENTS

A.1.1. As described in **section 9.5** of the **Transport Assessment** (Doc Ref. 8.5), this Appendix 9A contains a worst-case assessment for all of the junctions that have subsequently been scoped-out of the **Transport Assessment**. This assessment used worst-case scenario flows that incorporate a high level of background growth in addition to the worst case Sizewell flows. Despite being an absolute worst case in terms of demand, the junctions presented in this appendix are not anticipated to become over-capacity. For this reason, they have been scoped-out of any further assessment and are not included in the main body of the **Transport Assessment**.

A.2. Junction 4a – B1069 / B1078 Ashe Road T-junction

a) Context

A.2.1. Junction 4a is a village centre simple priority T-junction, located approximately 9 miles south-west of the Sizewell C site. It is formed where the B1078 Ashe Road meets the B1069 Woodbridge Road and B1078 Orford Road, in the village of Tunstall. All approaches to the junction operate with a speed limit of 30mph. There is no street lighting present in the vicinity of the junction. A satellite image of the existing junction layout is shown in **Plate 9.1**.

Plate 9.1 – Existing B1069 / B1078 Ashe Road T-junction Layout



b) Calibration Summary

A.2.2. Observed queue data showed that there was negligible queuing on the B1078 Orford Road and the B1078 Ashe Road minor arm during the modelled hourly intervals. Traffic flows from the B1069 Woodbridge Road are unconflicted, hence no queuing was observed.

A.2.3. The junction model also results in negligible queuing on all junction approaches. Therefore, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

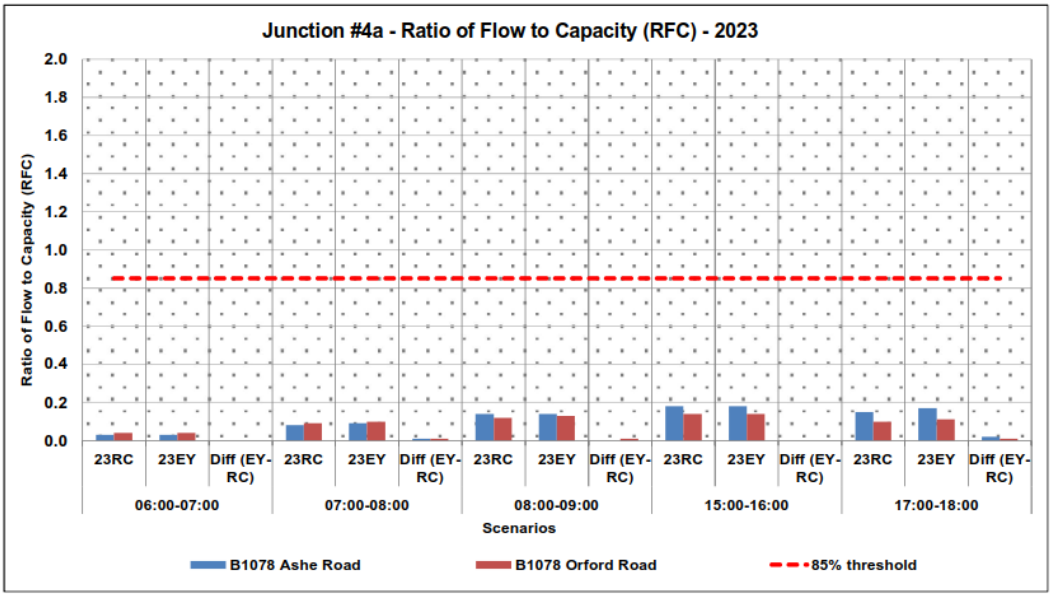
A.2.4. The 2023 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction approaches (up to +50 vehicles per hour), during all time periods, relative to the observed base year traffic flows.

A.2.5. The Early Years scenario broadly shows negligible increases from the 2023 Reference Case scenario. The B1069 Woodbridge Road approach from 07:00-08:00 and the B1078 Orford Road approach from 17:00-18:00 are exceptions to this, where small increases (+50 vehicles per hour) are predicted. This increase corresponds to construction workers accessing the Sizewell C site in the morning and leaving in the evening prior to the park and ride sites opening by 2028.

ii. Results analysis

A.2.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.2**. The difference is shown as EY-RC.

Plate 9.2 – B1069 / B1078 Ashe Road T-junction 2023 Early Years RFC Results



A.2.7. **Plate 9.2** shows that the junction is predicted to operate within capacity during all 2023 scenarios, for all modelled hours. RFCs are greatest from 15:00-16:00, followed by 17:00-18:00, 08:00-09:00, 07:00-08:00, and 06:00-07:00.

A.2.8. From 06:00-07:00 and 15:00-16:00, the Early Years scenario reports an identical RFC to the 2023 Reference Case scenario. In other periods, an RFC increase no greater than 0.02 is reported, hence Sizewell C traffic has a no discernible impact on junction operation.

d) Peak Construction (2028)

i. Demand impact

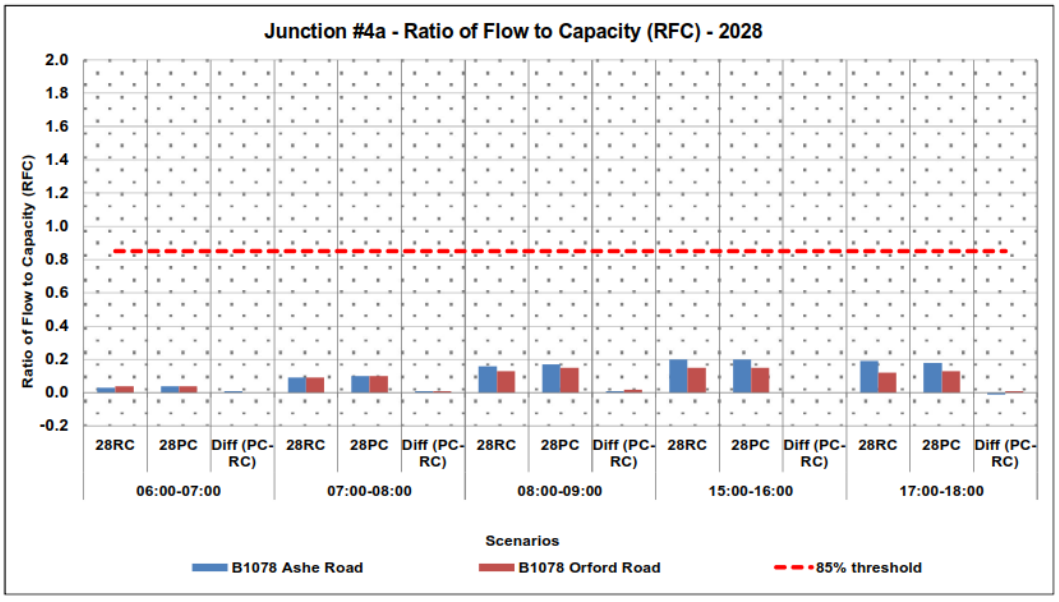
A.2.9. The 2028 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction approaches (up to +50 vehicles per hour), during all time periods, relative to the observed base year traffic flows.

A.2.10. The Peak Construction scenario broadly shows negligible increases from the 2023 Reference Case scenario. The B1069 Woodbridge Road approach from 06:00-08:00 and the B1078 Ashe Road approach in the afternoon modelled hours are exceptions to this, where small increases (+20-40 vehicles per hour) are predicted. This increase represents local Sizewell C construction workers accessing the Sizewell C site in the morning and leaving in the afternoon.

ii. Results analysis

A.2.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.3**. The difference is shown as PC-RC.

Plate 9.3 – B1069 / B1078 Ashe Road T-junction Peak Construction RFC Results



A.2.12. **Plate 9.3** shows that the junction is predicted to operate within capacity during all 2028 scenarios, for all modelled hours. RFCs are greatest from 15:00-16:00, followed by 17:00-18:00, 08:00-09:00, 07:00-08:00, and 06:00-07:00.

A.2.13. The Peak Construction scenario results are broadly identical to the 2028 Reference Case results, with negligible changes in RFC, queuing and delays. Therefore, the impact of Sizewell C traffic would be negligible.

e) Operational Phase (2034)

i. Demand impact

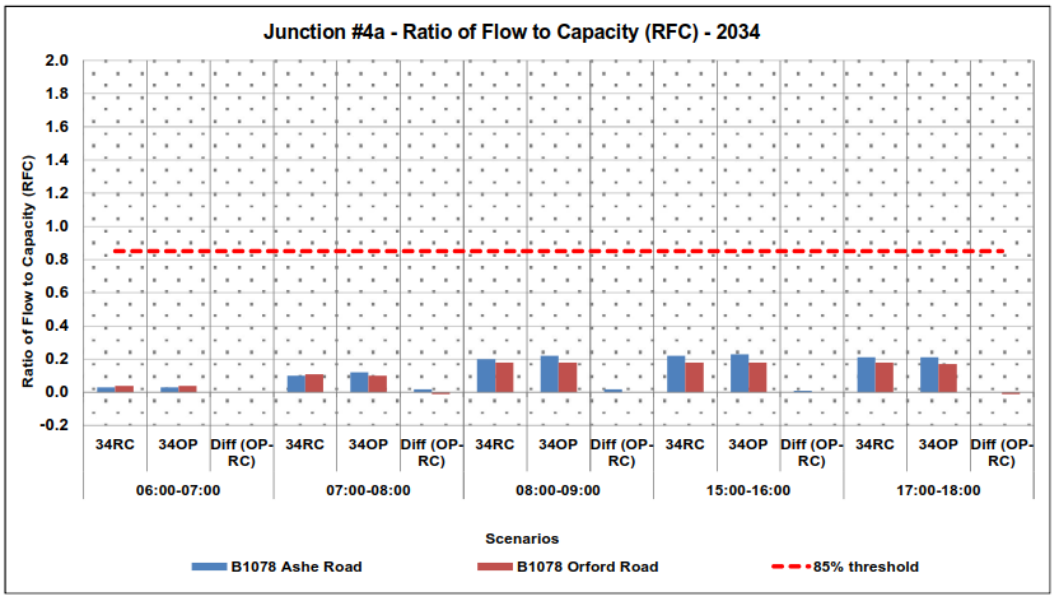
A.2.14. The 2034 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction approaches, during all time periods, relative to the observed base year traffic flows. 08:00-09:00 and the afternoon hours have the greatest increases, particularly on both major approaches; however, these are still relatively small (up to +90 vehicles per hour).

A.2.15. The Operational Phase scenario broadly shows negligible increases in RFC from the 2023 Reference Case scenario. The B1069 South approach from 07:00-08:00 is the exception to this, where a larger increase (+90 vehicles per hour) is predicted which represents operational workers accessing the Sizewell C site in the morning.

ii. Results analysis

A.2.16. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.4**. The difference is shown as OP-RC.

Plate 9.4 – B1069 / B1078 Ashe Road T-junction Operational Phase RFC Results



A.2.17. **Plate 9.4** shows that the junction is predicted to operate within capacity during all 2034 scenarios, for all modelled hours. RFCs are greatest from 15:00-16:00, followed by 17:00-18:00, 08:00-09:00, 07:00-08:00, and 06:00-07:00.

A.2.18. The Operational Phase scenario results are broadly identical to the 2034 Reference Case results, with negligible changes in RFC, queuing and delays. Therefore, the impact of Sizewell C traffic would be negligible.

f) Mitigation analysis

A.2.19. Since the B1069 / B1078 Ashe Road T-junction operates within capacity in all 2023, 2028 and 2034 scenarios, and the impact of Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

A.2.20. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.1**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.1: B1069 / B1078 Ashe Road RFC Results Overview

Time period	Base	2023	2028	2034

		RC	EY	RC	PC	RC	OP
06:00-07:00	0.03	0.04	0.04	0.04	0.04	0.04	0.04
07:00-08:00	0.08	0.09	0.10	0.09	0.10	0.11	0.12
08:00-09:00	0.12	0.14	0.14	0.16	0.17	0.20	0.22
15:00-16:00	0.12	0.18	0.18	0.20	0.20	0.22	0.23
17:00-18:00	0.11	0.15	0.17	0.19	0.18	0.21	0.21

A.2.21. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 15:00-16:00, however at its greatest in 2034, still indicates a reserve capacity of more than 75%.

A.2.22. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction.

A.3. Junction 4b – B1078 / B1069 Snape Road T-junction

a) Context

A.3.1. Junction 4b is a village-centre simple priority T-junction, located approximately 9 miles south-west of the Sizewell C site. It is formed where the minor arm – the B1069 Snape Road – meets the B1078 Orford Road, in the village of Tunstall. It is located 200m east of Junction 4a, the results of which were set out in the previous chapter. All approaches to the junction operate with a speed limit of 30mph. There is no street lighting present in the vicinity of the junction. A satellite image of the existing junction layout is shown in **Plate 9.5**.

Plate 9.5 – Existing B1069 / B1078 Snape Road T-junction Layout



b) Calibration Summary

A.3.2. Observed queue data showed that there was small or negligible queuing on the B1078 East and the B1069 Snape Road during the modelled hourly intervals. Traffic flows from the B1078 West are unconflicted, hence no queuing was observed.

A.3.3. The junction model also results in negligible queuing on all junction approaches. Therefore, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

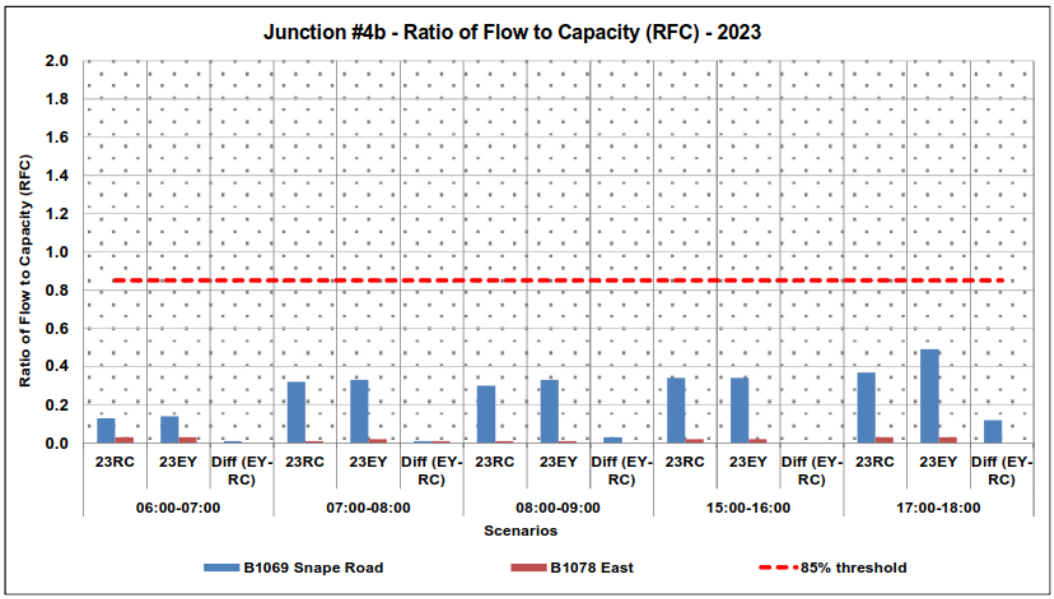
A.3.4. The 2023 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction approaches (up to +50 vehicles per hour), during all time periods, relative to the observed base year traffic flows.

A.3.5. The Early Years scenario broadly shows negligible increases from the 2023 Reference Case scenario. The B1078 West approach from 07:00-08:00 and B1069 North approach from 17:00-18:00 are exceptions to this, where small increases (+50 vehicles per hour) are predicted. This increase represents construction workers accessing the Sizewell C site prior to the opening of the park and ride sites by 2028.

ii. Results analysis

A.3.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.6**. The difference is shown as EY-RC.

Plate 9.6 – B1069 / B1078 Snape Road T-junction 2023 Early Years RFC Results



A.3.7. **Plate 9.6** shows that the junction is predicted to operate within capacity during all 2023 scenarios, for all modelled hours. RFCs are greatest from 17:00-18:00, followed by 15:00-16:00, 07:00-08:00, 08:00-09:00, and 06:00-07:00.

A.3.8. From 15:00-16:00, the Early Years scenario reports an identical RFC to the 2023 Reference Case scenario. In other periods, an RFC increase no greater than 0.03 is reported, except 17:00-18:00 where the RFC increases by 0.12. However, since all scenarios report ample reserve capacity, the impact of Sizewell C traffic would be unnoticeable.

d) Peak Construction (2028)

i. Demand impact

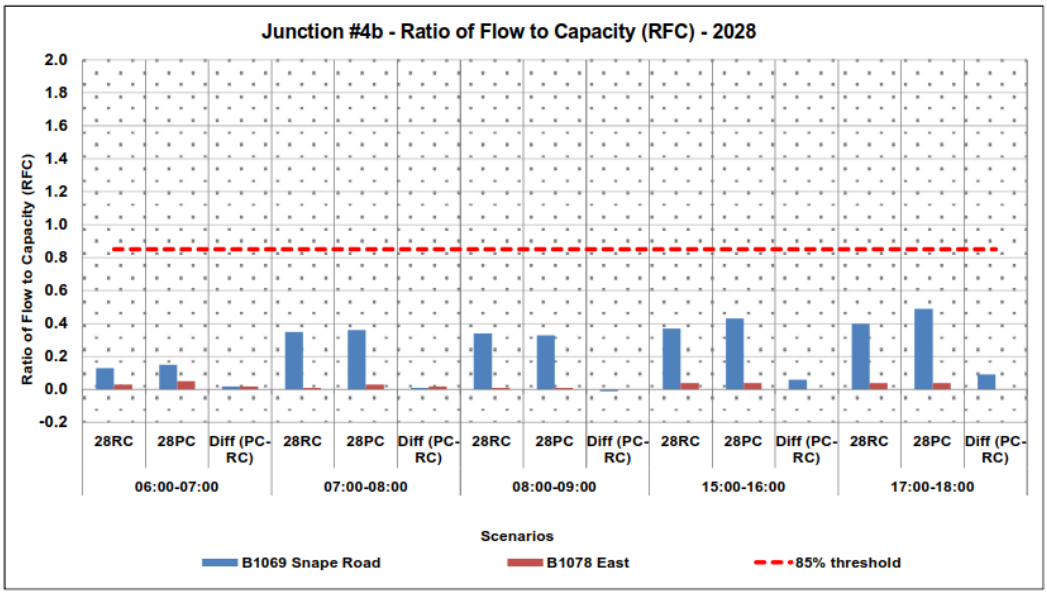
A.3.9. The 2028 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction approaches (up to +70 vehicles per hour), during all time periods, relative to the observed base year traffic flows. The afternoon hours tend to have the greatest increases, particularly on the B1078 West major approach; however, these are still relatively small (+60-70 vehicles per hour).

A.3.10. The Peak Construction scenario shows negligible increases from the 2028 Reference Case scenario of no more than 40 vehicles per hour on the B1078 West approach in the early morning and on the B1069 North approach in the evening.

ii. Results analysis

A.3.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.7**. The difference is shown as PC-RC.

Plate 9.7 – B1069 / B1078 Snape Road T-junction Peak Construction RFC Results



A.3.12. **Plate 9.7** shows that the junction is predicted to operate within capacity during all 2028 scenarios, for all modelled hours. RFCs are greatest from 17:00-18:00, followed by 15:00-16:00, 07:00-08:00, 08:00-09:00, and 06:00-07:00.

A.3.13. From 08:00-09:00, the Early Years scenario reports a reduction in RFC relative to the 2023 Reference Case scenario. In other periods, small RFC increases are reported. However, since all scenarios report ample reserve capacity, the impact of Sizewell C traffic would be unnoticeable.

e) Operational Phase (2034)

i. Demand impact

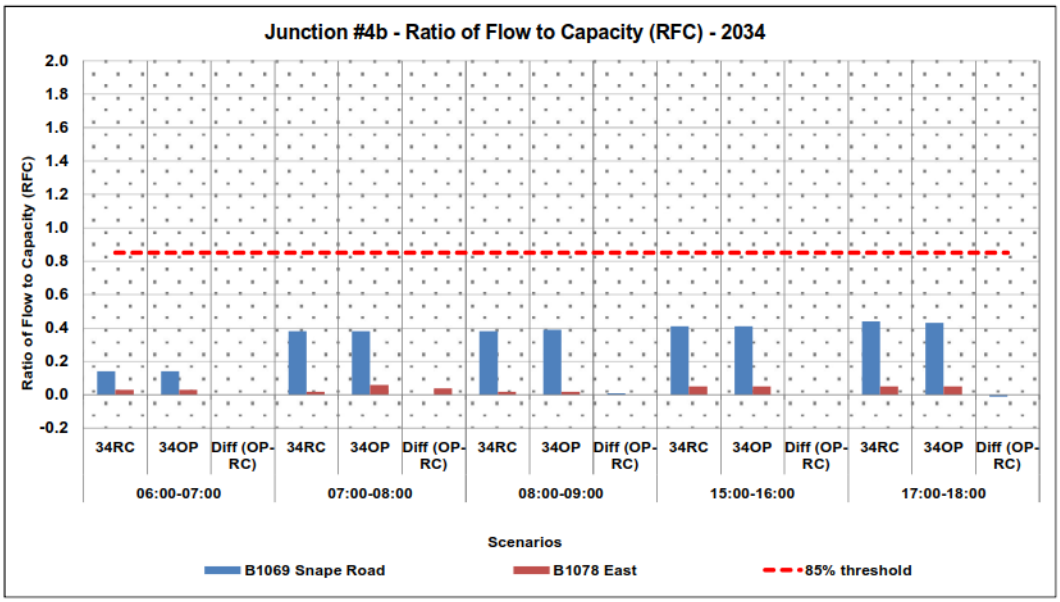
A.3.14. The 2034 Reference Case scenario traffic flows show small or negligible increases in entry demand on all junction arms (up to +90 vehicles per hour), during all time periods, relative to the observed base year traffic flows. The afternoon hours tend to have the greatest increases, particularly on the B1078 West approach; however, these are still relatively small (+70-90 vehicles per hour).

A.3.15. The Operational Phase scenario broadly shows negligible increases from the 2034 Reference Case scenario. The B1078 West approach from 07:00-08:00 is the exception to this, where a larger increase (+90 vehicles per hour) is predicted. This increase represents operational workers accessing the Sizewell C site in the morning.

ii. Results analysis

A.3.16. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.8**. The difference is shown as OP-RC.

Plate 9.8 – B1069 / B1078 Snape Road T-junction Operational Phase RFC Results



A.3.17. **Plate 9.8** shows that the junction is predicted to operate within capacity during all 2034 scenarios, for all modelled hours. RFCs are greatest from 17:00-18:00, followed by 15:00-16:00, 08:00-09:00, 07:00-08:00, and 06:00-07:00.

A.3.18. The Operational Phase scenario reports broadly identical RFCs to the 2034 Reference Case scenario. The junction is anticipated to operate within capacity, and the impact of Sizewell C traffic during the Operational Phase would be negligible.

f) Mitigation analysis

A.3.19. Since the B1069 / B1078 Snape Road T-junction operates within capacity in all 2023, 2028 and 2034 scenarios, and the impact of Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

A.3.20. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.2**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.2: B1069 / B1078 Snape Road RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.09	0.13	0.14	0.13	0.15	0.14	0.14
07:00-08:00	0.24	0.32	0.33	0.35	0.36	0.38	0.38
08:00-09:00	0.25	0.30	0.33	0.34	0.33	0.38	0.39
15:00-16:00	0.28	0.34	0.34	0.37	0.43	0.41	0.41
17:00-18:00	0.28	0.37	0.49	0.40	0.49	0.44	0.43

A.3.21. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 17:00-18:00, however at its greatest in 2028, still indicates a reserve capacity of more than 50%.

A.3.22. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction.

A.4. Junction 7(N)a – A12/ B1119 T-Junction (North), Saxmundham

a) Context

A.4.1. Junction 7 effectively comprises a staggered crossroads between the A12 and the B1119 Rendham Road. However, given the complexity of the junction, with more than one give-way line between the A12 and B1119 Rendham Road in both the north and south, it could not be modelled as a staggered crossroads.

A.4.2. Instead, each give-way line was modelled as separate T-junctions, which collectively make up the staggered crossroads shown in **Plate 9.9**. These are located at the two standard give-way lines between the B1119 Rendham Road and the A12, and the two give-way lines between the A12 Off Slips and the B1119 Rendham Road. This report splits the junction into 7(N): the northern junction with the B1119 Rendham Road West; and 7(S): the southern junction with the B1119 Rendham Road East.

A.4.3. Junction 7(N) is a three arm T-Junction between the A12 and the B1119 Rendham Road to the west, located approximately 6-miles west of the Sizewell C site. Both the A12 and B1119 Rendham Road are national speed limit roads subject to a 60mph speed limit. There is no street lighting at the junction.

A.4.4. The junction layout is such that the entire junction cannot be modelled in a single Junctions 9 model. The modelled junction (Junction 7(N)a) is the main part of the junction, at the give-way line between B1119 Rendham Road West and the A12 main carriageway. The give-way line between the A12 Off Slip and B1119 Rendham Road West has been modelled separately as Junction 7(N)b, the results of which are presented in **section A.5**.

Plate 9.9 – Existing A12 / B1119 Junction Layout



b) Calibration Summary

A.4.5. Observed queue data showed that there were small or negligible queues on all approaches during the modelled hourly intervals. The junction model typically results in queues slightly lower than those observed, with negligible queues on all approaches. However, it is considered that the differences in queue length are not material and that the model is representative of existing conditions.

c) Early Years (2023)

i. Demand impact

A.4.6. The 2023 Reference Case scenario traffic flows show small increases in entry demand on the B1119 Rendham Road (up to +20 vehicles per hour), compared with the observed base year traffic flows. Small to modest increases are forecast on the A12 North and A12 South, particularly during the afternoon (+20-80 vehicles per hour).

A.4.7. In the Early Years scenario, negligible changes in entry demand are forecast on the B1119 Rendham Road, when compared to the 2023 Reference Case. Generally small increases are forecast on the A12 North and A12 South (up to +70 vehicles per hour), except between 07:00-08:00

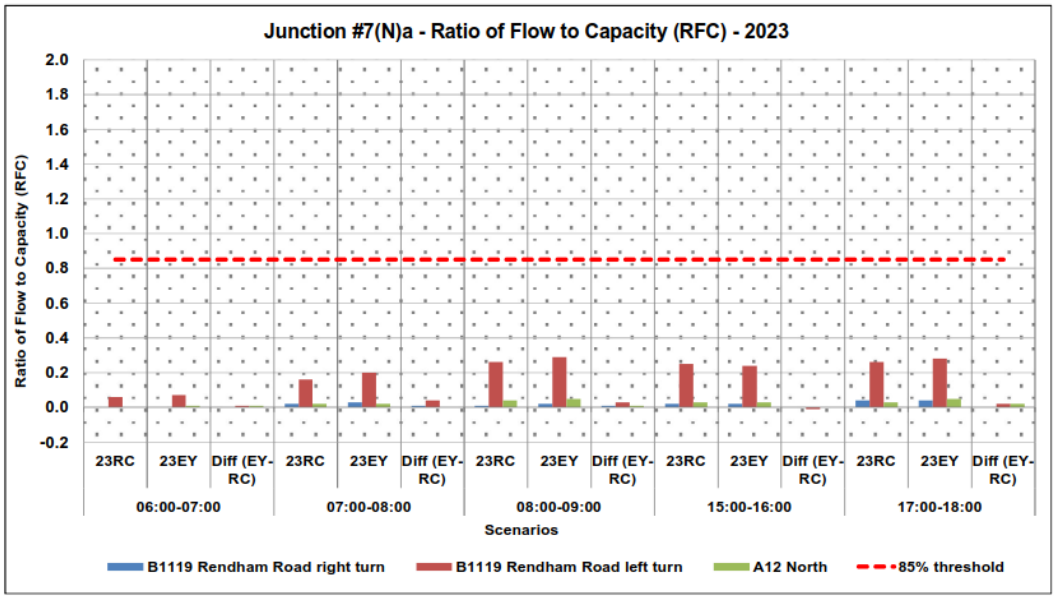
on the A12 South, where a modest to large increase is forecast (+140 vehicles per hour).

ii. Results analysis

A.4.8. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.10**. The difference is shown as EY-RC.

Plate 9.10 – A12/ B1119 Junction (North) 2023 Early Years RFC Results

9.1.1



A.4.9. **Plate 9.10** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC reported on B1119 Rendham Road right turn.

A.4.10. The Early Years scenario, RFC results are very similar to the 2023 Reference Case, generally showing negligible increases in RFC on all movements. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic.

A.4.11. The Sizewell C traffic is also predicted to have a negligible impact on delay at the junction, with the maximum increase in delay predicted to be less than two seconds per vehicle on the B1119 Rendham Road left turn from 06:00-07:00. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

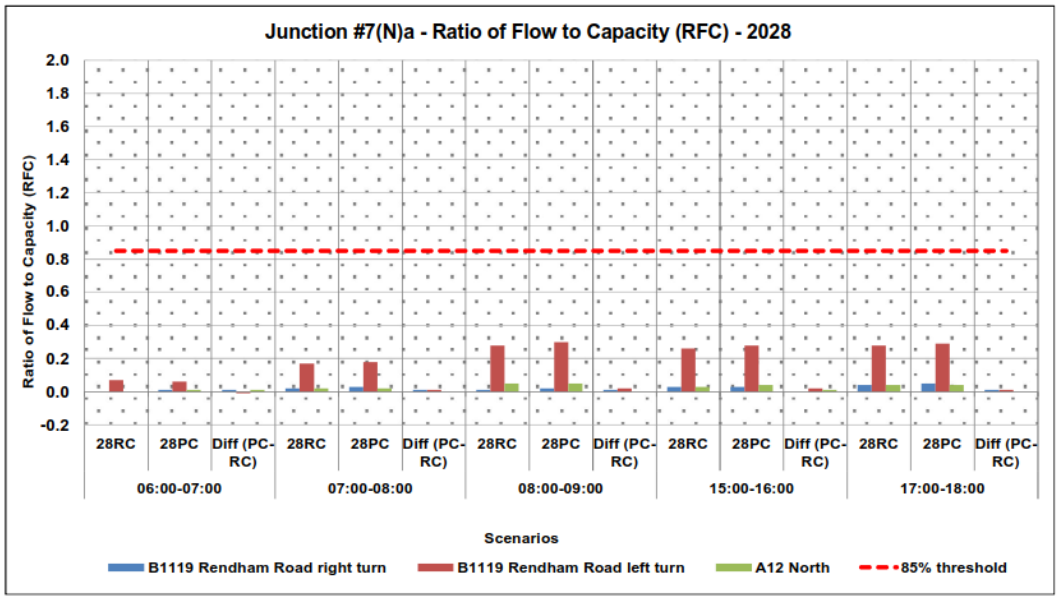
A.4.12. The 2028 Reference Case scenario traffic flows show small increases in entry demand on the B1119 Rendham Road (up to +30 vehicles per hour), compared with the observed base year traffic flows. Small to modest increases are forecast on the A12 North and A12 South, particularly during the afternoon (+80-140 vehicles per hour).

A.4.13. In the Peak Construction scenario, negligible changes in entry demand are forecast on the B1119 Rendham Road, when compared to the 2028 Reference Case. Negligible to small increases are forecast on the A12 North and A12 South (up to +40 vehicles per hour).

ii. Results analysis

A.4.14. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.11**. The difference is shown as PC-RC.

Plate 9.11 – A12/ B1119 Junction (North) Peak Construction RFC Results



A.4.15. **Plate 9.11** shows that the junction is predicted to operate well within capacity during all modelled hours in the 2028 Reference Case scenario. Across all five modelled hours, a maximum RFC of just 0.28 on the B1119 Rendham Road right turn is recorded.

A.4.16. The Peak Construction scenario RFC results show a small increase in RFC on all movements, however a maximum RFC of 0.30 is recorded on

the B1119 Rendham Road right turn. The junction will continue to operate with ample spare capacity with the addition of the Sizewell C traffic in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

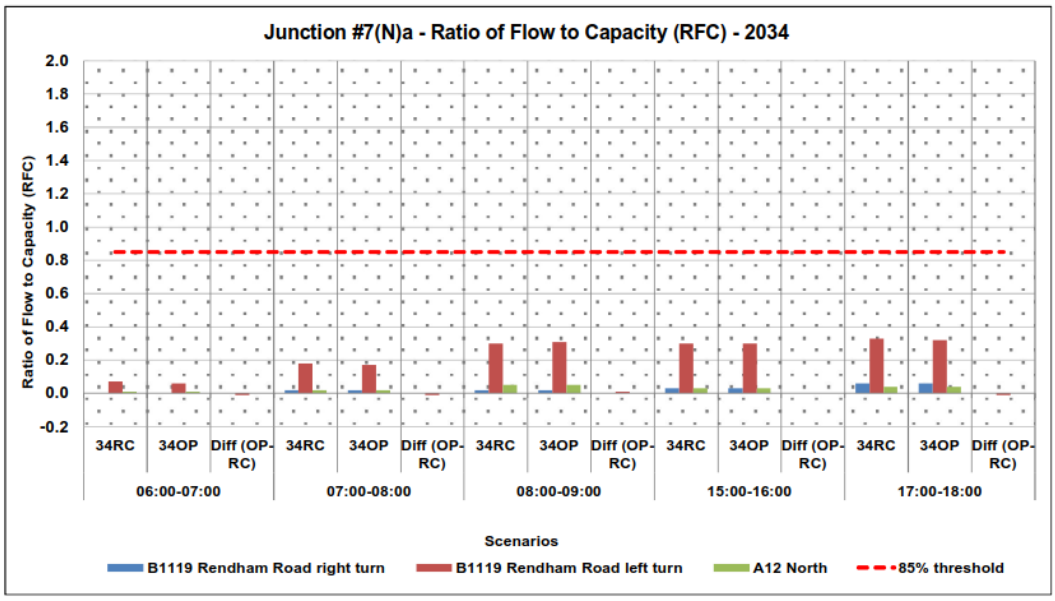
A.4.17. The 2034 Reference Case scenario traffic flows show small increases in entry demand on the B1119 Rendham Road (up to +60 vehicles per hour), compared with the observed base year traffic flows. Modest to large increases are forecast on the A12 North and A12 South, particularly during the afternoon (+90-180 vehicles per hour).

A.4.18. In the Operational Phase scenario, negligible changes in entry demand are forecast across all arms, when compared to the 2034 Reference Case.

ii. Results analysis

A.4.19. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.12**. The difference is shown as OP-RC.

Plate 9.12 – A12 / B1119 Junction (North) 2034 Operational Phase RFC Results



A.4.20. **Plate 9.12** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the

maximum RFC of 0.33 observed on B1119 Rendham Road right turn from 17:00-18:00.

A.4.21. The Operational Phase scenario RFC results are nearly identical to those in the 2034 Reference Case, with no increase in RFC observed on the movements between the B1119 and A12 North, and a minor reduction of -0.01 in RFC observed during three of the five modelled hours on the right turn from B1119 to A12 south.

A.4.22. As in the other scenarios, there is predicted to be a negligible impact on delays at the junction, with the largest increase of six seconds occurring from 06:00-07:00. Overall, the model shows that the Sizewell C traffic would have a minimal impact on the junction.

f) Mitigation analysis

A.4.23. The modelling of the existing junction shows that the Sizewell C traffic would have a minimal impact on the operation of the existing junction. Therefore, mitigation is not required at this junction to resolve capacity problems.

A.4.24. To address safety concerns at this junction, it is proposed to make some minor changes to the junction layout, which include the introduction of an island between the left and right turns from the minor arm and improving road markings in the turning area in the central reservation. In addition, advance give-way warning signage and slow marking are proposed upstream on the B1119 Rendham Road. The proposed junction mitigation design can be seen in **Yoxford Roundabout and other Highway Improvements Plans** (Doc Ref. 2.9).

A.4.25. The modelling results for the mitigated layout are presented in **Plates 9.13, 9.14 and 9.15** for the Early Years, Peak Construction, and Operational Phase scenarios respectively.

Plate 9.13 – A12/ B1119 Junction (North) Operational Phase RFC Results

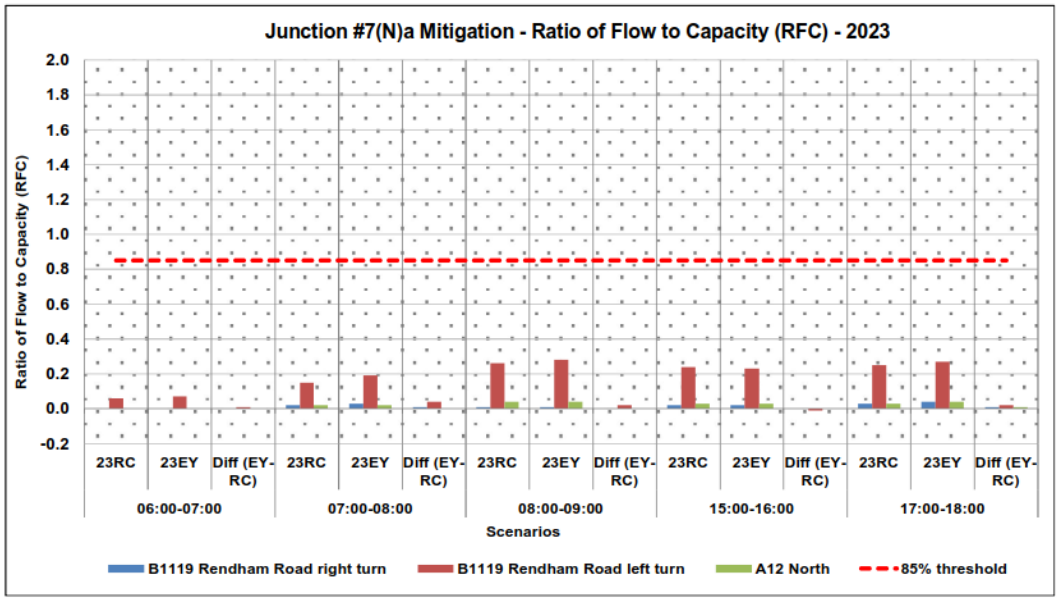


Plate 9.14 – A12 / B1119 Junction (North) Operational Phase RFC Results

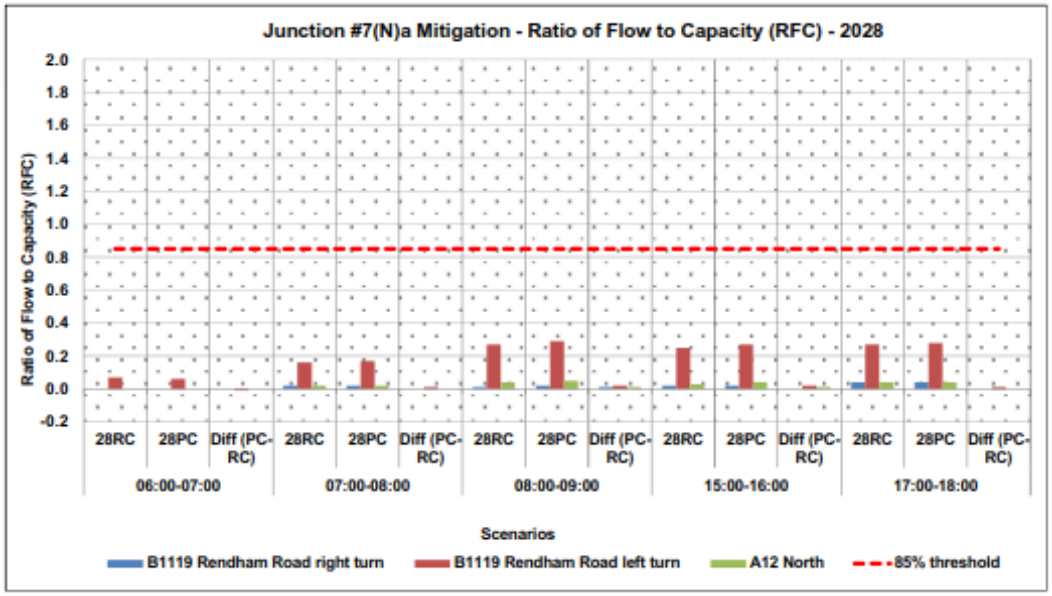
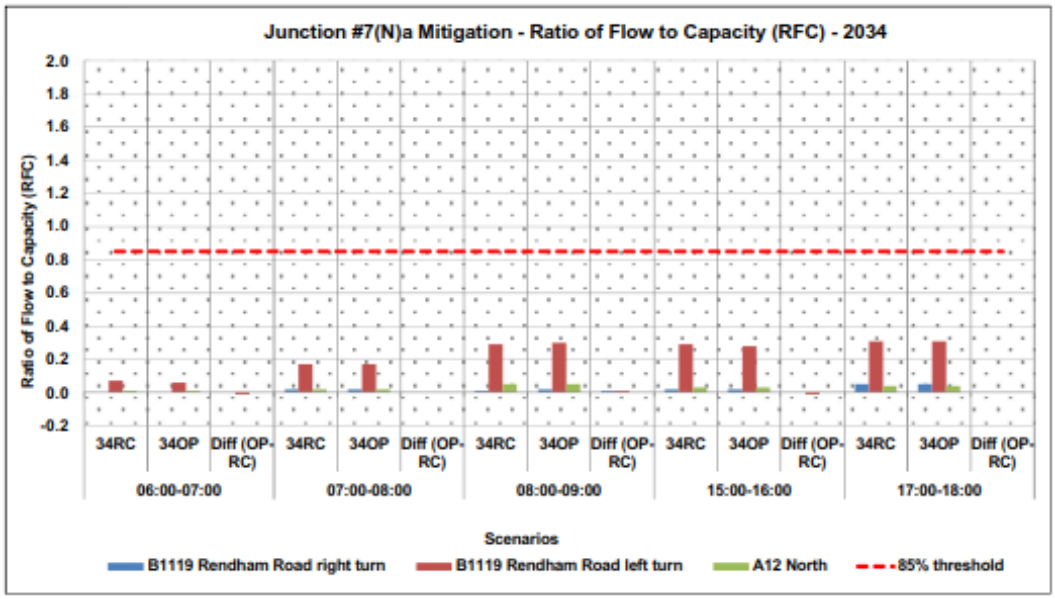


Plate 9.15 – A12 / B1119 Junction (North) Operational Phase RFC Results



A.4.26. The modelling results shown in **Plates 9.13, 9.14 and 9.15** show that the mitigated layout results in virtually identical RFCs across all scenarios, with small reductions reported throughout.

g) Overview

A.4.27. The modelling results show that the junction operates with ample reserve capacity in all hours and scenarios tested. It is considered that the impact

of Sizewell C traffic on the overall junction performance would be minimal. **Table 9.3** summarises the RFC results for the junction.

Table 9.3 – A12/ B1119 Junction (North) RFC Results Summary

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.02	0.06	0.07	0.07	0.06	0.07	0.06
07:00-08:00	0.12	0.16	0.20	0.17	0.18	0.18	0.17
08:00-09:00	0.20	0.26	0.29	0.28	0.30	0.30	0.31
15:00-16:00	0.19	0.25	0.24	0.26	0.28	0.30	0.30
17:00-18:00	0.20	0.26	0.28	0.28	0.29	0.33	0.32

A.4.28. An improvement scheme is proposed at this junction to address safety concerns at the junction. The mitigated layout offers a small reduction in RFC in all modelled time periods and scenarios. **Table 9.4** summarises the RFC results with this improvement scheme.

Table 9.4 – A12/ B1119 Junction (North) Mitigation RFC Results Summary

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.02	0.06	0.07	0.07	0.06	0.07	0.06
07:00-08:00	0.12	0.15	0.19	0.16	0.17	0.17	0.17
08:00-09:00	0.20	0.26	0.28	0.27	0.29	0.29	0.30
15:00-16:00	0.19	0.24	0.23	0.25	0.27	0.29	0.28
17:00-18:00	0.20	0.25	0.27	0.27	0.28	0.31	0.31

A.5. Junction 7(N)b – A12/ B1119 T-Junction (North), Saxmundham

a) Context

A.5.1. Junction 7(N) is a three arm T-Junction between the A12 northbound off slip and B1119 Rendham Road, located approximately 6-miles west of the Sizewell C site. Both the A12 and B1119 are national speed limit roads subject to a 60mph speed limit. There is no street lighting at the junction.

A.5.2. The junction layout is such that the entire junction cannot be modelled in a single Junctions 9 model. The modelled junction (Junction 7(N)b) is the secondary part of the junction, between the A12 Off Slip and B1119 Rendham Road West. The main part of the junction – the give-way line between B1119 Rendham Road West and the A12 main carriageway – has been modelled separately as Junction 7(N)a, the results of which were summarised in **section A.4**. A satellite image of the existing junction layout is shown in **Plate 9.16**.

Plate 9.16 – Existing A12/ B1119 Junction Layout



b) Calibration Summary

A.5.3. The observed queue data shows that there are small or negligible queues on all arms during the modelled hourly intervals. The junction model typically results in queues slightly shorter than those observed, with

negligible queues on all approaches. However, it is considered that the differences in queue length are not material and that the model is representative of existing conditions.

c) Early Years (2023)

i. Demand impact

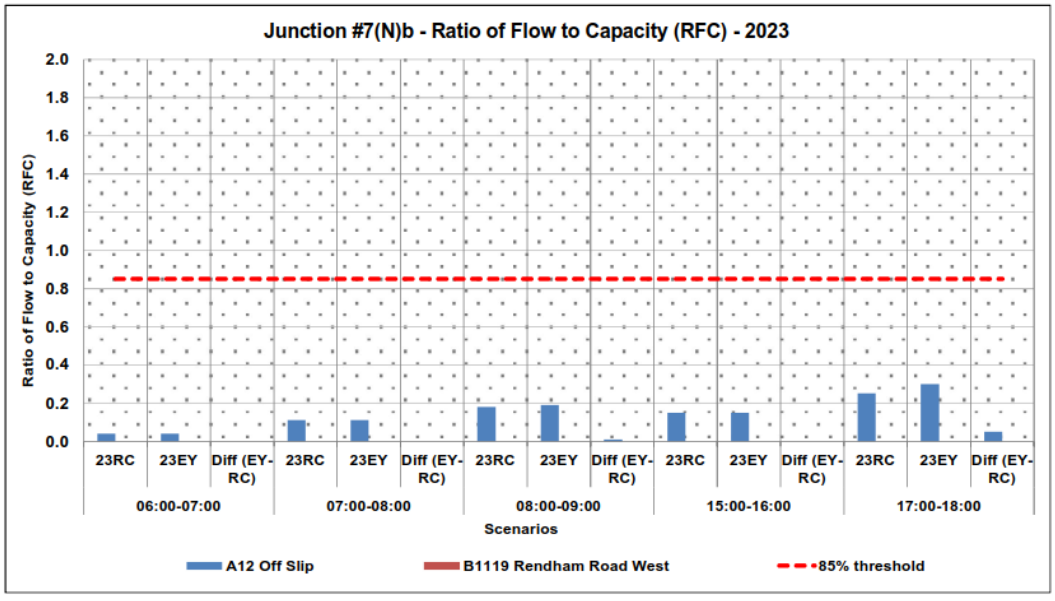
A.5.4. The 2023 Reference Case scenario traffic flows show negligible to small increases in entry demand on all arms of the junction in all modelled hours (up to +60 vehicles per hour).

A.5.5. The difference in forecast traffic flows between the 2023 Reference Case and Early Years scenario is negligible.

ii. Results analysis

A.5.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.17**. The difference is shown as EY-RC.

Plate 9.17 – A12/ B1119 Junction (North) 2023 Early Years RFC Results



A.5.7. **Plate 9.17** shows that the junction is predicted to have ample spare capacity during all modelled hours in both the 2023 Reference Case scenario and in the Early Years scenario. The differences between the two scenarios are negligible, which is intuitive given the negligible changes in traffic flows between the scenarios.

A.5.8. Sizewell C traffic has no material impact on the operation of the junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

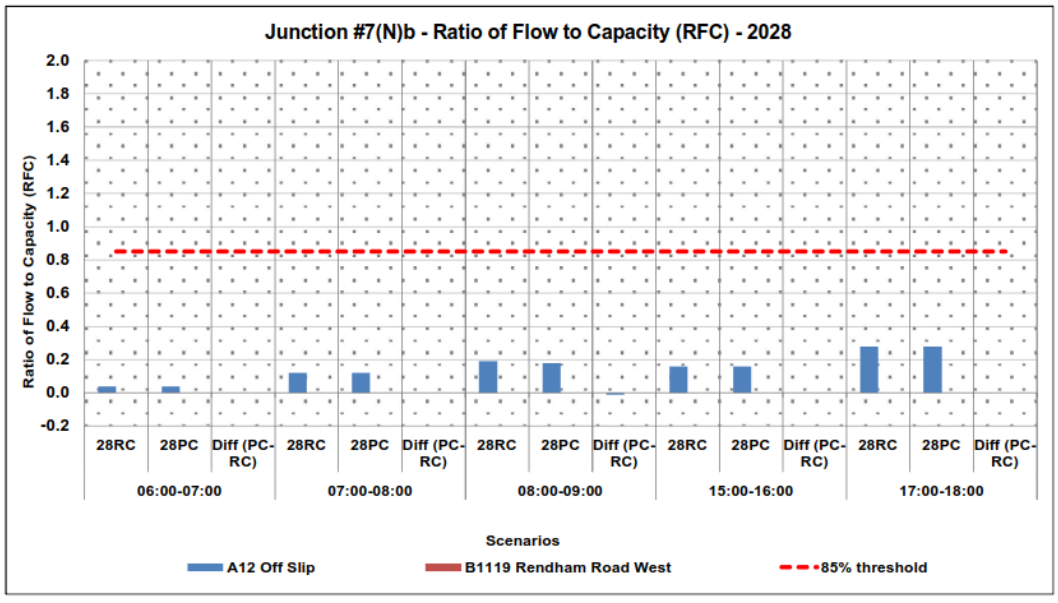
A.5.9. The 2028 Reference Case scenario traffic flows show negligible to small increases in entry demand on all arms of the junction in all modelled hours (up to +40 vehicles per hour). The only exception is from 17:00-18:00 on the A12 Off Slip, where a more modest increase is forecast (+80 vehicles per hour).

A.5.10. The difference in forecast traffic flows between the 2028 Reference Case and Early Years scenarios is negligible.

ii. Results analysis

A.5.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.18**. The difference is shown as PC-RC.

Plate 9.18 – A12/ B1119 Junction (North) Peak Construction RFC Results



A.5.12. **Plate 9.18** shows that the junction is predicted to have ample spare capacity during all modelled hours in both the 2028 Reference Case scenario and in the Peak Construction scenario. The differences between the two scenarios are negligible, which is intuitive given the negligible changes in traffic flows between the scenarios.

A.5.13. Sizewell C traffic has no material impact on the operation of the junction in Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

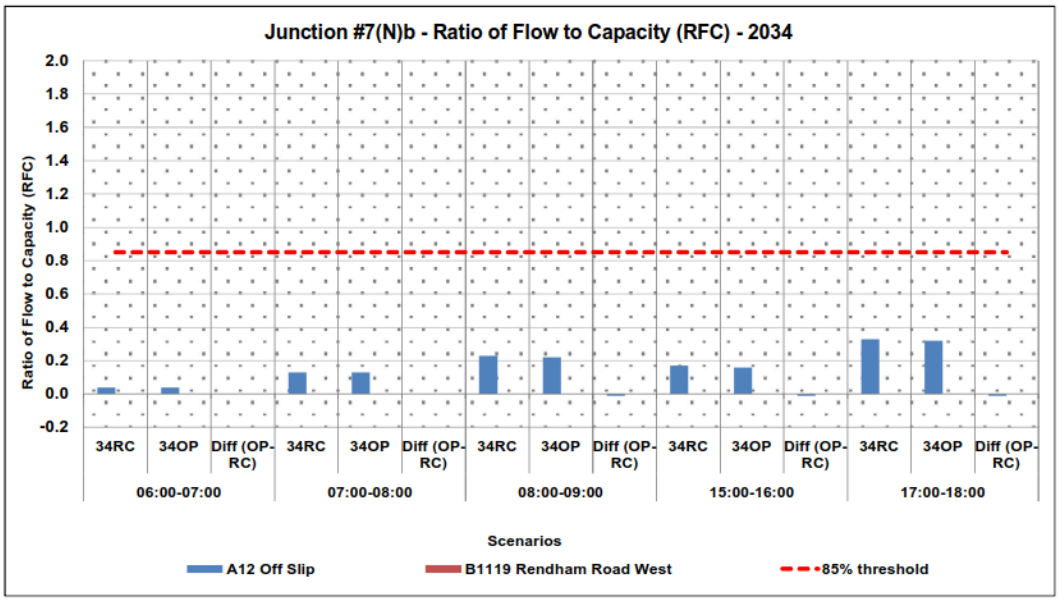
A.5.14. The 2034 Reference Case scenario traffic flows show negligible to small increases in entry demand on all arms of the junction in all modelled hours (up to +70 vehicles per hour). The only exception is from 17:00-18:00 on the A12 Off Slip, where a more modest increase is forecast (+110 vehicles per hour).

A.5.15. The difference in forecast traffic flows between the 2028 Reference Case and Early Years scenarios is negligible.

ii. Results analysis

A.5.16. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.19**. The difference is shown as OP-RC.

Plate 9.19 – A12/ B1119 Junction (North) Operational Phase RFC Results



A.5.17. **Plate 9.19** shows that the junction is predicted to have ample spare capacity during all modelled hours in both the 2034 Reference Case and Operational Phase scenarios. The differences between the two scenarios are negligible, which is intuitive given the negligible changes in traffic flows.

A.5.18. Sizewell C traffic has no material impact on the operation of the junction in Operational scenario.

f) Mitigation Analysis

A.5.19. The modelling of the existing junction shows that the Sizewell C traffic would have a minimal impact on the operation of the existing junction, and there is reserve capacity in all scenarios and time periods. Therefore, mitigation for capacity reasons is not required at this junction.

g) Overview

A.5.20. The modelling results show that the junction operates with ample reserve capacity in all hours and scenarios tested. It is considered that there the impact of Sizewell C traffic on the overall junction performance would be minimal. **Table 9.5** summarises the RFC results for all scenarios and peak hours tested.

Table 9.5 – A12/ B1119 Junction (North) RFC Results Summary

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.03	0.04	0.04	0.04	0.04	0.04	0.04
07:00-08:00	0.09	0.11	0.11	0.12	0.12	0.13	0.13
08:00-09:00	0.12	0.18	0.19	0.19	0.18	0.23	0.22
15:00-16:00	0.12	0.15	0.15	0.16	0.16	0.17	0.16
17:00-18:00	0.16	0.25	0.30	0.28	0.28	0.33	0.32

A.6. Junction 7(S)b – A12/ B1119 T-Junction (South), Saxmundham

a) Context

A.6.1. Junction 7(S) is a three arm T-Junction between the A12 southbound off slip and B1119 Rendham Road, located west of Saxmundham, approximately 6-miles west of the Sizewell C site. Both the A12 and B1119 Rendham Road East are national speed limit roads subject to a 60mph speed limit, although the speed limit reduces to 30mph about 60m to the east of the junction. There is no street lighting at the junction.

A.6.2. The junction layout is such that the entire junction cannot be modelled in a single Junctions 9 model. The modelled junction (Junction 7(S)b) is the secondary part of the junction, between the A12 Off Slip and B1119 Rendham Road East. The main part of the junction – the give-way line between B1119 Rendham Road East and the A12 main carriageway – has been modelled separately as Junction 7(S)a in, the results of which are set out in **section 9.11** of **Chapter 9** of the **Transport Assessment** (Doc Ref. 8.5). A satellite image of the existing junction layout is shown in **Plate 9.20**.

Plate 9.20 – Existing A12/ B1119 Junction Layout



b) Calibration Summary

A.6.3. Observed queue data showed that there were small queues on the minor B1119 arm in all modelled hours. The calibrated junction model shows queue lengths that typically are shorter than observed, with the model showing negligible queues on all arms in the modelled hours. It is considered that the differences in queue length are not significant and that the model is representative of existing conditions.

c) Early Years (2023)

i. Demand impact

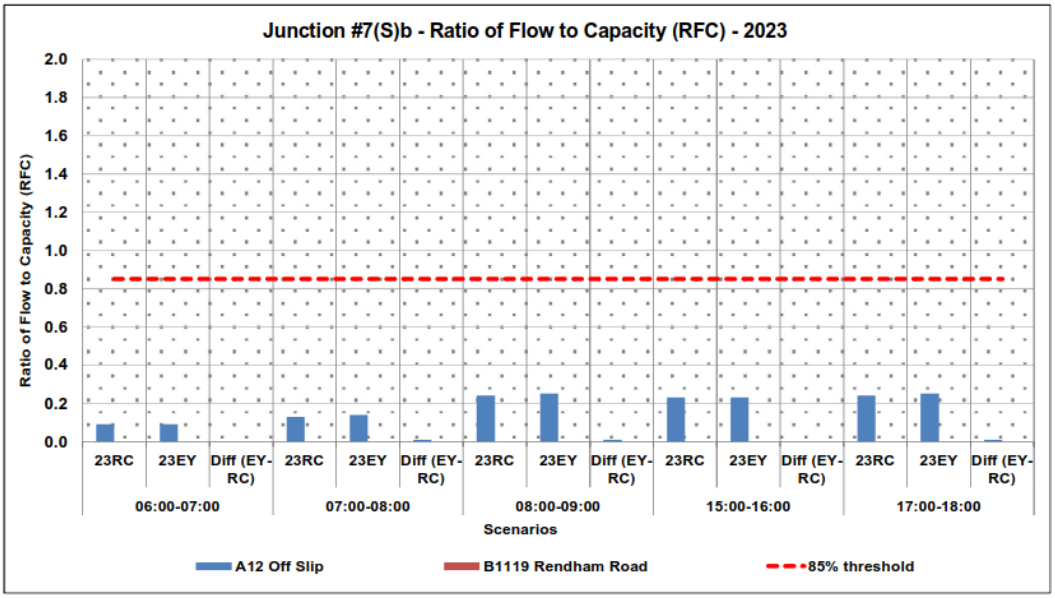
A.6.4. The 2023 Reference Case scenario traffic flows show small increases in entry demand on both approaches to the junction of +20-50 vehicles per hour relative to the base year.

A.6.5. The Early Years scenario flows are very similar to those in the 2023 Reference Case.

ii. Results analysis

A.6.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.21**. The difference is shown as EY-RC.

Plate 9.21 – A12/ B1119 Junction (South) 2023 Early Years RFC Results



A.6.7. **Plate 9.21** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.24 being reported during the 08:00-09:00 peak on the right turn from the A12 off-slip.

A.6.8. The Early Years scenario RFC results are nearly identical to those in the 2023 Reference Case, showing that the small flow differences between the two scenarios have no impact on the operation of the junction.

A.6.9. The Sizewell C traffic is also predicted to have a negligible impact on delay at the junction, with the maximum increase in delay predicted to be less than a fraction of a second per vehicle, which would be imperceptible to drivers. The modelling shows that no mitigation would be required in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

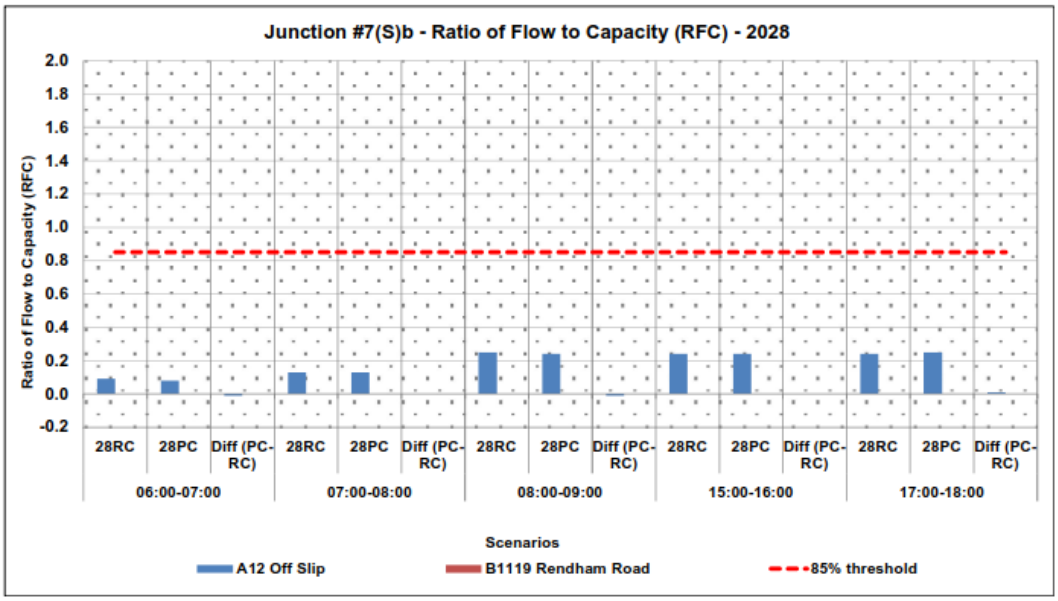
A.6.10. The 2028 Reference Case scenario traffic flows show small increases in entry demand on both approaches to the junction of +20-50 vehicles per hour relative to the base year.

A.6.11. The flows in the Peak Construction scenario flows are similar to those in the 2028 Reference Case.

ii. Results analysis

A.6.12. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.22**. The difference is shown as PC-RC.

Plate 9.22 – A12/ B1119 Junction (South) Peak Construction RFC Results



A.6.13. **Plate 9.22** shows that the junction is predicted to operate with spare capacity in all modelled hours in the 2028 Reference Case scenario. Across all five modelled hours, the worst performing movement (the A12 off slip) is predicted to have a maximum RFC of 0.25.

A.6.14. The Peak Construction scenario RFC results show a small increase in RFC on all movements compared to the 2028 Reference Case, except for the 17:00-18:00 peak where the RFC is predicted to reduce on the right turn from the B1119 and on the right turn from the A12 south. The maximum RFC on the worst performing movement (B1119 to A12 south) is predicted to be 0.6, indicating that the junction will continue to operate with ample spare capacity with Sizewell C traffic.

A.6.15. In most of the modelled hours, delays on all movements are predicted to increase by less than one second per vehicle. The largest increase is an additional delay of less than 1.5 seconds per vehicle on the right turn from the B1119 to A12 North during the 08:00-09:00 peak – it is considered that this is a negligible increase that would not be perceptible to drivers. It is therefore considered that the traffic generated by Sizewell C in the Peak Construction scenario will not have a material impact on the operation of the A12/ B1119B1119 (south) junction.

e) Operational Phase (2034)

i. Demand impact

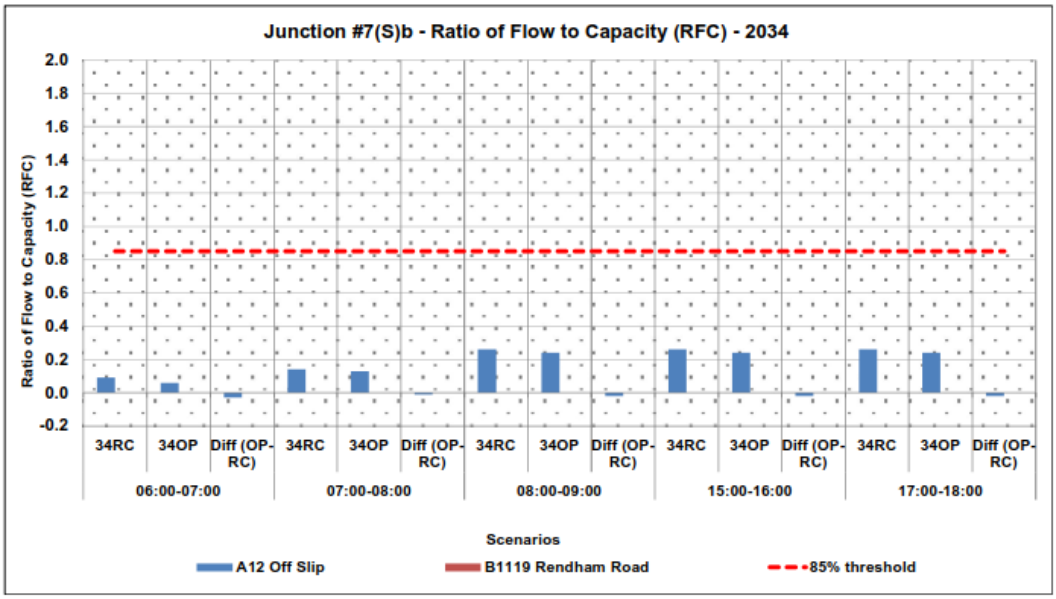
A.6.16. The 20348 Reference Case scenario traffic flows show small increases in entry demand on both approaches to the junction of +20-70 vehicles per hour relative to the base year.

A.6.17. The flows in the Peak Construction scenario flows are similar to those in the 2034 Reference Case.

ii. Results analysis

A.6.18. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.23**. The difference is shown as OP-RC.

Plate 9.23 – A12/ B1119 Junction (South) Operational Phase RFC Results



A.6.19. **Plate 9.23** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the maximum RFC of 0.26 predicted on the movement from B1119 to A12 south during the 08:00-09:00 peak.

A.6.20. The Operational Phase scenario RFC results are nearly identical to those in the 2034 Reference Case, with at most a ±0.01 variance from the 2034 Base in all of the modelled peak hours.

A.6.21. As in the other scenarios, there is predicted to be a negligible impact on delays at the junction, with average delay on the A12 off slip predicted to

reduce by an imperceptible fraction of a second. It is therefore considered that capacity mitigation is not required at this junction.

f) Mitigation analysis

A.6.22. The modelling of the existing junction shows that the Sizewell C traffic would have a minimal impact on the operation of the existing junction. This means that mitigation is not required at this junction for capacity reasons.

g) Overview

A.6.23. The modelling results show that the junction operates ample reserve capacity in all hours and scenarios tested. It is considered that there the impact of Sizewell C traffic on the overall junction performance would be minimal and that mitigation of the impacts is not necessary.

Table 9.6: A12/ B1119 (south) RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.02	0.09	0.09	0.09	0.08	0.09	0.06
07:00-08:00	0.11	0.13	0.13	0.13	0.13	0.14	0.13
08:00-09:00	0.20	0.24	0.24	0.25	0.24	0.26	0.24
15:00-16:00	0.20	0.23	0.23	0.24	0.24	0.26	0.24
17:00-18:00	0.21	0.24	0.24	0.24	0.25	0.26	0.24

A.7. Junction 10 – B1122 / B1125 Leiston Road Priority Junction

a) Context

A.7.1. Junction 10 is a three-arm priority T-Junction, located approximately 6-miles north-west of the Sizewell C site. The junction is located where the B1122 meets the B1125 Leiston Road, north of Theberton. All approach arms comprise of a single lane with the national speed limit of 60mph. Due to the rural location no street lighting is in place on any of the approaches. A satellite image of the existing junction layout is shown in **Plate 9.24**.

Plate 9.24 – Existing B1122 / B1125 Leiston Road junction



b) Calibration Summary

A.7.2. Observed queue data showed that there were small or negligible queues on all arms during the modelled hourly intervals.

A.7.3. The junction model typically results in queues slightly lower than those observed. Due to there being only small differences between the observed and modelled queues, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand Impact

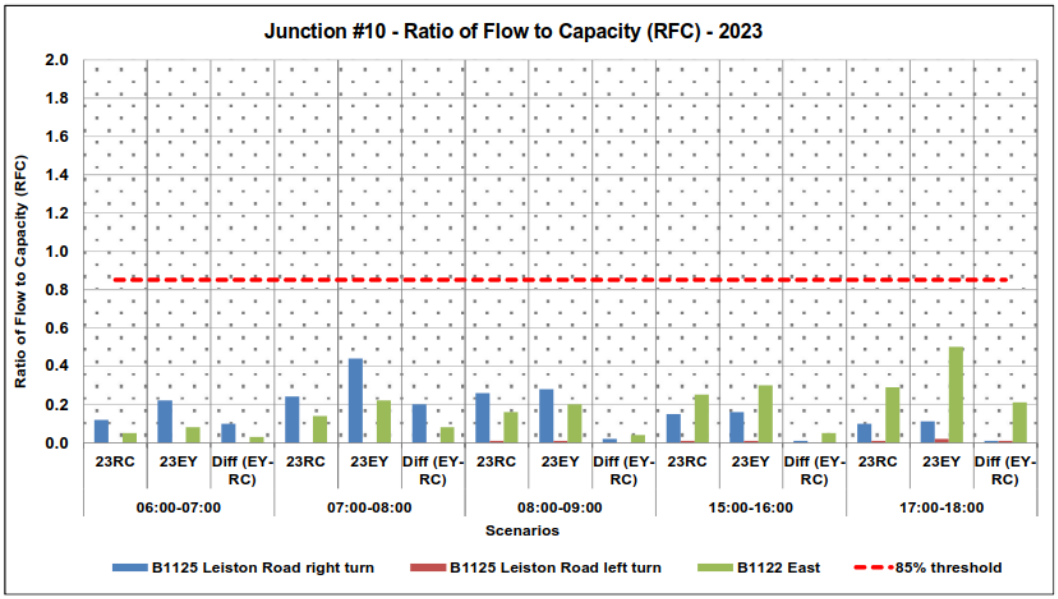
A.7.4. The 2023 Reference Case scenario traffic flows show moderate increases in entry demand on the B1122 west and east arms relative to observed base year traffic flows. The highest increases are seen on the B1122 west (+110 vehicles per hour) from 06:00-07:00 and the B1122 east (+130 vehicles per hour) from 17:00-18:00.

A.7.5. The 2023 Early Years scenario shows that traffic demand increases in comparison to the 2023 Reference Case across all modelled hours. The B1122 east sees the highest overall increase (+200 vehicles per hour) in from 17:00-18:00.

ii. Results Analysis

A.7.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.25**. The difference is shown as EY-RC.

Plate 9.25 – B1122 / B1125 junction 2023 Early Years RFC Results



A.7.7. **Plate 9.25** shows that the junction is predicted to operate well within capacity during all modelled hours in the 2023 Reference Case scenario with all arms below the 0.85 RFC threshold.

A.7.8. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing small increases in RFC on the B1125 Leiston Road eastbound and B1122 east turning movements when

comparing the two scenarios. The largest increases occur from 07:00-08:00 and 17:00-18:00, consistent with periods of greatest demand increase.

A.7.9. The highest recorded RFC in the Early Years scenario is seen as 0.52 from 17:00-18:00. This is an increase of 0.23 over the 2023 Reference Case which results in a modest increase in delay (+2 seconds per vehicle). The minimal increases in delay indicates that Sizewell C has a negligible impact on junction performance.

d) Peak Construction (2028)

i. Demand Impact

A.7.10. The 2028 Reference Case scenario traffic flows indicate moderate increases in comparison to the base year on the B1122 east and west arms across all modelled hours. The highest modelled increases are seen from 06:00-07:00 (+110 vehicles per hour) and from 17:00-18:00 (+140 vehicles per hour).

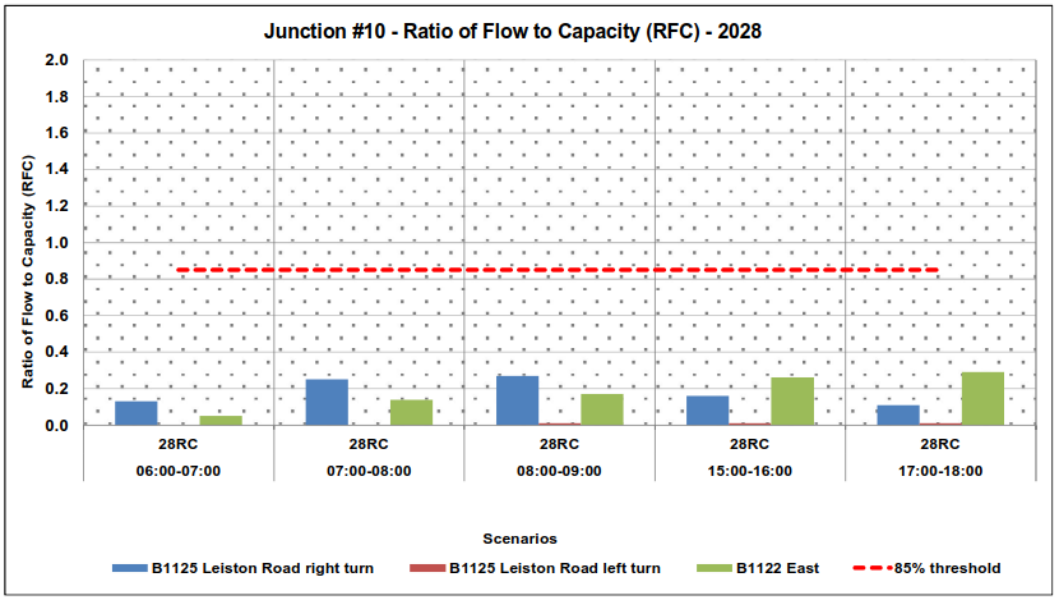
A.7.11. Due to proposed junction mitigation measures affecting the 2028 Peak Construction scenario flows these are presented in **section A.7.23**.

ii. Results Analysis

A.7.12. RFC modelling results for the 2028 Reference Case, split by each modelled hourly period, are illustrated in **Plate 9.26**.

A.7.13. 2028 Peak Construction results are presented in **section A.7.26**.

Plate 9.26 – B1122 / B1125 junction 2028 Reference Case RFC Results



A.7.14. **Plate 9.26** shows that the junction is predicted to operate well within capacity during all modelled hours in the 2028 Reference Case scenario.

A.7.15. Across all modelled hours the B1125 Leiston Road eastbound and B1122 east display the highest overall RFC values. All arms remain below the 0.85 capacity threshold however with the highest recorded RFC seen as 0.29 from 17:00-18:00.

e) Operational Phase (2034)

i. Demand Impact

A.7.16. The 2034 Reference Case scenario traffic flows display increases in comparison to the base year flows with additional vehicles seen across all modelled hours. The highest increases in entry demand were recorded from 06:00-07:00 (+120 vehicles per hour) and 17:00-18:00 (+80 vehicles per hour) on the B1122 west and B1122 east arms respectively.

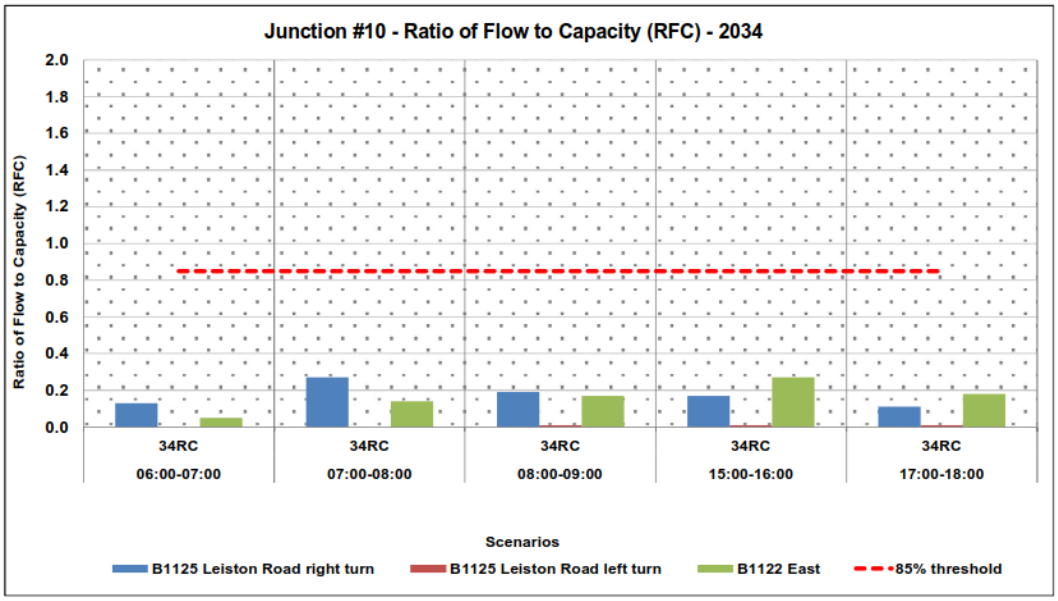
A.7.17. Due to proposed junction mitigation measures affecting the 2034 Operational Phase scenario flows, these are presented in **section A.7.28**.

ii. Results Analysis

A.7.18. RFC modelling results for the 2034 Reference Case scenario, split by each modelled hourly period, are illustrated in **Plate 9.27**.

A.7.19. 2034 Operational Phase results are presented in **section A.7.30**.

Plate 9.27 – B1122 / B1125 junction 2034 Reference Case RFC Results



A.7.20. **Plate 9.27** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with all modelled turns operating below the 0.85 RFC threshold.

A.7.21. The B1125 Leiston Road eastbound and B1122 east arms display the highest RFC values across the modelled hours with an RFC of 0.27 recorded from 07:00-08:00 and 15:00-16:00. The results indicate that despite background traffic growth, the junction is able to operate with plentiful spare capacity during the busiest hours of the day.

f) Mitigation Analysis

A.7.22. Proposed Sizewell C mitigation measures will result in layout changes at this junction. The layout of the junction will be subject to alteration from a three arm T-Junction to a four-arm staggered crossroads to allow for an extra arm from the south, linking the existing junction to the proposed Sizewell C link road. A plan of the proposed layout is present in xxx

A.7.23. As a result of the physical layout changes there are significant differences to the forecast traffic demand between the 2028 Reference Case and Peak Construction scenarios. With the construction of the Sizewell Link Road, traffic re-routes from the B1122 East and B1122 West approaches, resulting in maximum decreases of -210 vehicles per hour from 07:00-08:00 and -300 vehicles per hour from 17:00-18:00.

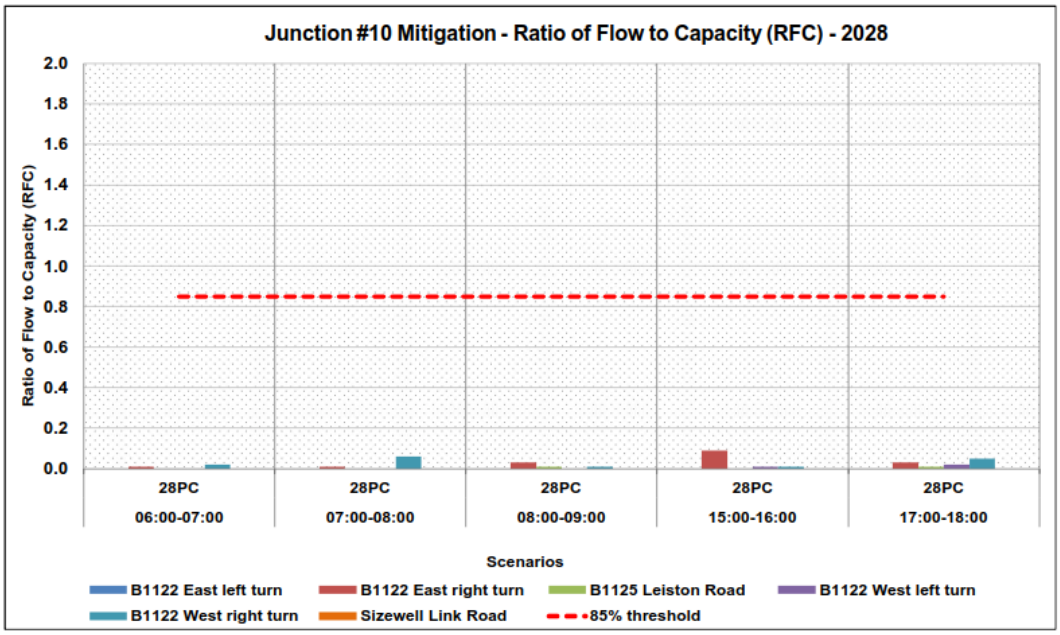
A.7.24. Conversely to a decrease in flows on the B1122 in both directions in the Peak Construction scenario, small increases in traffic in comparison to the 2028 Reference Case scenario are recorded on the northern B1125 arm

in all modelled hours (+20-40 vehicles per hour) and large increase from the new southern arm, linking the junction to the Sizewell Link Road from 15:00-16:00 and 17:00-18:00 (+200-220 vehicles per hour).

A.7.25. Despite changes in traffic demand between the 2028 Reference Case and Peak Construction scenarios, flows remain relatively low with a maximum of 400 vehicles across all arms in a single hourly period (from 15:00-16:00).

A.7.26. RFC modelling results for the 2028 Peak Construction scenario, split by each modelled hourly period, are illustrated in **Plate 9.28**.

Plate 9.28 – B1122 / B1125 junction 2028 Peak Construction RFC Results



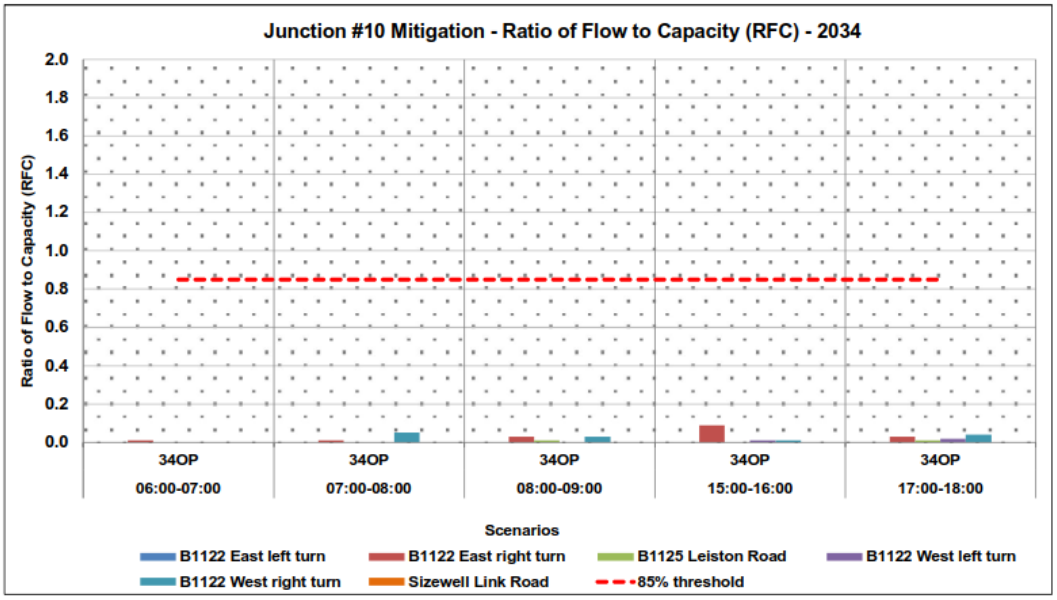
A.7.27. The relatively low traffic demand is reflected by the RFC values which record the junction to be operating well below capacity in the 2028 Early Years scenario.

A.7.28. The proposed mitigation measures, with the inclusion of the Sizewell Link Road to the south, results in changes in entry demand when comparing 2034 Reference Case and Operational Phase scenarios. A maximum reduction in flow on the B1122 west of -220 vehicles per hour is recorded from 07:00-08:00 and a reduction of -260 vehicles per hour is seen on the B1122 east Arm from 15:00-16:00.

A.7.29. Increases in flow are recorded from the new southern arm of the junction in the 2034 Operational Phase in comparison to the 2034 Reference Case with a maximum increase of +120 vehicles per hour from 15:00-16:00.

A.7.30. The RFC modelling results for the 2034 Operational Phase scenario, split by each modelled hourly period, are illustrated in **Plate 9.29**.

Plate 9.29 – B1122 / B1125 junction 2028 Operational Phase RFC Results



A.7.31. 2034 Operational Phase model results with mitigation measures in place indicates that as in the 2034 Reference Case, all arms will continue to operate below capacity.

g) Overview

A.7.32. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.7**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.7: B1122 / B1125 RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.06	0.12	0.22	0.13	0.02	0.13	0.01
07:00-08:00	0.22	0.24	0.44	0.25	0.06	0.27	0.05
08:00-09:00	0.16	0.26	0.28	0.27	0.03	0.19	0.03
15:00-16:00	0.22	0.25	0.30	0.26	0.09	0.27	0.09
17:00-18:00	0.13	0.29	0.50	0.29	0.05	0.18	0.04

A.7.33. Please note that **Table 9.7** combines results from the current three-arm T-Junction Layout (represented by the Base, Reference Case and 2023 Early Years scenarios) and the four-arm staggered crossroads layout (represented by the 2028 Peak Construction and 2034 Operational Phase scenarios). In each case the highest RFC value recorded for that modelled hour for each modelled scenario is used to populate **Table 9.7**.

A.7.34. The modelling results show that the junction operates with good reserve capacity during all modelled hours, with RFCs decreasing in the 2028 Peak Construction and 2034 Operational Phase scenarios once mitigation measures are in place. Analysis of the reported queues and delays in these scenarios shows that the junction would still operate without significant queuing or delays.

A.7.35. Overall there is a decrease in traffic demand at junction 10 with Sizewell mitigation measures in place meaning that there is no impact from Sizewell C on overall junction performance. In all cases the junction, both in the existing three-arm T-Junction layout and four-arm staggered crossroads layout, is predicted to operate below capacity.

A.8. Junction 15 – A12 Slip Road / Wickham Market P&R (new T-junction)

a) Context

A.8.1. Junction 15 is proposed to be located on the A12 eastbound on-slip where the B1116 meets the A12 near Wickham Market. The on-slip is subject to the national speed limit and is currently two-way at the western end to accommodate a minor arm (access to Whin Belt). East of the minor arm, the slip road becomes one-way as it merges with the A12 eastbound carriageway. The proposed junction is planned to accommodate access to the Wickham Market Park and Ride site in the form of a T-junction with the A12 slip road as the minor arm and the site access forming the minor arm just west of the existing track.

A.8.2. The proposed location is approximately 12-miles south-west of the Sizewell C site. The A12 eastbound slip road runs east to west and is proposed to be joined by the northern minor arm (P&R site access) just west of where the current access track is located. The existing track is planned to be diverted to join the P&R access road so that a single T-junction is present on the on-slip. The new junction is proposed to facilitate all movements with the exception of the right turn into the minor arm as the slip road will be one-way to the east of the T-junction as per the current layout. A proposed layout drawing is present in **Southern Park and Ride Plans** (Doc Ref. 2.7).

b) Calibration Summary

A.8.3. As no junction currently exists in this location, it has not been possible to build a base year model and compare its operation to observations to provide an indication of how representative the model is likely to be. Any assumptions made during the modelling will therefore endeavour to represent a worst-case with the intention of producing a robust assessment.

A.8.4. Current traffic flows eastbound on the slip road range from 40-130 vehicles per hour in the morning peak period and 120-140 vehicles per hour in the evening peak period. Only 1 vehicle was observed travelling westbound on the slip road from 15:00-16:00.

c) Early Years (2023)

i. Demand impact

A.8.5. The 2023 Reference Case scenario traffic flows show no predicted increases in westbound flows on the slip road (relative to the base scenario) across all time periods. A modest increase of 20-50 vehicles per

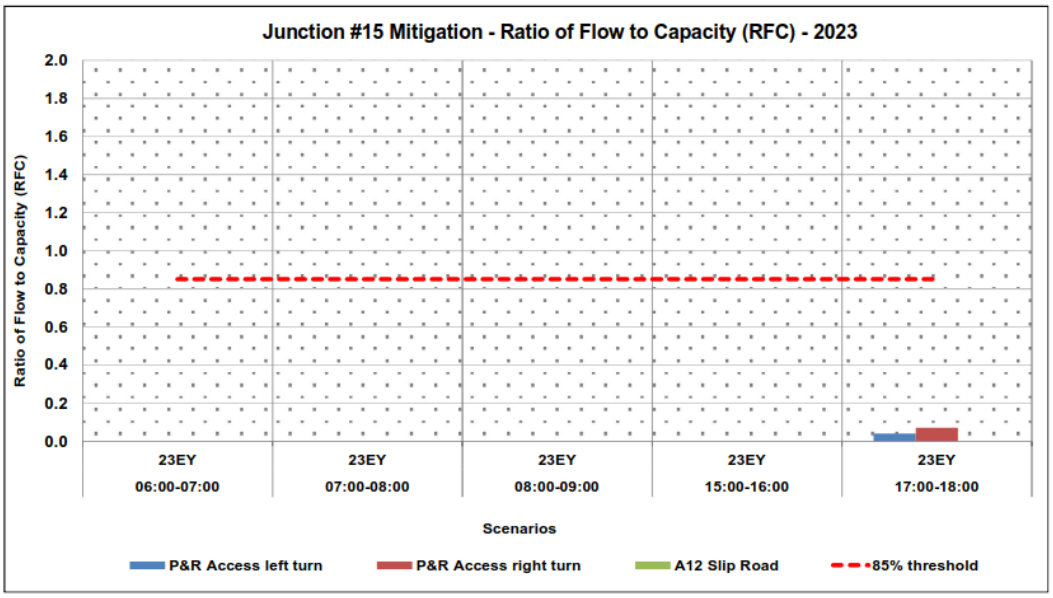
hour (AM) and 50-90 vehicles per hour (PM) travelling eastbound on the slip road is expected relative to the base scenario. The Park and Ride access will not exist without the Sizewell C; therefore, junction modelling has not been undertaken for the 2023 Reference Case scenario.

A.8.6. The Early Years scenario is predicted to see no increase in traffic on the slip road travelling westbound. Travelling eastbound, there is predicted to be an increase of 20-100 vehicles per hour due to construction workers accessing the site in the morning (peak demand is at 07:00-08:00 and 08:00-09:00) and 10-20 vehicles per hour in the evening. The majority of construction workers leaving the Park and Ride site from the proposed minor arm do so from 17:00-18:00 (60 vehicles per hour).

ii. Results analysis

A.8.7. The RFC modelling results for the Early Years (EY) scenario, split by each modelled hourly period, are illustrated in **Plate 9.30**.

Plate 9.30 – A12 Slip Road / Wickham Market P&R Access - 2023 Early Years RFC Results



A.8.8. **Plate 9.30** shows that the junction is predicted to operate within capacity during all modelled hours in the 2023 Reference Case scenario as no opposing turning movements are present in this scenario (P&R access is not present). The Reference Case RFC is therefore zero.

A.8.9. The Early Years scenario RFC results are very similar to the 2023 Reference Case with the largest difference being +0.07 form 17:00-18:00.

The maximum RFC in the Early Years scenario is recorded as 0.07 for the Wickham Market P&R site exit right turn.

A.8.10. The results for both 2023 scenarios show that the junction would be operating within capacity with and without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is negligible.

d) Peak Construction (2028)

i. Demand impact

A.8.11. The 2028 Reference Case scenario traffic flows show no predicted increases in westbound flows on the slip road (relative to the base scenario) across all time periods. A modest increase of 20-50 vehicles per hour (AM) and 60-100 vehicles per hour (PM) travelling eastbound on the slip road is expected relative to the base scenario. The Park and Ride access will not exist without the Sizewell C; therefore, junction modelling has not been undertaken for the 2028 Reference Case scenario.

A.8.12. The Peak Construction scenario is predicted to increase the level of traffic flows entering the P&R site in the morning and leaving in the evening in line with the Sizewell C construction site shift patterns.

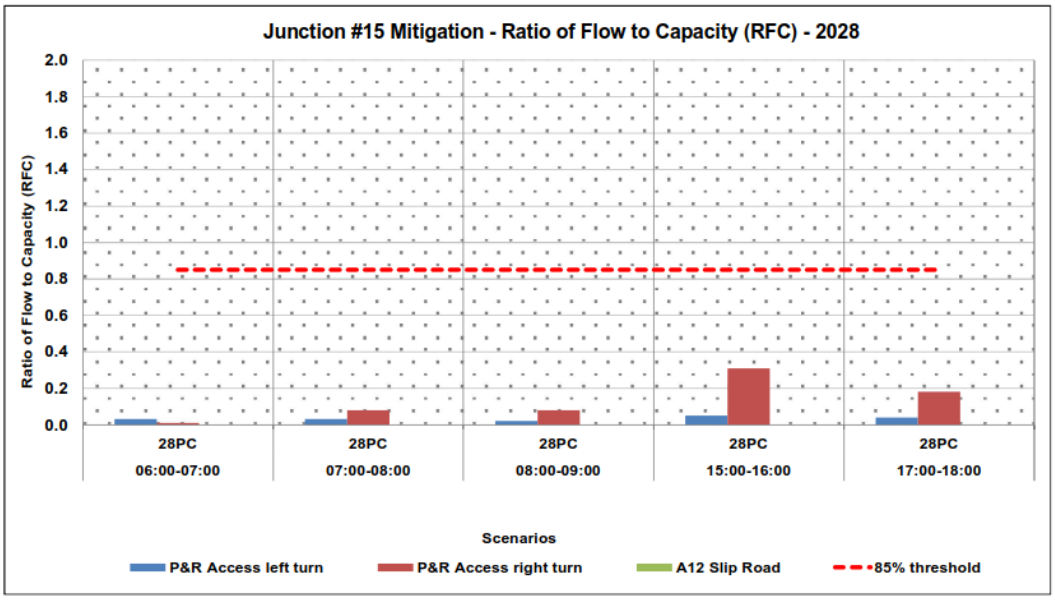
A.8.13. The A12 slip road eastbound is predicted to experience a large increase in flows accessing the P&R of +350 vehicles per hour from 06:00-07:00, + 230 vehicles per hour from 07:00-08:00 and +70 vehicles per hour from 08:00-09:00 with +20-30 vehicles per hour in the PM hours.

A.8.14. The A12 slip road westbound is predicted to experience a large increase in flows leaving the P&R of +175 vehicles per hour from 15:00-16:00 and + 100 vehicles per hour from 17:00-18:00 with +20-50 vehicles per hour in the AM hours.

ii. Results analysis

A.8.15. The RFC modelling results for the Peak Construction (PC) scenario, split by each modelled hourly period, are illustrated in **Plate 9.31**.

Plate 9.31 – A12 Slip Road / Wickham Market P&R Access - 2028 Peak Construction RFC Results



A.8.16. **Plate 9.31** shows that the junction is predicted to operate within capacity during all modelled hours in the 2028 Reference Case scenario as no opposing turning movements are present in this scenario (P&R access is not present). The Reference Case RFC is therefore zero.

A.8.17. The Peak Construction scenario RFC results are similar to the 2028 Reference Case with the largest difference being +0.31 from 15:00-16:00 when the majority of Sizewell C construction workers leave the P&R site. The maximum RFC in the Early Years scenario is recorded as 0.31 for the Wickham Market P&R site exit right turn.

A.8.18. The results for both 2028 scenarios show that the junction would be operating within capacity with and without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is negligible.

e) Operational Phase (2034)

i. Demand impact

A.8.19. The 2034 Reference Case scenario traffic flows show no predicted increase in westbound flows on the A12 slip road (relative to the base scenario) across all time periods. An increase of 20-70 vehicles per hour (AM) and 70-120 vehicles per hour (PM) travelling eastbound on the slip road is expected relative to the base scenario. The Park and Ride access

will not exist without the Sizewell C; therefore, junction modelling has not been undertaken for the 2034 Reference Case scenario.

A.8.20. The Operational Phase scenario is predicted to see no increase in traffic relative to the 2034 Reference Case as the Sizewell C construction is due to be complete by 2034 and therefore Sizewell C construction workers would no longer be expected to use the P&R site.

ii. Results analysis

A.8.21. Wickham Market Park and Ride site is due to be closed by 2034 and therefore no opposing flows are expected on the A12 Slip Road. Therefore, all RFC results are zeros in the 2034 Reference Case and Operational Phase scenarios.

f) Mitigation analysis

A.8.22. As little short-term impact and no long-term impact is predicted at this junction, wider mitigation is not proposed. The proposed Wickham Market Park and Ride access T-junction is deemed to be sufficient to cater for the predicted level of demand.

g) Overview

A.8.23. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.8**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.8: A12 Slip Road / Wickham Market P&R Access RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00		0.00	0.00	0.00	0.03	0.00	0.00
07:00-08:00		0.00	0.00	0.00	0.08	0.00	0.00
08:00-09:00		0.00	0.00	0.00	0.08	0.00	0.00
15:00-16:00		0.00	0.00	0.00	0.31	0.00	0.00
17:00-18:00		0.00	0.07	0.00	0.18	0.00	0.00

A.8.24. The modelling results show that the junction operates with good reserve capacity in all scenarios and time periods. Sizewell C is predicted to have minor impact at this location with the largest impact in RFC terms of +0.31 likely to be experienced in 2028 when the peak construction work force is

present. The maximum RFC is expected to be 0.31 in Peak Construction scenario which is within capacity. Increases in queues and delay is predicted to be negligible.

A.9. Junction 29 – A12 / New Road / Woodbridge Road

a) Context

A.9.1. Junction 29 is a staggered crossroads, located on a 60mph stretch of the A12, east of Boulge and located approximately 17 miles south-west of the Sizewell C site. The A12 runs north to south; the eastern minor arm (New Road) meets the A12 approximately 60m south of the western minor arm (Woodbridge Road). It has merge and diverge lanes for all turning movements from and to the A12. Both major arm right turning movements are accommodated by generous right-turn lanes (100m+), with space for approximately 16 right-turning vehicles northbound and 38 right-turning vehicles southbound without blocking back. A satellite image of the existing junction layout is shown in **Plate 9.32**.

Plate 9.32 – Existing A12 / New Road / Woodbridge Road Layout



b) Calibration Summary

A.9.2. Observed queue data showed that there was negligible queueing on the A12 in both directions with the exception of 08:00-09:00 when queues of up to 4 vehicles were observed on the A12 southbound right-turn. This queue is easily accommodated within the 200m right turn lane. Short queues of 1-3 vehicles were also observed on the minor arms in most modelled hours but were quick to dissipate.

A.9.3. The junction model typically results in queues slightly lower than those observed but is consistent with the observed data as both show little to no queues on all arms. The model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

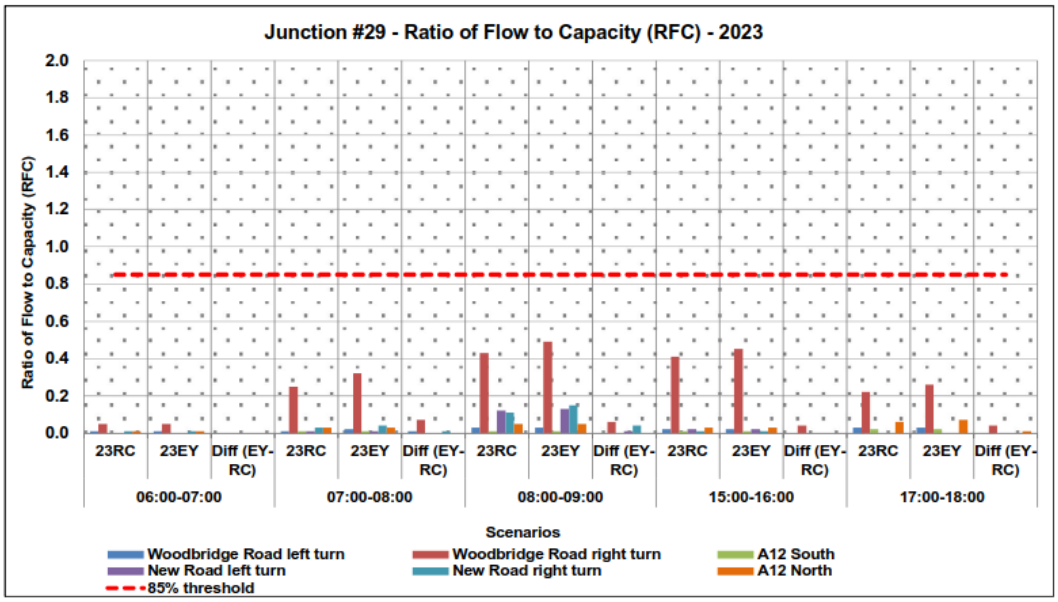
A.9.4. The 2023 Reference Case scenario traffic flows show negligible increases in traffic compared to the base scenario on the minor arms (an increase of less than 10 vehicles per hour across all modelled periods). The A12 shows a larger increase in flows with growth of 50-220 vehicles per hour in each direction.

A.9.5. The Early Years scenario shows no increase in traffic on the minor arms compared to the 2023 Reference Case scenario. The A12 northern arm shows a moderate increase of 15-40 vehicles per hour with the exception of the 17:00-18:00 period which has a predicted increase of 90 vehicles per hour (trips leaving SZC and the A12 construction sites). The A12 southern arm sees larger increases in the morning periods (100-200 vehicles per hour) due to trips using the A12 northbound to access SZC and the A12 construction sites.

ii. Results analysis

A.9.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.33**. The difference is shown as EY-RC.

Plate 9.33 – A12 / New Road / Woodbridge Road 2023 Early Years RFC Results



A.9.7. **Plate 9.33** shows that the junction is predicted to operate within capacity during all modelled hours in the 2023 Reference Case scenario. The RFC peaks from 08:00-09:00 and 15:00-16:00 with both periods showing the western minor arm (Woodbridge Road) reaching an RFC of 0.43.

A.9.8. The Early Years scenario RFC results are very similar to the 2023 Reference Case with the largest difference being +0.07 from 07:00-08:00 with the maximum RFC in the Early Years scenario being recorded as 0.49.

A.9.9. The results for both 2023 scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is modest.

d) Peak Construction (2028)

i. Demand impact

A.9.10. The 2028 Reference Case scenario traffic flows generally show small increases in entry demand compared to the base flows on both minor arms (no more than 10 vehicles per hour). The A12 northbound and southbound both see increases in flows of 60-200 vehicles per hour.

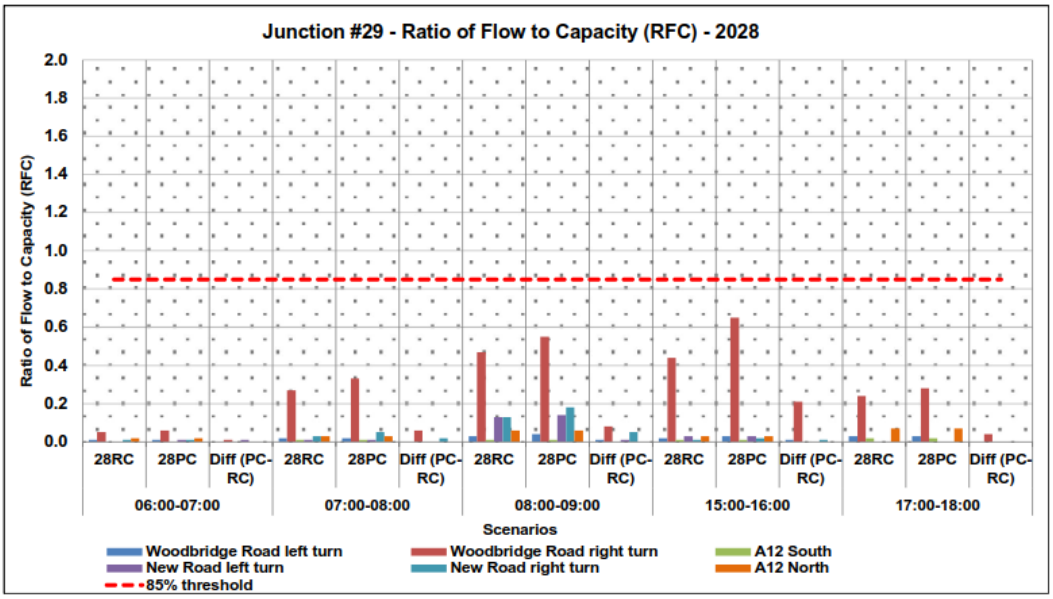
A.9.11. The Peak Construction scenario is not predicted to add much traffic to the minor arms. The A12 northbound is predicted to experience a large increase in flows (+150-250 vehicles per hour) during the morning

periods, particularly from 06:00-07:00 due to SZC shift patterns. The A12 southbound is predicted to experience a large increase in flows (+80-180 vehicles per hour) during the PM periods, particularly from 15:00-14:00 as Sizewell construction workers leave the Wickham Market Park and Ride site.

ii. Results analysis

A.9.12. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction scenarios (PC), split by each modelled hourly period, are illustrated in **Plate 9.34**. The difference is shown as PC-RC.

Plate 9.34 – A12 / New Road / Woodbridge Road 2028 Peak Construction RFC Results



A.9.13. **Plate 9.34** shows that the junction is predicted to operate within capacity during all modelled hours in the 2028 Reference Case scenario. The RFC reaches its highest point (0.4) from 08:00-09:00 and 15:00-16:00 on the western minor arm (Woodbridge Road).

A.9.14. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, with generally small increases in RFC (up to +0.08) with the exception of the 15:00-16:00 period when the RFC on the western minor arm (Woodbridge Road) is predicted to increase by +0.21 from 0.44 to 0.65. This is predicted to increase delays on Woodbridge Road from 40 seconds per vehicle to 90 seconds per vehicle. In terms of queues, the level of demand on Woodbridge Road is expected to be low so queues are not anticipated to build and are predicted to remain at less than 2 vehicles during all periods.

A.9.15. The results for both scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Peak Construction scenario is modest.

e) Operational Phase (2034)

i. Demand impact

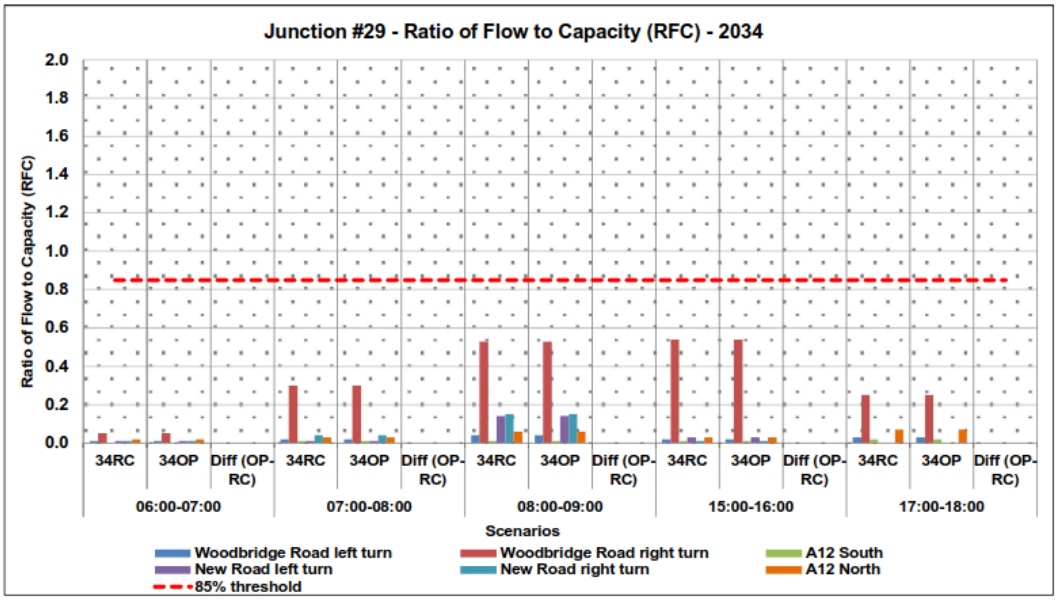
A.9.16. The 2034 Reference Case scenario traffic flows show a negligible increase in flow on the minor arms (+13 vehicles per hour), relative to observed base year traffic flows. On the A12, demand is predicted to increase in the region of 200 vehicles per hour in each direction for each of the modelled periods.

A.9.17. The Operational Phase scenario traffic flows are very similar to the 2034 Reference Case, with negligible changes across all approaches and modelled hourly periods.

ii. Results analysis

A.9.18. The RFC modelling results for the 2034 Reference Case and Operational Phase scenarios, split by each modelled hourly period, are illustrated in **Plate 9.35**. The difference is shown as PC-RC.

Plate 9.35 – A12 / New Road / Woodbridge Road 2034 Operational Phase RFC Results



A.9.19. **Plate 9.35** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC recorded as 0.54 on the western minor arm (Woodbridge Road) from 15:00-16:00.

A.9.20. The Operational Phase scenario RFC results are the same as those for the 2034 Reference Case scenario, which is intuitive given the negligible change in entry demand between the two scenarios.

f) Mitigation analysis

A.9.21. As minimal short-term impact and no long-term impact is predicted at this junction, mitigation is not proposed.

g) Overview

A.9.22. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.9**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.9: A12 / New Road / Woodbridge Road Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.04	0.05	0.05	0.05	0.06	0.05	0.05
07:00-08:00	0.19	0.25	0.32	0.27	0.33	0.30	0.30
08:00-09:00	0.29	0.43	0.49	0.47	0.55	0.53	0.53
15:00-16:00	0.29	0.41	0.45	0.44	0.65	0.54	0.54
17:00-18:00	0.15	0.22	0.26	0.24	0.28	0.25	0.25

A.9.23. The modelling results show that the junction operates with good reserve capacity in all scenarios and across all time periods. Sizewell C is predicted to have little impact at this location with the largest impact likely to be experienced during peak construction from 15:00-16:00 when the maximum RFC is expected to increase from 0.44 to 0.65 which is within capacity. Increase is queues and delay is predicted to be minimal as minor arm demand is low.

A.10. Junction 30 – A12/ Button's Road/ Glemham Hall Crossroads

a) Context

A.10.1. Junction 30 is a crossroads junction between the A12, Button's Road (signposted Parham) and the main access to Glemham Hall located approximately 8 miles to the south west of Sizewell C. The A12 is the priority road at the crossroads, and is a single carriageway road that is subject to a 50mph speed limit at the junction. Button's Road is also a single carriageway road, but is subject to the national speed limit of 60mph, except for in the immediate vicinity of the A12 junction. The access to Glemham Hall is a large driveway access serving the stately home and grounds. There is no street lighting at the junction.

A.10.2. A satellite image of the existing junction layout is shown in **Plate 9.36**.

Plate 9.36 – Existing A12 / Button's Road / Glemham Hall Crossroads



b) Calibration Summary

A.10.3. Observed queue data showed that there were small or negligible queues on all arms during the modelled hours. The existing situation junction model shows queues that are slightly lower than those observed, with negligible queues predicted on all arms in all time periods. It is, however, considered that the difference in observed and modelled queue lengths is

not material and that the model is therefore representative of existing conditions.

c) Early Years (2023)

i. Demand impact

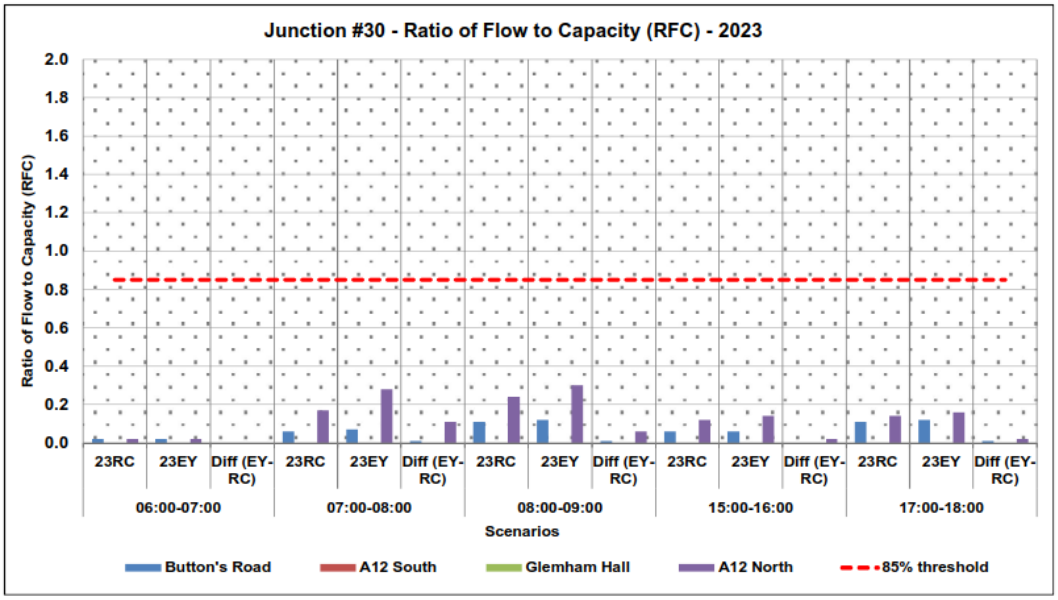
A.10.4. The 2023 Reference Case scenario traffic flows, relative to the observed base year, show large increases in flow on the A12 north and A12 south (up to +200 vehicles per hour), with negligible changes predicted in flows to/from both Button's Road and the Glemham Hall access. The flow increases are larger on the A12 south in the morning periods (06:00-07:00, 07:00-08:00, 08:00-09:00), reasonably balanced in the 15:00-16:00 period and predominantly from the A12 north between 17:00-18:00.

A.10.5. For the Early Years scenario, the predicted traffic flows relative to the 2028 Reference Case show further large increases on the A12 (up to +230 vehicles per hour), but no change on the other two arms. The flow increases show a similar directional pattern to those in the 2023 Reference Case, with the majority of the increase being northbound in the morning periods (06:00-07:00, 07:00-08:00, 08:00-09:00) and southbound in the afternoon periods (15:00-16:00, 17:00-18:00).

ii. Results analysis

A.10.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.37**. The difference is shown as EY-RC.

Plate 9.37 – A12 / Button's Road Junction 2023 Early Years RFC Results



A.10.7. **Plate 9.37** shows that the junction is predicted to operate with ample spare capacity in the 2023 Reference Case, with the highest RFC (0.24) being predicted on the right turn from the A12 southbound to Button's Road during the 0800-0900 model period – this is as a result of the increase in traffic both directions on the A12 leaving fewer and smaller gaps for right turning vehicles.

A.10.8. The Early Years scenario RFC results show a small increase in RFC (at most 0.11 in the 07:00-09:00 period) compared to the 2023 Reference Case, however the junction will continue to operate with ample spare capacity. It is therefore considered that the Sizewell C traffic will have no impact on the operation of this junction during the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

A.10.9. The 2028 Reference Case scenario traffic flows, relative to the base year flows, show moderate increases on the A12 north and A12 south, (+60-250 vehicles per hour) however the flow increase is less tidal than the increase from base to 2023 Reference Case flows. Negligible flow increases are predicted on the Button's Road and Glemham approaches.

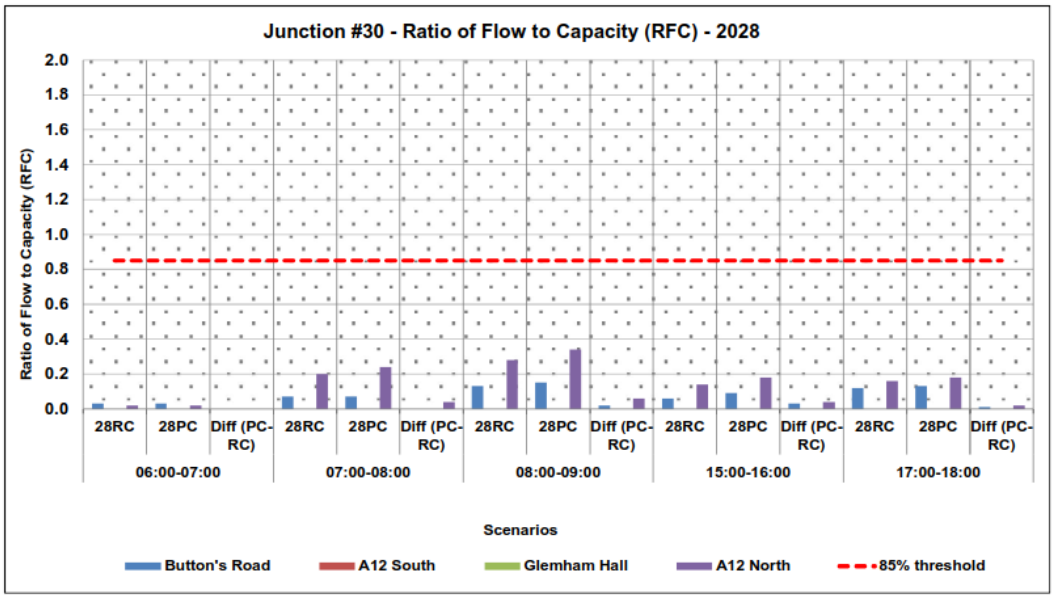
A.10.10. The Peak Construction scenario, relative to the 2028 Reference Case, shows moderate increases in flow on the A12 in both directions (20-140 vehicles per hour). The tidal direction of these flow increases is on the

A12 south in the morning peaks (06:00-07:00, 07:00-08:00, 08:00-09:00) and on the A12 north in the afternoon peaks (15:00-16:00, 17:00-18:00). There is only a negligible change in the number of vehicles on Button's Road and Glemham Hall.

ii. Results analysis

A.10.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.38**. The difference is shown as PC-RC.

Plate 9.38 – A12/ Button's Road Junction 2034 Peak Construction RFC Results



A.10.12. **Plate 9.38** shows that the junction is predicted to operate with ample spare capacity in the 2028 Reference Case, with no RFC predicted to be higher than 0.28, with the highest RFCs being predicted on the A12 southbound right turn in the 07:00-08:00 and 08:00-09:00 model hours.

A.10.13. The Peak Construction scenario RFC results predict that there would be a small increase in RFC on the A12 southbound and on Button's Road. The model predicts that the maximum increase would be 0.06 on the A12 southbound right turn, increasing the RFC to a maximum of 0.34. The model therefore predicts that the Sizewell C will have a negligible impact on the operation of the A12/ Button's Road/ Glemham Hall junction during the Peak Construction phase.

e) Operational Phase (2034)

i. Demand impact

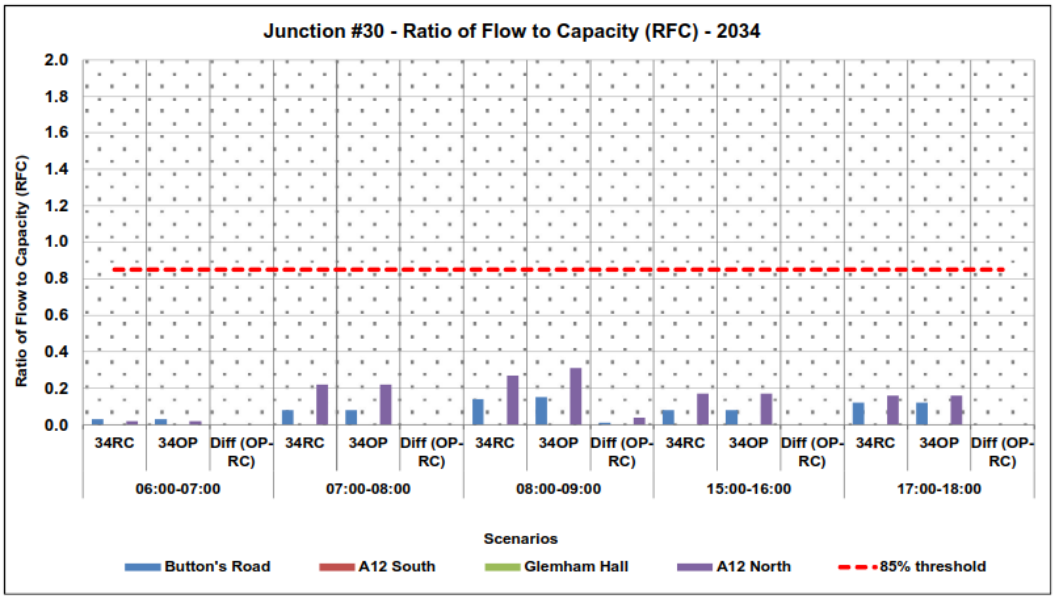
A.10.14. The 2034 Reference Case scenario traffic flows, relative to the base year flows, show large increases in flow on the A12 north and A12 south in most model time periods (+80-240 vehicles per hour). There is predicted to be a negligible change in traffic flow on Button's Road and Glemham Hall.

A.10.15. The Operational Phase scenario traffic flows show negligible change compared to the 2034 Reference Case in the 06:00-07:00, 07:00-08:00, 15:00-16:00 and 17:00-18:00 model hours, with a small increase (+20-70 vehicles per hour) in flow being predicted in both directions on the A12 in the 08:00-09:00 model hour.

ii. Results analysis

A.10.16. The RFC modelling results for the 2034 Reference Case and Operational Phase scenarios, split by each modelled hourly period, are illustrated in **Plate 9.39**. The difference is shown as OP-RC.

Plate 9.39 – A12/ Button's Road Junction 2034 Operational Phase RFC Results



A.10.17. **Plate 9.39** shows that the A12/ Button's Road/ Glemham Hall junction is predicted to operate with ample spare capacity during all modelled hours, with a maximum RFC of 0.27 being predicted on the A12 southbound during the 08:00-09:00 model hour.

A.10.18. The Operational Phase scenario RFC results are very similar to those for the 2034 Reference Case scenario, with negligible changes in RFC predicted in all modelled hours. Any increase (0.04, on the A12 southbound during the 08:00-09:00) is small, meaning that the Sizewell C traffic is predicted to have a negligible impact on the junction operation once the scheme becomes operational.

f) Mitigation analysis

A.10.19. The junction modelling predicts that Sizewell C would have a negligible impact on the operation of the A12 / Button's Road/ Glemham Hall junction, with ample spare capacity predicted in all modelled peak hours and across all development scenarios. Mitigation is therefore not proposed at this location.

g) Overview

A.10.20. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.10**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.10: A12/ Button's Road Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.02	0.02	0.02	0.03	0.03	0.03	0.03
07:00-08:00	0.13	0.17	0.28	0.20	0.24	0.22	0.22
08:00-09:00	0.16	0.24	0.30	0.28	0.34	0.27	0.31
15:00-16:00	0.09	0.12	0.14	0.14	0.18	0.17	0.17
17:00-18:00	0.10	0.14	0.16	0.16	0.18	0.16	0.16

A.10.21. The Junctions 9 model predicts that the Sizewell C traffic has a negligible impact on RFCs at the A12/ Button's Road/ Glemham Hall junction, with flow increases predicted on the A12 northbound and southbound only. While RFCs are predicted to increase slightly, these are significantly below the 0.85 capacity threshold, and the junction is predicted to operate satisfactorily in all Sizewell C scenarios.

A.11. Junction 31 – A12 / A145

a) Context

A.11.1. Junction 31 is a single-lane dualled T-junction, located on a 40mph stretch of the A12, just north of Blythburgh approximately 11 miles north of the Sizewell C site. The A12 runs in a north to south direction and is joined by the western minor arm (A145) on an external bend. The major arm right turning movement is accommodated by a generous right-turn lane (approx. 90m), with space for approximately 15 right-turning vehicles on the A12 southbound without blocking back. A satellite image of the existing junction layout is shown in **Plate 9.40**.

Plate 9.40 – Existing A12 / A145 Junction Layout



b) Calibration Summary

A.11.2. Observed queue data shows that there is slight queueing on the minor arm with a maximum recorded queue of up to 4 vehicles in length across all time periods. The right turn queue is consistently slightly longer than the left turn queue in the morning periods with the opposite being true in the evening periods.

A.11.3. The A12 southbound right turn maximum queue was observed to be up to 3 vehicles in length across all time periods. This queue is comfortably accommodated within the 90m right turn lane.

A.11.4. The junction model typically results in queues slightly lower than those observed but is consistent with the observed data as both show little to no queues on all approaches. The model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

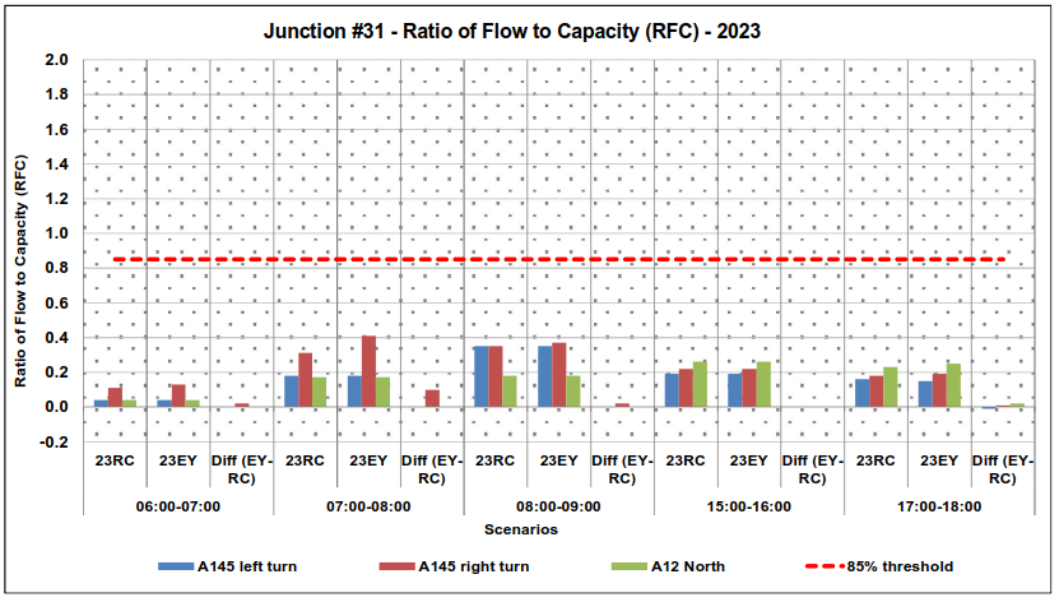
A.11.5. The 2023 Reference Case scenario traffic flows show small increases in traffic on the A12 (+15-50 vehicles per hour relative to the base scenario) across all time periods with the exception of the A12 northbound from 17:00-18:00 which is predicted to see an increase of 100 vehicles per hour.

A.11.6. The Early Years scenario shows a small increase in traffic on the minor arm compared to the 2023 Reference Case scenario. The A12 southbound shows an increase of 70-170 vehicles per hour in the early morning hours (06:00-07:00 and 07:00-08:00) and an increase of 140 vehicles per hour on the A12 northbound from 17:00-18:00. This corresponds with shift start/end times at SZC and the A12 construction sites.

ii. Results analysis

A.11.7. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.41**. The difference is shown as EY-RC.

Plate 9.41 – A12 / A145 2023 Early Years RFC Results



A.11.8. **Plate 9.41** shows that the junction is predicted to operate within capacity during all modelled hours in the 2023 Reference Case scenario. The Reference Case RFC peaks from 08:00-09:00 with the minor arm (A145) reaching a maximum RFC of 0.35.

A.11.9. The Early Years scenario RFC results are very similar to the 2023 Reference Case with the largest difference being +0.10 from 07:00-08:00. The maximum RFC in the Early Years scenario is recorded as 0.41 for the minor arm right.

A.11.10. The results for both 2023 scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is small.

d) Peak Construction (2028)

i. Demand impact

A.11.11. The 2028 Reference Case scenario traffic flows generally show minor changes in entry demand compared to the base flows on the minor arm (no more than +10 vehicles per hour). The A12 is predicted to experience small increases in flows (+25-80 vehicles per hour), with the exception of the A12 South from 17:00-18:00, which is predicted to see a larger increase (+125 vehicles per hour).

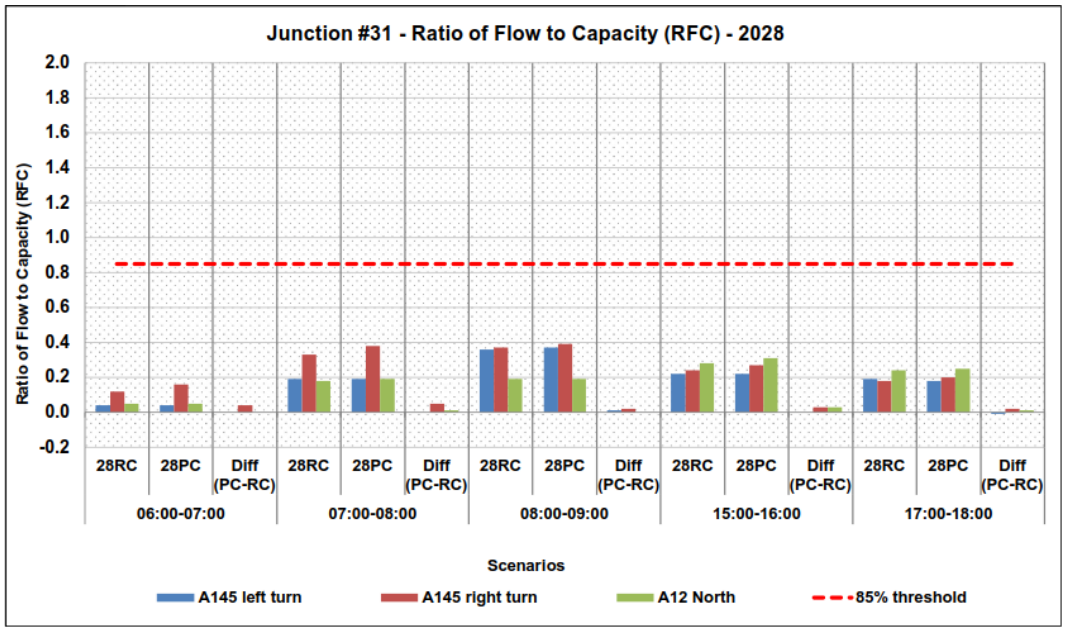
A.11.12. The Peak Construction scenario is not predicted to add much traffic to the minor arm, relative to the 2028 Reference Case. The A12 North is predicted to experience a large increase in flows (+130-180 vehicles per

hour) from 06:00-08:00, when Sizewell construction workers are likely to be heading south to the Darsham Park & Ride site. The A12 South is predicted to experience a similar magnitude of increase in the afternoon modelled hours (+90-180 vehicles per hour), due to SZC construction workers leaving Darsham Park & Ride.

ii. Results analysis

A.11.13. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.42**. The difference is shown as PC-RC.

Plate 9.42 – A12 / A145 2028 Peak Construction RFC Results



A.11.14. **Plate 9.42** shows that the junction is predicted to operate within capacity during all modelled hours in the 2028 Reference Case scenario. The RFC reaches its highest point (0.37) from 08:00-09:00 on the A145 right turning movement.

A.11.15. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, with generally small increases in RFC (up to +0.05). The maximum RFC in the Peak Construction scenario is predicted to be 0.39 on the minor arm.

A.11.16. The results for both scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Peak Construction scenario is small.

e) Operational Phase (2034)

i. Demand impact

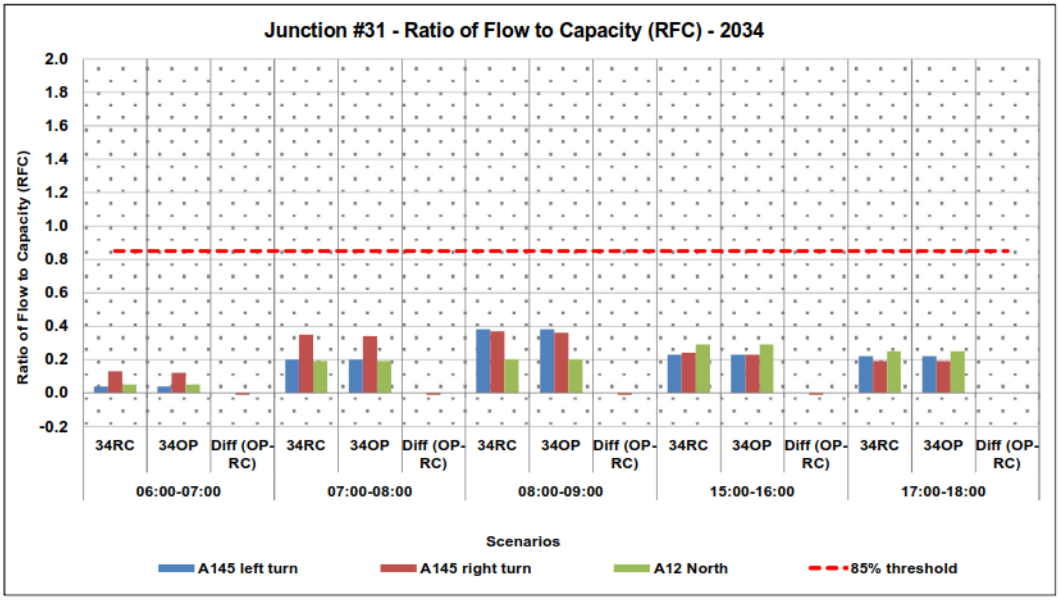
A.11.17. The 2034 Reference Case scenario traffic flows show a negligible increase in flow on the minor arm (up to +16 vehicles per hour), relative to observed base year traffic flows. On the A12, demand is predicted to increase from 30-100 vehicles per hour in each direction for each of the modelled periods compared with the base scenario.

A.11.18. The Operational Phase scenario traffic flows are very similar to the 2034 Reference Case, with negligible changes across all arms and modelled hourly periods.

ii. Results analysis

A.11.19. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.43**. The difference is shown as OP-RC.

Plate 9.43 – A12 / A145 2034 Operational Phase RFC Results



A.11.20. **Plate 9.43** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC recorded as 0.38 on the minor arm from 08:00-09:00.

A.11.21. The Operational Phase scenario RFC results are the same as those for the 2034 Reference Case scenario, which is intuitive given the negligible change in entry demand between the two scenarios.

f) Mitigation analysis

A.11.22. As the short-term impact is negligible and no long-term impact is predicted at this junction, mitigation is not proposed.

g) Overview

A.11.23. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.11**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.11: A12 / A145 Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.10	0.11	0.13	0.12	0.16	0.13	0.12
07:00-08:00	0.32	0.31	0.41	0.33	0.38	0.35	0.34
08:00-09:00	0.35	0.35	0.37	0.37	0.39	0.38	0.38
15:00-16:00	0.28	0.26	0.26	0.28	0.31	0.29	0.29
17:00-18:00	0.24	0.23	0.25	0.24	0.25	0.25	0.25

A.11.24. The modelling results show that the junction operates with good reserve capacity in all scenarios and time periods. Sizewell C is predicted to have minimal impact at this location with some impact likely to be experienced in the Early Years scenario from 07:00-08:00 when the maximum RFC is expected to increase from 0.31 to 0.41 which is comfortably within capacity and likely to be imperceptible to users. Increase in queues and delay is predicted to be negligible at this location.

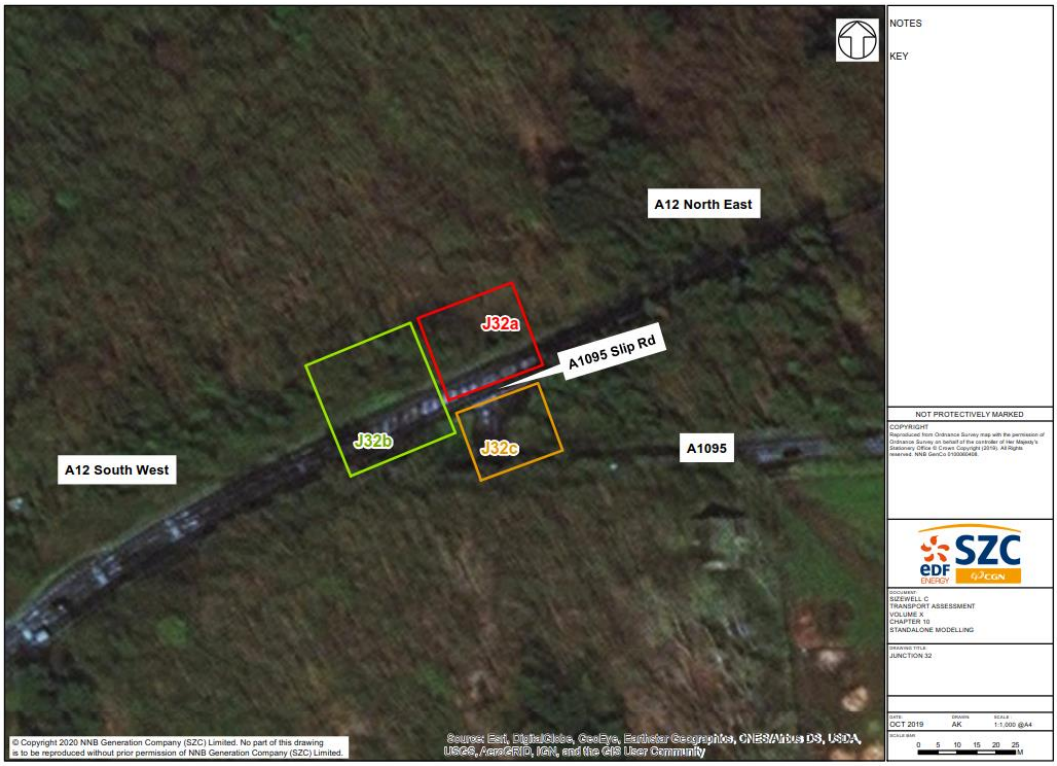
A.12. Junction 32 – A12 / A1095

a) Context

A.12.1. Junction 32 is a ghost island T-junction, located on a 40mph stretch of the A12, just north of Blythburgh and located approximately 11 miles north of the Sizewell C site. The A12 runs in a north-east to south-west direction and is joined by the eastern minor arm (A1095) on an internal bend. The major arm right turning movement is accommodated by a generous right-turn lane (approx. 120m), with space for approximately 20 right-turning vehicles on the A12 northbound without blocking back.

A.12.2. The junction itself is made up of 3 individual T-junctions. The three component T-junctions have been assessed within separate T-junction models to allow all three minor arm give-way lines to be assessed. A satellite image of the existing junction layout is shown in **Plate 9.44** along with annotation to demonstrate the naming convention used for each component part (a, b and c).

Plate 9.44 – Existing A12 / A1095 Road Layout



A.12.3. Vehicles left turning into the A1095 from the A12 North East approach are observed to use junction 32a to make this manoeuvre rather than junction 32b. The number of vehicles making this movement is observed to be low and is forecast to remain low as access from the north to the area served

by the A1095 is easier using Hills Road or the B1126. The same is true for the right turn from the A1095 onto the A12 northbound.

A.12.4. Vehicles from the south right turning into the A1095 are observed to make this manoeuvre using junction 32b rather than 32a. The right turning movement is more heavily trafficked than the left turn onto the A1095 as it provides the best route to the area east of the A12 (Southwold, Reydon, etc). The same is true for the reverse movement – the left turn from the A1095 to the A12 southbound.

A.12.5. As very few vehicles are observed using the A1095 slip between junction 32a and 32c, the models for these locations show extremely low RFCs. Across all modelled scenarios, junction 32a shows a maximum RFC of zero (the maximum opposed flow in any scenario is 6 vehicles per hour). Junction 32c shows a maximum RFC of 0.01 (the maximum opposed flow in any scenario is 6 vehicles per hour).

A.12.6. A full assessment of junction 32a and 32c has been conducted but is not presented in this report as the RFC results are extremely low due to the low flows. Almost all turning traffic using junction 32 uses 32b which therefore shows a more notable level of RFC, delay and queues and is the focus of the remainder of this **section A.12**.

b) Calibration Summary

A.12.7. Observed queue data shows that there is negligible queueing at junctions 32a and 32c whilst at 32b small queues are present on the minor arm (up to 3 vehicles) and on the major arm right turn (up to 2 vehicles).

A.12.8. The maximum queue at the A12 northbound right turn at 32b was observed to be from 0.3 and 2.4 vehicles in length across all time periods. This queue is comfortably accommodated within the 120m right turn lane.

A.12.9. The junction model typically results in queues slightly lower than those observed but is consistent with the observed data as both show little to no queues on all junction approaches. The model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

A.12.10. The 2023 Reference Case scenario traffic flows show small increases in traffic on the A12 (+10-40 vehicles per hour relative to the base scenario) across all time periods.

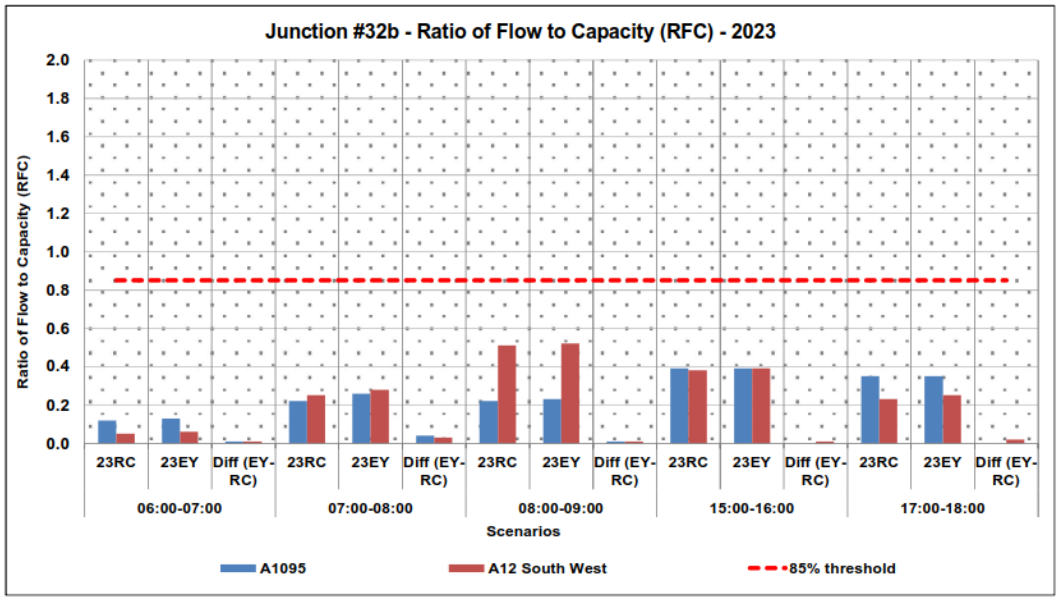
A.12.11. The Early Years scenario shows a small increase in traffic on the A1095 (+5-15 vehicles per hour) compared to the 2023 Reference Case scenario. The A12 southbound shows an increase of 60-160 vehicles per

hour in the early morning hours (06:00-07:00 and 07:00-08:00) and an increase of 90 vehicles per hour on the A12 northbound from 17:00-18:00. This corresponds with shift start/end times at SZC and the A12 construction sites.

ii. Results analysis

A.12.12. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.45**. The difference is shown as EY-RC.

Plate 9.45 – A12 / A1095 2023 Early Years RFC Results



A.12.13. **Plate 9.45** shows that the junction is predicted to operate within capacity during all modelled hours in the 2023 Reference Case scenario. The 2023 Reference Case RFC peaks from 08:00-09:00 with the major arm right turn from south to east reaching a maximum RFC of 0.51.

A.12.14. The Early Years scenario RFC results are very similar to the 2023 Reference Case with the largest difference being +0.04 from 07:00-08:00. The maximum RFC in the Early Years scenario is recorded as 0.52 for the major arm right turn from south to east.

A.12.15. The results for both 2023 scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is modest.

d) Peak Construction (2028)

i. Demand impact

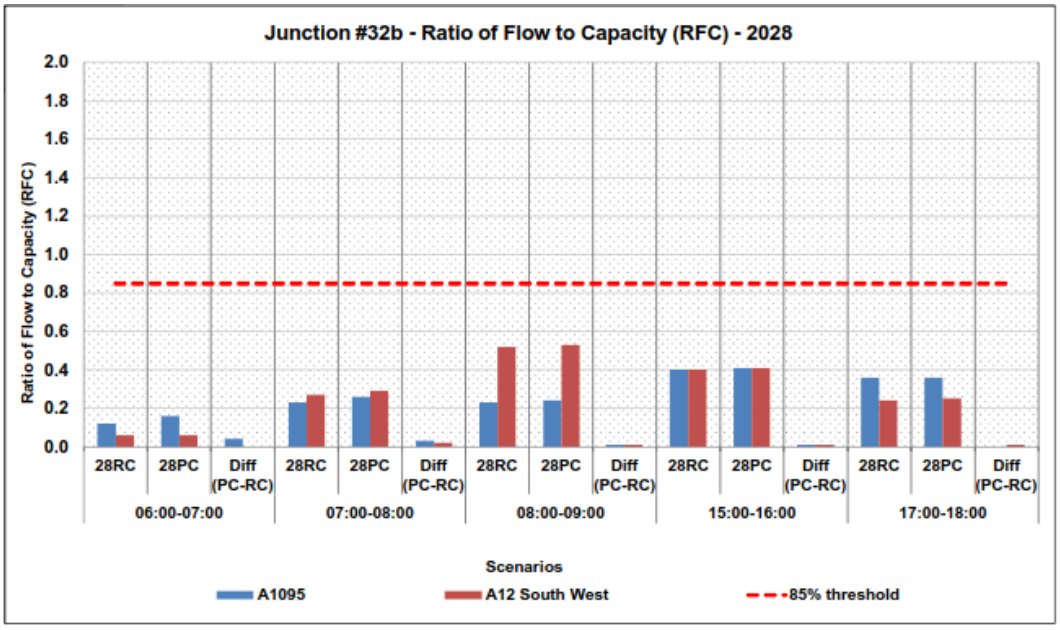
A.12.16. The 2028 Reference Case scenario traffic flows generally show minimal change in entry demand compared to the base flows on the minor arm (no more than +15 vehicles per hour). The A12 is predicted to experience a small increase in flows of 20-70 vehicles per hour across all periods.

A.12.17. The Peak Construction scenario is predicted to add minimal additional traffic to the minor arm (up to +10 vehicles per hour). The A12 North East is predicted to experience a large increase in flows (+120-170 vehicles per hour) from 06:00-08:00, particularly from 06:00-07:00 when Sizewell construction workers are likely to be heading south to the Darsham Park & Ride site. The A12 South is predicted to experience a large increase in flows (+70-200 vehicles per hour) from 15:00-16:00 and 17:00-18:00 due to SZC construction workers leaving Darsham Park and Ride, particularly from 15:00-16:00 due to SZC construction worker shift patterns.

ii. Results analysis

A.12.18. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.46**. The difference is shown as PC-RC.

Plate 9.46 – A12 / A1095 2028 Peak Construction RFC Results



A.12.19. **Plate 9.46** shows that the junction is predicted to operate within capacity during all modelled hours in the 2028 Reference Case scenario. The RFC

reaches its highest point (0.52) from 08:00-09:00 on the major arm right turn into the A1095.

A.12.20. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, with generally small increases in RFC (up to +0.04). The maximum RFC in the Peak Construction scenario is predicted to be 0.53 on the major arm right turn into the A1095.

A.12.21. The results for both scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Peak Construction scenario is small.

e) Operational Phase (2034)

i. Demand impact

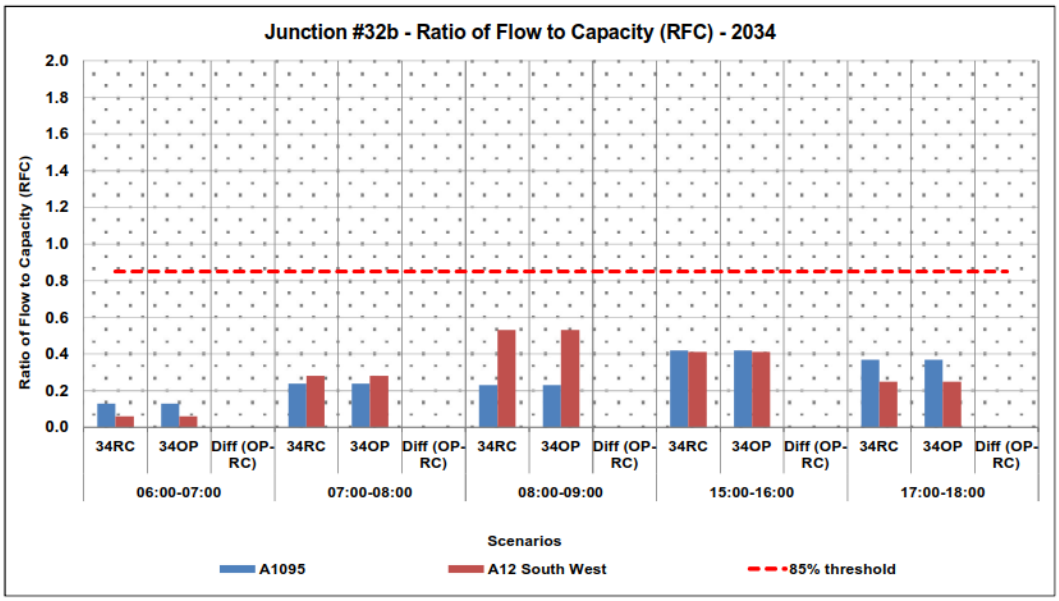
A.12.22. The 2034 Reference Case scenario traffic flows show a negligible increase in traffic flow on the minor arm (up to +23 vehicles per hour), relative to observed base year traffic flows. On the A12, demand is predicted to increase from 30-100 vehicles per hour in each direction for each of the modelled periods.

A.12.23. The Operational Phase scenario traffic flows are very similar to the 2034 Reference Case, with negligible changes across all arms and modelled hourly periods.

ii. Results analysis

A.12.24. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.47**. The difference is shown as OP-RC.

Plate 9.47 – A12 / A1095 2034 Operational Phase RFC Results



A.12.25. **Plate 9.47** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC recorded as 0.53 on the major arm right turn into the A1095 from 08:00-09:00.

A.12.26. The Operational Phase scenario RFC results are the same as those for the 2034 Reference Case scenario, which is intuitive given the negligible change in entry demand between the two scenarios.

f) Mitigation analysis

A.12.27. As negligible short-term impact and no long-term impact is predicted at this junction, mitigation is not proposed.

g) Overview

A.12.28. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.12**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.12: A12 / A1095 RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
J32a							
06:00-07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

07:00-08:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08:00-09:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15:00-16:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J32b							
06:00-07:00	0.11	0.12	0.13	0.12	0.16	0.13	0.13
07:00-08:00	0.24	0.25	0.28	0.27	0.29	0.28	0.28
08:00-09:00	0.48	0.51	0.52	0.52	0.53	0.53	0.53
15:00-16:00	0.37	0.39	0.39	0.40	0.41	0.42	0.42
17:00-18:00	0.33	0.35	0.35	0.36	0.36	0.37	0.37
J32c							
06:00-07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07:00-08:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08:00-09:00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
15:00-16:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	0.01	0.01	0.01	0.01	0.01	0.01	0.01

A.12.29. The modelling results show that the junction operates with good reserve capacity in all scenarios and time periods. Sizewell C is predicted to have negligible impact at this location with the largest impact (+0.04) likely to be experienced in the Peak Construction scenario from 06:00-07:00 when the maximum RFC for the junction is expected to increase from 0.12 to 0.16 which is comfortably within capacity. Increase in queues and delay is predicted to be negligible.

A.13. Junction 33 – A12 / B1438

a) Context

A.13.1. Junction 38 is a dual carriageway merge / diverge arrangement (left-in / left-out) on the A12, located at Ufford which is approximately 16-miles south-west of the Sizewell C site. The A12 comprises of two lanes in each direction and is subject to the national speed limit in this location. The B1438 has a single lane in each direction and the national speed limit also applies. No street lighting is present. A satellite image of the existing junction layout is shown in **Plate 9.48**.

Plate 9.48 – Existing A12 / B1438 Junction Layout

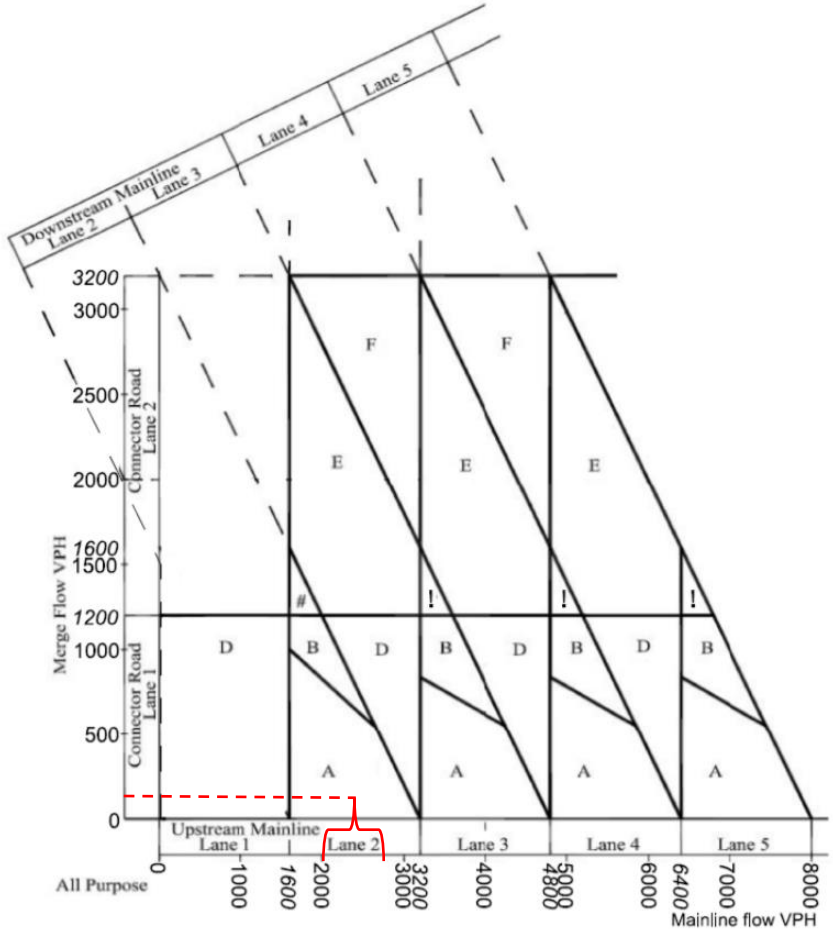


A.13.2. The diverge layout has not been assessed as flows making this movement are not predicted to increase significantly and this movement was observed to experience no queues in any of the modelled periods. The diverge movement is also unopposed so is unlikely to experience delays or queues. The merge layout has been assessed based on the guidance in Design Manual for Roads and Bridge CD 122 (formerly TD 22/06).

b) Calibration Summary

A.13.3. The assessment method has been checked against observed data and provides a reasonable indication of the likelihood of capacity issues. The assessment method is based on figure 3.12a contained within Design Manual for Roads and Bridges CD 122, as shown in **Plate 9.49**. Based on the level of merging flow and the level of mainline flow or mainline lanes, the diagram recommends a suitable type of merge as indicated by the letters A to F on the diagram.

Plate 9.49 – Merge layout guidance (DMRB, CD 122)



A.13.4. The letters A to F represent the following types of merge layout:

- A – Taper merge
- B – Parallel merge
- C – Ghost island merge
- D – Lane gain
- E – Lane gain with ghost island merge
- F – 2 lane gain with ghost island merge

A.13.5. The level of flow observed on the mainline was observed to be 400-950 vehicles per hour which CD 122 suggests could be accommodated within 1-lane on the mainline. As there are already 2-lanes on the mainline at this junction, it is therefore appropriate to gauge the recommended merge type based on this rather than based on the level of mainline flow.

A.13.6. Assuming a 2-lane mainline and the level of observed merging flows (70-230 vehicles per hour), CD 122 suggests that a merge type A would be appropriate. The existing merge type at junction 32 is a type B parallel merge which has more capacity than the recommend type A merge. The assessment therefore suggests that the current merge provision should be capable of catering for the observed traffic flows which is shown to be true based on the fact no queues were observed. This base year check gives confidence that the DMRB guidance is appropriate in determining the level of merge provision likely to be required under a given flow scenario at this location.

c) Early Years (2023)

i. Demand impact

A.13.7. The 2023 Reference Case scenario traffic flows show a small increase in demand (+10-20 vehicles per hour) on the B1438 minor arm relative to the base scenario. The A12 northbound is predicted to experience an increase of +100-140 vehicles per hour relative to the base scenario. The A12 southbound is expected to see an increase of +50-150 vehicles per hour with the exception of 17:00-18:00 which is expected to see an increase of +220 vehicles per hour.

A.13.8. The Early Years scenario traffic flows are predicted to be similar to the 2023 Reference Case on the minor arm (B1438). The A12 northbound flows are predicted to increase by +100 vehicles per hour from 06:00-07:00, +200 vehicles per hour from 07:00-08:00 and +60 vehicles per hour from 08:00-09:00 as Early Years construction workers head northbound to the A12 construction sites and the Sizewell C site. A12 northbound flows in the PM periods are expected to remain at the same level as the 2023 Reference Case.

A.13.9. The A12 southbound flows are expected to increase slightly (+10-40 vehicles per hour) compared to the 2023 Reference Case in all modelled hours with the exception of 17:00-18:00 when flows are expected to increase by 100 vehicles per hour as construction workers leave the A12 construction sites.

ii. Results analysis

A.13.10. The 2023 Reference Case and 2023 Early Years flows are shown in **Table 9.13**. When the merging flows are considered in line with the CD 122 diagram, a merge layout of type A is recommended.

Table 9.13 – 2023 Mainline and merging traffic flows

Scenario	Time	Mainline flow (vph)	Merging flow (vph)
2023 Reference Case	06:00-07:00	461	76
	07:00-08:00	896	176
	08:00-09:00	1072	252
	15:00-16:00	887	196
	17:00-18:00	840	172
2023 Early Years	06:00-07:00	473	76
	07:00-08:00	934	177
	08:00-09:00	1084	252
	15:00-16:00	918	195
	17:00-18:00	928	170

A.13.11. The recommended merge type (type A) is of a lower provision than the current type of merge facility (type B) so it is unlikely that mitigation would be needed at this location and the merge is expected to cater for the merging demand.

A.13.12. The level of mainline flow does not exceed 1,600 vehicles per hour (maximum flow for 1 mainline lane) or 3,200 vehicles per hour (maximum flow for 2 mainline lanes) and therefore the 2 mainline lanes should be sufficient to cater for the mainline demand.

d) Peak Construction (2028)

i. Demand impact

A.13.13. The 2028 Reference Case scenario traffic flows show a small increase in demand (+10-20 vehicles per hour) on the B1438 minor arm relative to the base scenario. The A12 northbound is predicted to experience an increase of +110-190 vehicles per hour relative to the base scenario. The A12 southbound is expected to see an increase of +60-170 vehicles per hour with the exception of 17:00-18:00 which is expected to see an increase of +210 vehicles per hour relative to the base scenario.

A.13.14. The Peak Construction scenario traffic flows are predicted to be similar to the 2028 Reference Case on the minor arm (B1438). The A12 northbound flows are predicted to increase by +260 vehicles per hour from 06:00-07:00, +160 vehicles per hour from 07:00-08:00 and +50 vehicles per

hour from 08:00-09:00 as Peak Construction workers head northbound to the Wickham Market Park and Ride site. A12 northbound flows in the PM periods are expected to increase slightly (+20-50 vehicles per hour) relative to the 2028 Reference Case.

A.13.15. The A12 southbound flows are expected to increase slightly (+10-40 vehicles per hour) compared to the 2023 Reference Case in the AM periods whilst the PM periods show an increase of +200 vehicles per hour from 15:00-16:00 and +90 vehicles per hour from 17:00-18:00 as vehicles leave the Wickham Market Park and Ride site and head south.

ii. Results analysis

A.13.16. The 2028 Reference Case and 2028 Peak Construction flows are shown in **Table 9.14**. When the merging flows are considered in line with the CD 122 diagram, a merge layout of type A is recommended.

Table 9.14 – 2028 Mainline and merging traffic flows

Scenario	Time	Mainline flow (vph)	Merging flow (vph)
2028 Reference Case	06:00-07:00	472	72
	07:00-08:00	915	164
	08:00-09:00	1086	244
	15:00-16:00	883	190
	17:00-18:00	831	167
2028 Peak Construction	06:00-07:00	477	72
	07:00-08:00	948	164
	08:00-09:00	1114	244
	15:00-16:00	1057	186
	17:00-18:00	911	167

A.13.17. The recommended merge type (type A) is of a lower provision than the current type of merge facility (type B) so it is unlikely that mitigation would be needed at this location and the merge is expected to cater for the merging demand.

A.13.18. The level of mainline flow does not exceed 1,600 vehicles per hour (maximum flow for 1 mainline lane) or 3,200 vehicles per hour (maximum flow for 2 mainline lanes) and therefore the 2 mainline lanes should be sufficient to cater for the mainline demand.

e) Operational Phase (2034)

i. Demand impact

A.13.19. The 2034 Reference Case scenario traffic flows show a small increase in demand (+10-20 vehicles per hour) on the B1438 minor arm relative to the

base scenario. The A12 northbound is predicted to experience an increase of +130-230 vehicles per hour relative to the base scenario. The A12 southbound is expected to see an increase of +90 vehicles per hour from 06:00-07:00 and a larger increase of +210-260 vehicles per hour from 07:00-09:00, 15:00-16:00 and 17:00-18:00 relative to the base scenario.

A.13.20. The Operational Phase scenario traffic flows are predicted to be similar to the 2034 Reference Case on the minor arm (B1438) and the major arms (A12).

ii. Results analysis

A.13.21. The 2034 Reference Case and 2034 Operational Phase flows are shown in **Table 9.15**. When the merging flows are considered in line with the CD 122 diagram, a merge layout of type A is recommended.

Table 9.15 – 2034 Mainline and merging traffic flows

Scenario	Time	Mainline flow (vph)	Merging flow (vph)
2034 Reference Case	06:00-07:00	494	74
	07:00-08:00	971	168
	08:00-09:00	1156	249
	15:00-16:00	955	194
	17:00-18:00	821	174
2034 Operational Phase	06:00-07:00	495	74
	07:00-08:00	963	168
	08:00-09:00	1145	249
	15:00-16:00	954	194
	17:00-18:00	823	175

A.13.22. The recommended merge type (type A) is of a lower provision than the current type of merge facility (type B) so it is unlikely that mitigation would be needed at this location and the merge is expected to cater for the merging demand.

A.13.23. The level of mainline flow does not exceed 1,600 vehicles per hour (maximum flow for 1 mainline lane) or 3,200 vehicles per hour (maximum flow for 2 mainline lanes) and therefore the 2 mainline lanes should be sufficient to cater for the mainline demand.

f) Mitigation analysis

A.13.24. The existing merge layout at the A12/B1438 (junction 33) is expected to cater for the levels of flows predicted in 2023, 2028 and 2034 (with or

without Sizewell C traffic). Mitigation is therefore not proposed at this location.

g) Overview

A.13.25. An overview of the DMRB assessment for the A12/B1438 (junction 33) is shown in **Table 9.16**. The maximum mainline flow predicted is 1,156 vehicles per hour (2034 Reference Case, 08:00-09:00) which is below the 1,600 vehicle per hour threshold for requiring 2 mainline lanes. As 2 mainline lanes are already present at this location, the mainline flow should be comfortably accommodated.

A.13.26. The maximum merging flow is predicted to be 252 vehicles per hour (2023 Early Years, 08:00-09:00) which is approximately 4 vehicles per minute. According to the DMRB guidance, this level of merging flow should be comfortably accommodated by a type A merge (taper merge, see **Plate 9.50**). The type B merge (parallel merge, see **Plate 9.51**) provided should therefore be sufficient to cater for the flows forecast.

Plate 9.50 – Merge type A – Taper Merge (DMRB, CD 122)

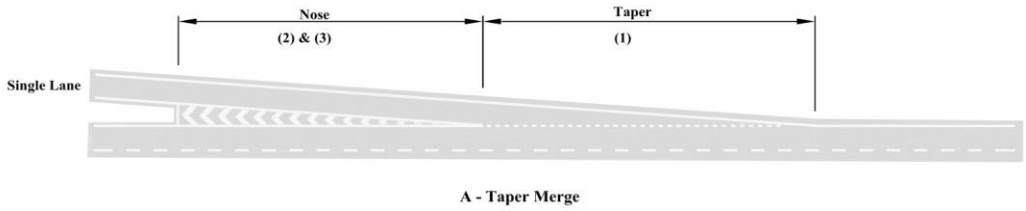


Plate 9.51 – Merge type B – Parallel Merge (DMRB, CD 122)

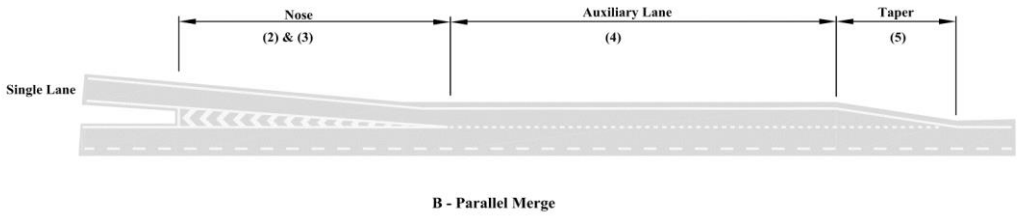


Table 9.16: A12 / B1438 Results Overview

DMRB Assessment				DMRB recommended merge type	Result
Scenario	Time period	Mainline Flow (vph)	Merging Flow (vph)		
BY	06:00-07:00	419	69	Type A: Taper Merge	Mitigation not required
	07:00-08:00	790	159	Type A: Taper Merge	Mitigation not required
	08:00-09:00	942	231	Type A: Taper Merge	Mitigation not required
	15:00-16:00	761	174	Type A: Taper Merge	Mitigation not required
	17:00-18:00	643	157	Type A: Taper Merge	Mitigation not required
23RC	06:00-07:00	461	76	Type A: Taper Merge	Mitigation not required
	07:00-08:00	896	176	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1072	252	Type A: Taper Merge	Mitigation not required
	15:00-16:00	887	196	Type A: Taper Merge	Mitigation not required
	17:00-18:00	840	172	Type A: Taper Merge	Mitigation not required
23EY	06:00-07:00	473	76	Type A: Taper Merge	Mitigation not required
	07:00-08:00	934	177	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1084	252	Type A: Taper Merge	Mitigation not required
	15:00-16:00	918	195	Type A: Taper Merge	Mitigation not required
	17:00-18:00	928	170	Type A: Taper Merge	Mitigation not required
28RC	06:00-07:00	472	72	Type A: Taper Merge	Mitigation not required
	07:00-08:00	915	164	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1086	244	Type A: Taper Merge	Mitigation not required
	15:00-16:00	883	190	Type A: Taper Merge	Mitigation not required

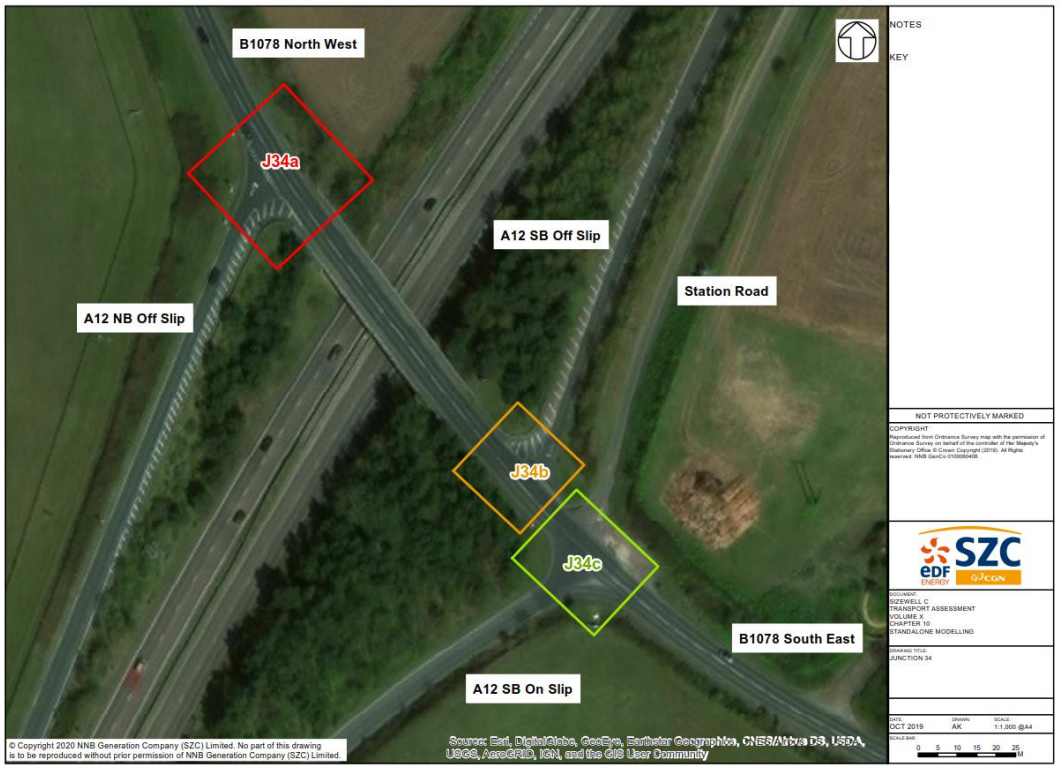
DMRB Assessment				DMRB recommended merge type	Result
Scenario	Time period	Mainline Flow (vph)	Merging Flow (vph)		
	17:00-18:00	831	167	Type A: Taper Merge	Mitigation not required
28PC	06:00-07:00	477	72	Type A: Taper Merge	Mitigation not required
	07:00-08:00	948	164	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1114	244	Type A: Taper Merge	Mitigation not required
	15:00-16:00	1057	186	Type A: Taper Merge	Mitigation not required
	17:00-18:00	911	167	Type A: Taper Merge	Mitigation not required
34RC	06:00-07:00	494	74	Type A: Taper Merge	Mitigation not required
	07:00-08:00	971	168	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1156	249	Type A: Taper Merge	Mitigation not required
	15:00-16:00	955	194	Type A: Taper Merge	Mitigation not required
	17:00-18:00	821	174	Type A: Taper Merge	Mitigation not required
34OP	06:00-07:00	495	74	Type A: Taper Merge	Mitigation not required
	07:00-08:00	963	168	Type A: Taper Merge	Mitigation not required
	08:00-09:00	1145	249	Type A: Taper Merge	Mitigation not required
	15:00-16:00	954	194	Type A: Taper Merge	Mitigation not required
	17:00-18:00	823	175	Type A: Taper Merge	Mitigation not required

A.14. Junction 34a – A12 Northbound off slip / B1078 T-Junction, Lower Hacheston

a) Context

A.14.1. Junction 34a forms the first part of the A12 / B1078 interchange, referred to as *Junction 34* herein. The A12 northbound off slip meets the B1078 via a T-junction, north west of its flyover of the A12 and approximately 120m south east of Junction 3 (B1078 / B1116 roundabout). The junction is located north east of Wickham Market, approximately 11-miles south west of the Sizewell C site. At the junction, both the A12 northbound off slip and B1078 operate at the national speed limit of 60mph. A satellite image of the existing junction layout is shown in **Plate 9.52**.

Plate 9.52 – Existing A12 Northbound off slip / B1078 T-Junction Layout



b) Calibration Summary

A.14.2. Observed queue data showed that there were small queues on the minor arm in all modelled hours. The calibrated junction model shows queue lengths that typically are shorter than observed, with the model showing negligible queues on all approaches in the modelled hours. It is considered that the differences in queue length are not significant and that the model is representative of existing conditions.

c) Early Years (2023)

i. Demand impact

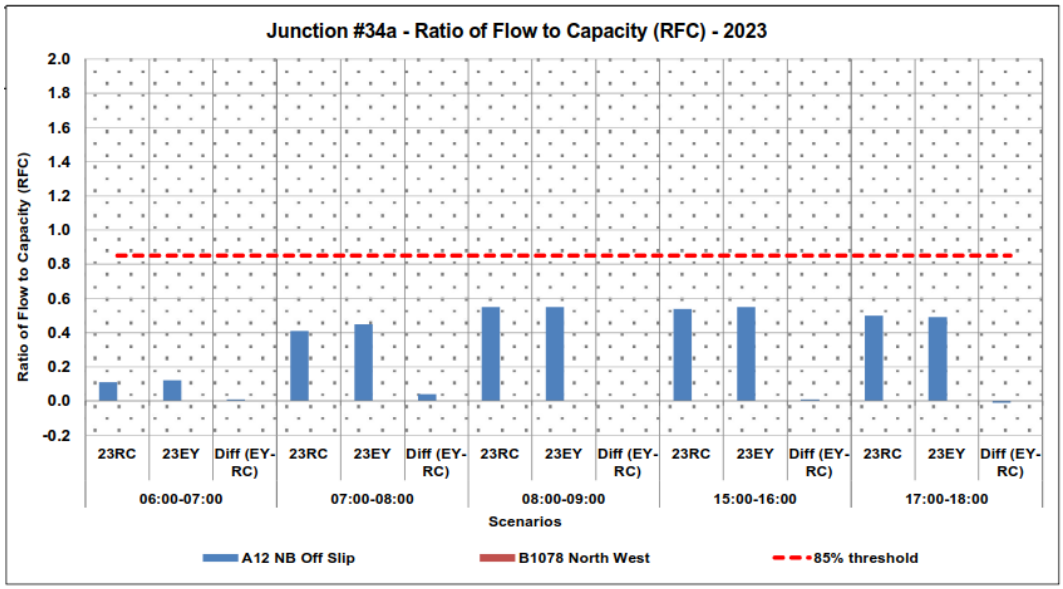
A.14.3. The 2023 Reference Case scenario traffic flows show small increases in entry demand on the B1078 North West arm (up to 70 vehicles per hour), and generally negligible changes in traffic flows on the A12 northbound off slip, relative to the observed base year traffic flows. On the B1078 South East approach negligible changes in traffic flows are forecast.

A.14.4. The Early Years scenario traffic flows are forecast to have negligible increases from the 2023 Reference Case scenario.

ii. Results analysis

A.14.5. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.53**. The difference is shown as EY-RC.

Plate 9.53 – A12 Northbound off slip / B1078 T-Junction 2023 Early Years RFC Results



A.14.6. **Plate 9.53** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.55 being reported from 08:00-09:00 on A12 northbound off slip.

A.14.7. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing minor increases in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is

therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

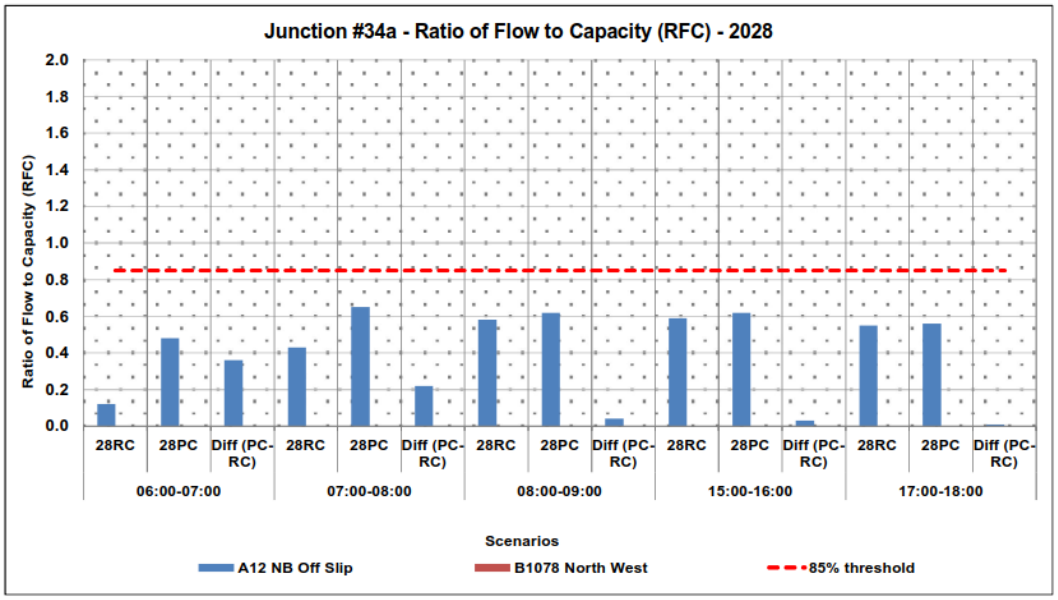
A.14.8. The 2028 Reference Case scenario traffic flows show small increases in entry demand on the B1078 from both directions for most modelled hours (up to 80 vehicles per hour), and the A12 northbound off slip during the afternoon (up to 70 vehicles per hour), relative to the observed base year traffic flows.

A.14.9. The Peak Construction scenario traffic flows are forecast to have small or negligible increases from the 2028 Reference Case scenario, except on the A12 northbound off slip, where a large increase is forecast from 06:00-07:00 (+220 vehicles per hour) and a modest increase from 07:00-08:00 (+120 vehicles per hour). An increase of 60-90 vehicles per hour is present on the B1078 West approach in the evening periods. These increases represent Sizewell C construction workers accessing the Wickham Market park and ride site in the morning and leaving in the evening.

ii. Results analysis

A.14.10. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.54**. The difference is shown as PC-RC.

Plate 9.54 – A12 Northbound off slip / B1078 T-Junction 2028 Peak Construction RFC Results



A.14.11. **Plate 9.54** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.59 being reported from 15:00-16:00 on A12 northbound off slip.

A.14.12. The Peak Construction scenario RFC results are similar to the 2028 Reference Case from 08:00-09:00, 15:00-16:00 and 17:00-18:00, generally showing small increases in RFC on the A12 southbound off slip and no changes on the B1078 arms. From 06:00-08:00, modest increases in RFC are recorded, consistent with the large increases in entry demand for this scenario. However, during these time periods the junction is still operating with reserve capacity.

A.14.13. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

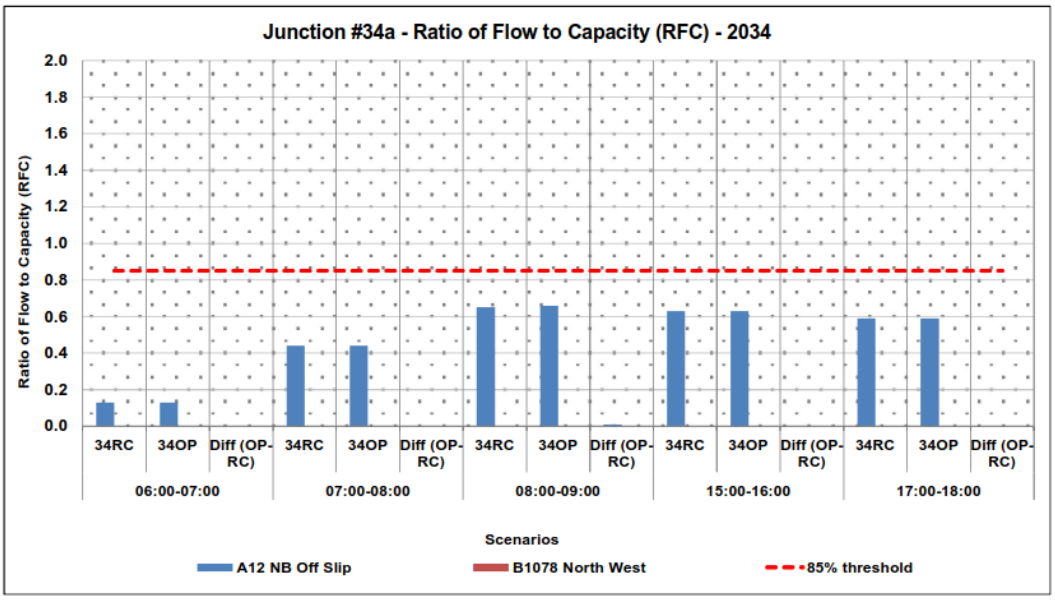
A.14.14. The 2034 Reference Case scenario traffic flows show small increases in entry demand on the B1078 from both directions for most modelled hours (up to 100 vehicles per hour), and the A12 northbound off slip during the afternoon (+70-80 vehicles per hour), relative to the observed base year traffic flows.

A.14.15. The Operational Phase scenario traffic flows are forecast to have very small increases (up to 30 vehicles per hour) from the 2034 Reference Case scenario during all time periods, except 06:00-07:00 where the difference is negligible.

ii. Results analysis

A.14.16. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.55**. The difference is shown as OP-RC.

Plate 9.55 – A12 Northbound off slip / B1078 T-Junction 2034 Operational Phase RFC Results



A.14.17. **Plate 9.55** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC of 0.65 being reported from 08:00-09:00 on A12 Southbound off slip.

A.14.18. The Operational Phase scenario RFC results are very similar to the 2034 Reference Case, with generally identical or negligible increases in RFC during all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Operational Phase scenario.

f) Mitigation analysis

A.14.19. The modelling of the existing junction shows that the Sizewell C traffic would have a minimal impact on the operation of the existing junction, and

it would continue to operate with reserve capacity. Therefore, mitigation to improve capacity is not proposed at this junction.

A.14.20. For safety purposes, it is proposed to make some minor changes to signage at the junction, as illustrated in **Southern Park and Ride Plans** (Doc Ref. 2.7).

g) Overview

A.14.21. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.17**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.17: A12 Northbound off slip / B1078 T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.11	0.11	0.12	0.12	0.48	0.13	0.13
07:00-08:00	0.38	0.41	0.45	0.43	0.65	0.44	0.44
08:00-09:00	0.50	0.55	0.55	0.58	0.62	0.65	0.66
15:00-16:00	0.44	0.54	0.55	0.59	0.62	0.63	0.63
17:00-18:00	0.43	0.50	0.49	0.55	0.56	0.59	0.59

A.14.22. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 08:00-09:00, however at its greatest in the 2034 Operational Phase scenario, still indicates a reserve capacity of 34%.

A.14.23. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction, however some changes to signage are proposed.

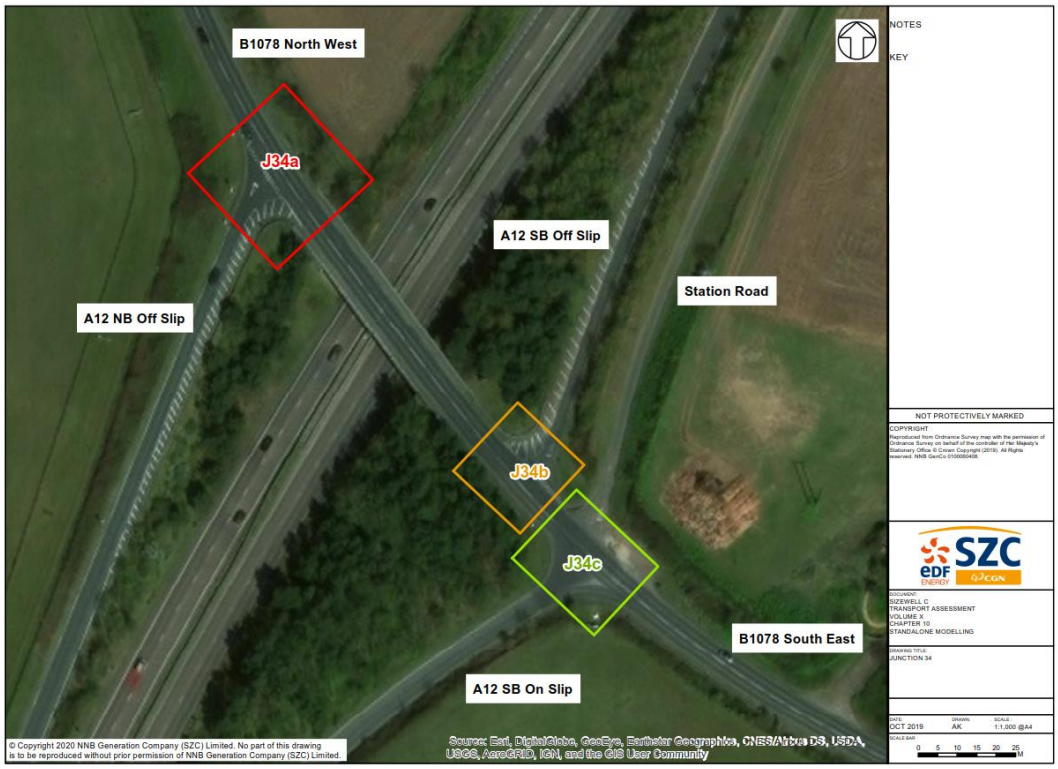
A.15. Junction 34b – A12 Southbound off slip / B1078 T-Junction, Lower Hacheston

a) Context

A.15.1. Junction 34b forms the second part of the A12 / B1078 interchange, referred to as *Junction 34* herein. The A12 southbound off slip meets the B1078 via a T-junction, south east of its flyover of the A12 and approximately 20m northwest of Junction 34c (A12 Southbound on slip / B1078 / Station Road). The junction is located north east of Wickham Market, approximately 11-miles south west of the Sizewell C site. At the junction, both the A12 southbound off slip and B1078 operate at the national speed limit of 60mph.

A.15.2. Given the proximity of the adjacent Junction 34c, some cross-referencing, particularly queue lengths, has been undertaken to ascertain whether any blocking back occurs. This is assessed in **section 9.27** of **Chapter 9** of the **Transport Assessment** (Doc Ref. 8.5). A satellite image of the existing junction layout is shown in **Plate 9.56**.

Plate 9.56 – Existing A12 Southbound off slip / B1078 T-Junction Layout



b) Calibration Summary

A.15.3. Observed queue data showed that there were small queues on the minor arm in all modelled hours. The calibrated junction model shows queue lengths that typically are shorter than observed, with the model showing negligible queues on all arms in the modelled hours. It is considered that the differences in queue length are not significant and that the model is representative of existing conditions.

c) Early Years (2023)

i. Demand impact

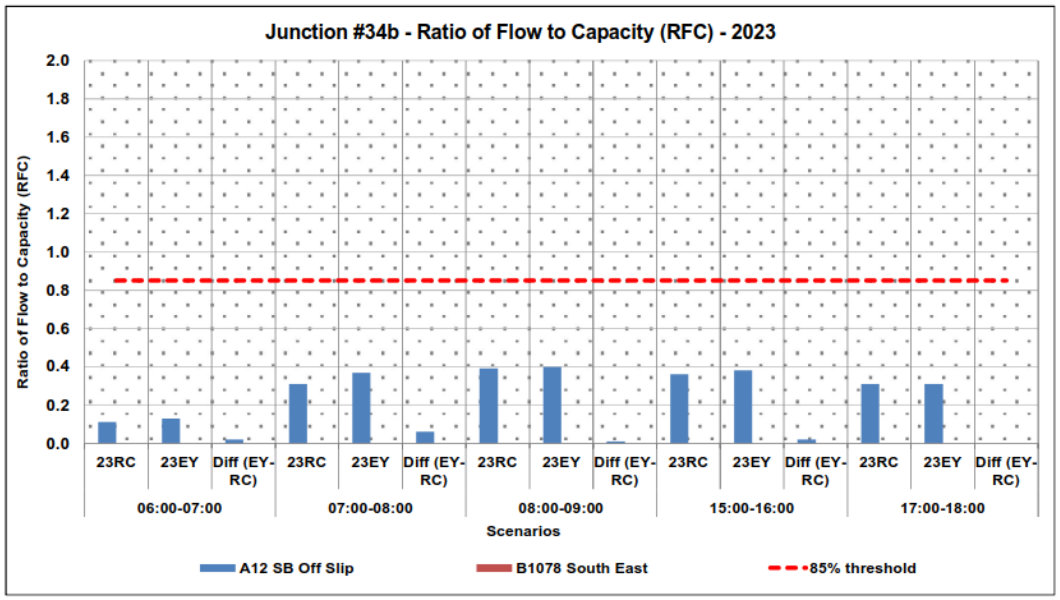
A.15.4. The 2023 Reference Case scenario traffic flows show small increases in entry demand on the northern B1078 arm (up to 70 vehicles per hour), particularly during the typical highway peak periods, relative to the observed base year traffic flows. On the other two arms, negligible changes in traffic flows are forecast.

A.15.5. The Early Years scenario traffic flows are forecast to have negligible increases from the 2023 Reference Case scenario.

ii. Results analysis

A.15.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.57**. The difference is shown as EY-RC.

Plate 9.57 – A12 Southbound off slip / B1078 T-Junction 2023 Early Years RFC Results



A.15.7. **Plate 9.57** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.39 being reported from 08:00-09:00 on A12 southbound off slip.

A.15.8. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing very small increases in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

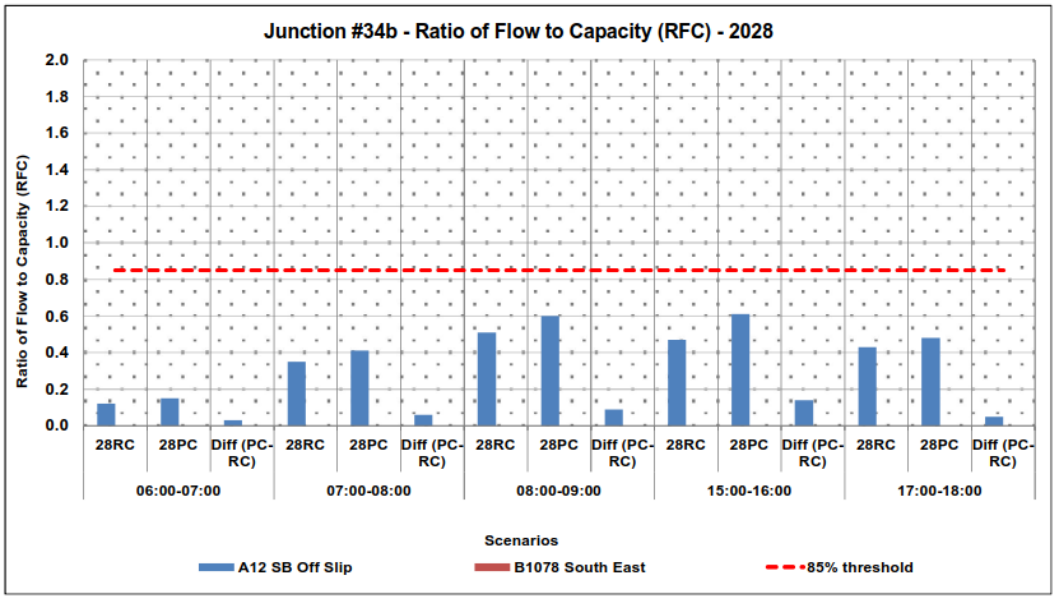
A.15.9. The 2028 Reference Case scenario traffic flows show small increases in entry demand on the northern B1078 arm (up to 70 vehicles per hour), particularly during the typical highway peak periods and the A12 southbound off slip during the afternoon hours (+50-60 vehicles per hour), relative to the observed base year traffic flows. The B1078 southern arm is forecast to have negligible changes in traffic flows relative to the base year.

A.15.10. The Peak Construction scenario traffic flows are forecast to have negligible increases from the 2028 Reference Case scenario, except on the B1078 northern approach to the junction in the afternoon, where small increases are forecast (+50-90 vehicles per hour).

ii. Results analysis

A.15.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.58**. The difference is shown as PC-RC.

Plate 9.58 – A12 Southbound off slip / B1078 T-Junction 2028 Peak Construction RFC Results



A.15.12. **Plate 9.58** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.51 being reported from 08:00-09:00 on A12 southbound off slip.

A.15.13. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, generally showing small increases in RFC on all movements in all modelled hours. The largest increase occurs from 15:00-16:00. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

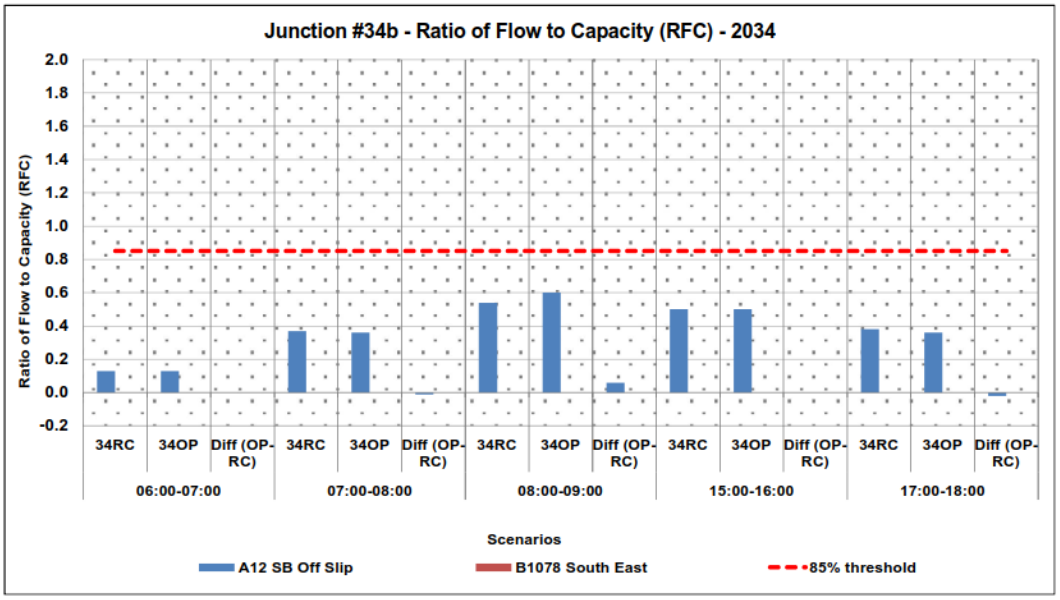
A.15.14. The 2034 Reference Case scenario traffic flows show small increases in entry demand on the northern B1078 arm, particularly from 08:00-09:00 (+110 vehicles per hour) and 15:00-16:00 (+100 vehicles per hour) and the A12 southbound off slip from 15:00-16:00 (+70 vehicles per hour), relative to the observed base year traffic flows. The B1078 southern arm is forecast to have very small increases (+10-40 vehicles per hour) in traffic flows relative to the base year.

A.15.15. The Operational Phase scenario traffic flows are forecast to have negligible increases from the 2023 Reference Case scenario.

ii. Results analysis

A.15.16. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.59**. The difference is shown as OP-RC.

Plate 9.59 – A12 Southbound off slip / B1078 T-Junction 2034 Operational Phase RFC Results



A.15.17. **Plate 9.59** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC of 0.54 being reported from 08:00-09:00 on A12 southbound off slip.

A.15.18. The Operational Phase scenario RFC results are very similar to the 2034 Reference Case, with generally negligible changes in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Operational Phase scenario.

f) Mitigation analysis

A.15.19. The modelling of the existing junction shows that the Sizewell C traffic would have a minimal impact on the operation of the existing junction, and it would continue to operate with reserve capacity. Therefore, mitigation to improve capacity is not proposed at this junction.

A.15.20. For safety purposes, it is proposed to make some minor changes to signage at the junction, as Illustrated in **Southern Park and Ride Plans** (Doc Ref. 2.7).

g) Overview

A.15.21. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.18**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.18: A12 Southbound off slip / B1078 T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.10	0.11	0.13	0.12	0.15	0.13	0.13
07:00-08:00	0.28	0.31	0.37	0.35	0.41	0.37	0.36
08:00-09:00	0.44	0.39	0.40	0.51	0.60	0.54	0.60
15:00-16:00	0.30	0.36	0.38	0.47	0.61	0.50	0.50
17:00-18:00	0.28	0.31	0.31	0.43	0.48	0.38	0.36

A.15.22. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 08:00-09:00, however at its greatest in the 2028 Peak Construction scenario, still indicates a reserve capacity of 39%.

A.15.23. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction, however some changes to signage are proposed.

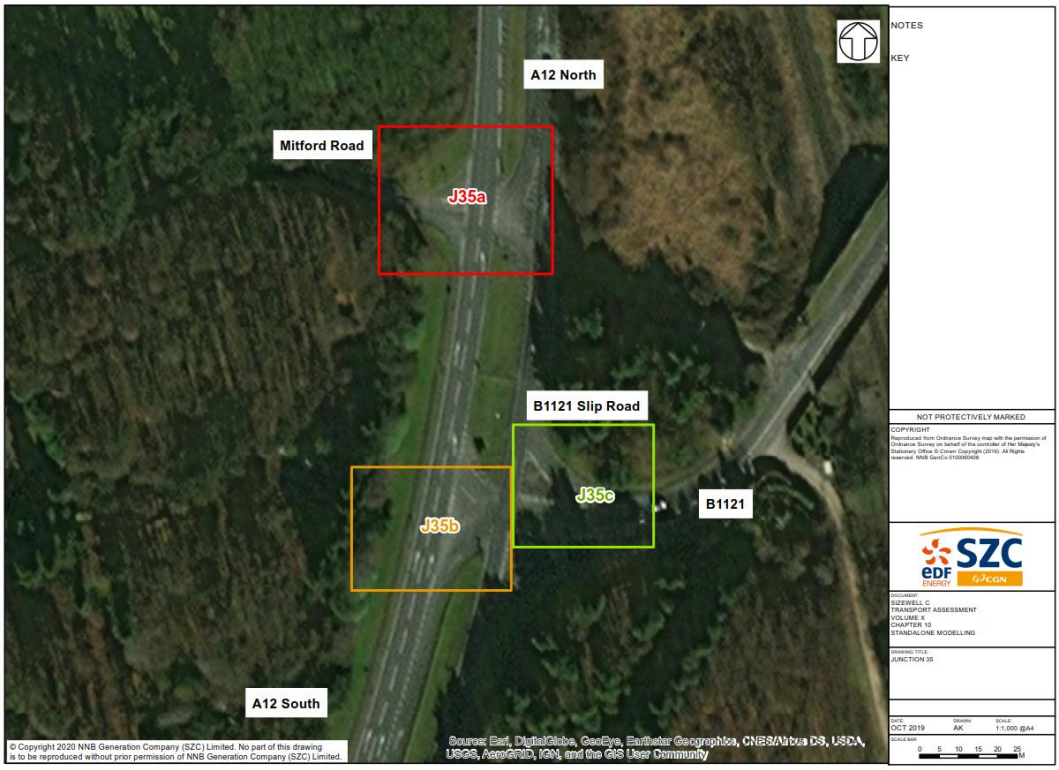
A.16. Junction 35a – A12 / Mitford Road T-Junction, Lower Hacheston

a) Context

A.16.1. Junction 35a is a priority T-junction formed at the juncture of Mitford Road with the A12, located west of the village of Benhall, approximately 6 miles west of the Sizewell C site. The junction is 80m north of Junction 35b and Junction 35c, which make up the A12 / B1121 Main Road junction. Modelling results for these junctions follow.

A.16.2. Mitford Road is a lightly trafficked, single carriageway road, which provides access to local land and properties, rather than being a strategic link. At this junction, the A12 is dualled and has two lanes in the northbound direction and one lane in the southbound direction. A right turn merge lane is present for right turning vehicles from Mitford Road onto the A12 southbound and a left turn diverge lane is present for the A12 northbound to Mitford Road left turning movement. All roads operate with a speed limit of 50mph. A satellite image of the existing junction layout is shown in **Plate 9.60**.

Plate 9.60 – Existing A12 / Mitford Road T-Junction Layout



b) Calibration Summary

A.16.3. Observed queue data showed that there were negligible queues on the minor arm in all modelled hours. The calibrated junction model also shows negligible queue lengths; therefore, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

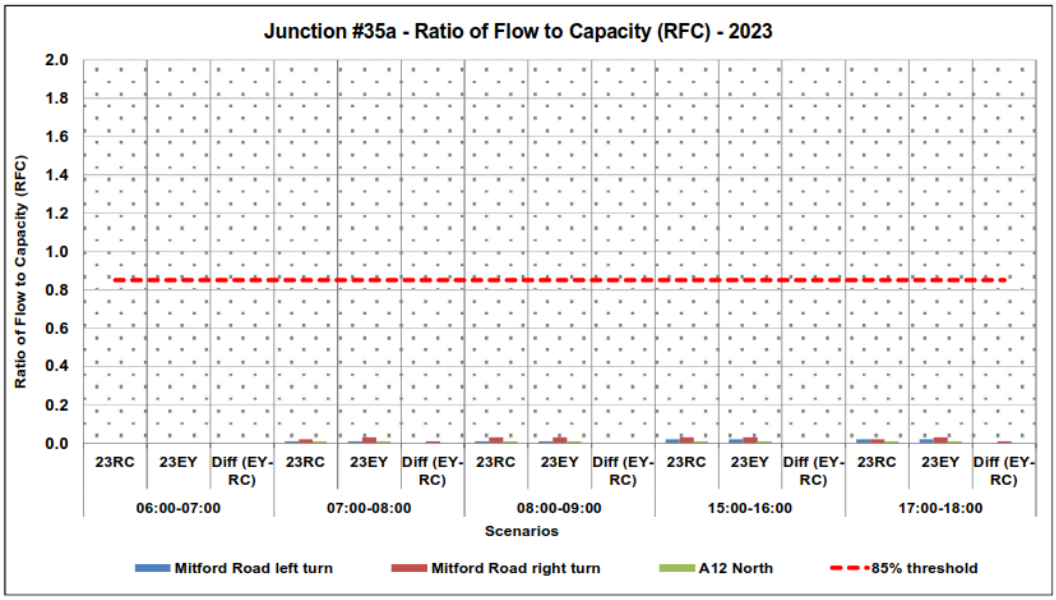
A.16.4. The 2023 Reference Case scenario traffic flows show moderate increases in entry demand on the A12 in both directions (+70-120 vehicles per hour) with the exception of 06:00-07:00 when increases are predicted to be less than 15 vehicles per hour, relative to the observed base year traffic flows. Negligible increases in traffic flows are forecast on the Mitford Road arm.

A.16.5. The Early Years scenario traffic flows are forecast to increase by up to 60 vehicles per hour on the A12, however a more significant increase of 140 vehicles per hour is forecast from 07:00-08:00 on the A12 South approach, relative to the 2023 Reference Case scenario. Negligible changes in traffic flows are forecast on the Mitford Road arm in all modelled hours.

ii. Results analysis

A.16.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.61**. The difference is shown as EY-RC.

Plate 9.61 – A12 / Mitford Road T-Junction 2023 Early Years RFC Results



A.16.7. **Plate 9.61** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.03 being reported from 08:00-09:00 and 15:00-16:00 on the Mitford Road right turn.

A.16.8. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

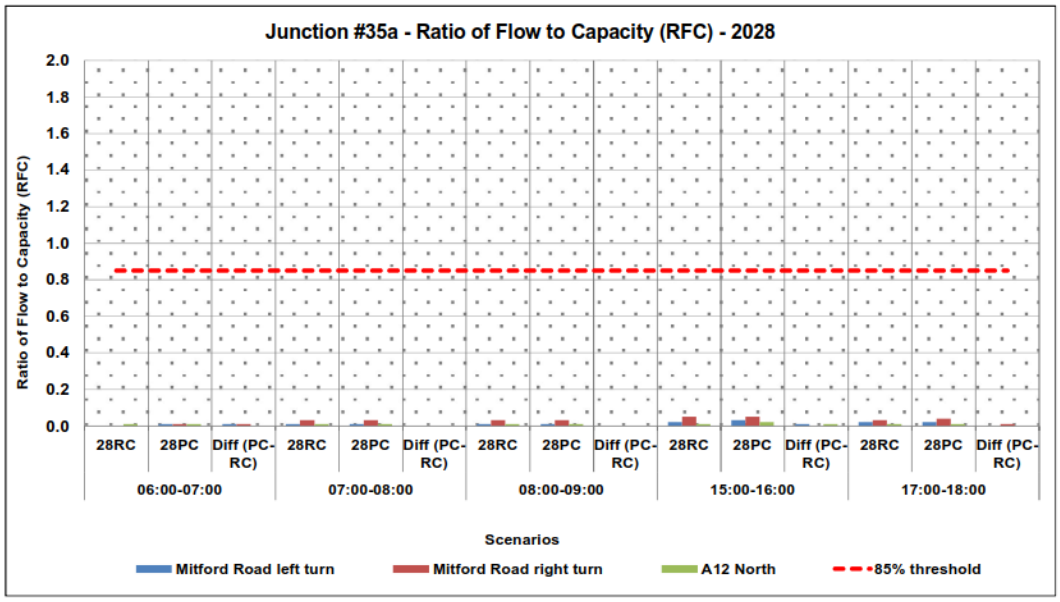
A.16.9. The 2028 Reference Case scenario traffic flows show large increases in entry demand on the A12 in both directions during all modelled hours (+110-220 vehicles per hour), except 06:00-07:00 when increases of up to 25 vehicles per hour are predicted, relative to the observed base year traffic flows. Negligible increases in traffic flows are forecast on the Mitford Road arm in all modelled hours.

A.16.10. The Peak Construction scenario traffic flows are forecast to increase by up to 35 vehicles per hour on the A12 relative to the 2028 Reference Case scenario. Negligible changes in traffic flows are forecast on the Mitford Road arm.

ii. Results analysis

A.16.11. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.62**. The difference is shown as PC-RC.

Plate 9.62 – A12 / Mitford Road T-Junction 2028 Peak Construction RFC Results



A.16.12. **Plate 9.62** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.05 being reported from 15:00-16:00 on the Mitford Road right turn.

A.16.13. The Peak Construction scenario RFC results are very similar to the 2028 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

A.16.14. The 2034 Reference Case scenario traffic flows show large increases in entry demand on the A12 in both directions during all modelled hours (+140-310 vehicles per hour), except 06:00-07:00 when increases are no more than 40 vehicles per hour, relative to the observed base year traffic

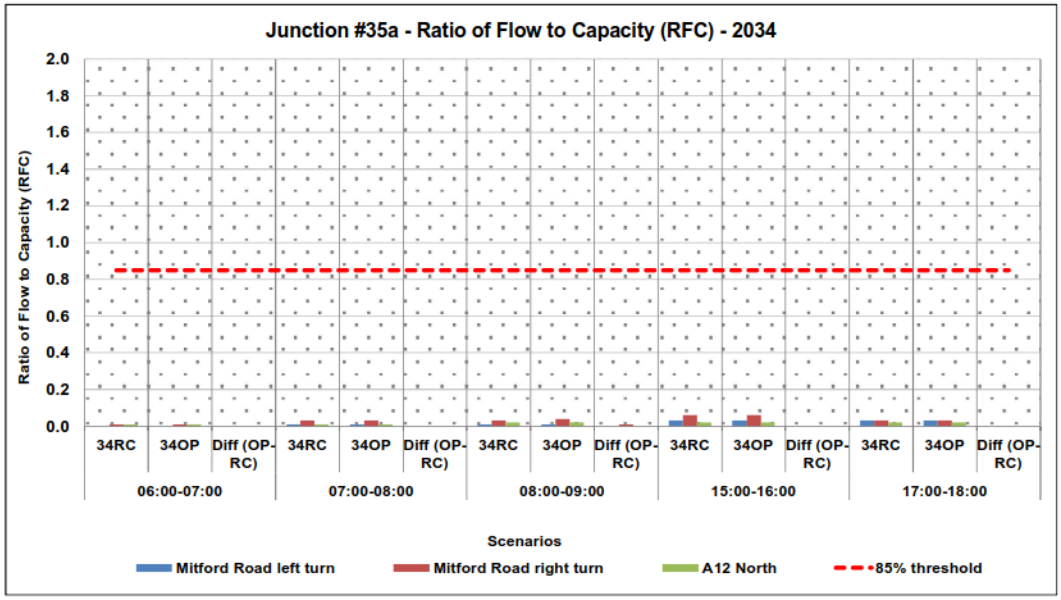
flows. Negligible increases in traffic flows are forecasted on the Mitford Road arm in all modelled hours.

A.16.15. The Operational Phase scenario traffic flows are forecast to change by a negligible amount on all approaches and modelled hours, relative to the 2034 Reference Case scenario.

ii. Results analysis

A.16.16. The RFC modelling results for the 2034 Reference Case and Operational Phase scenarios, split by each modelled hourly period, are illustrated in **Plate 9.63**. The difference is shown as OP-RC.

Plate 9.63 – A12 / Mitford Road T-Junction 2034 Operational Phase RFC Results



A.16.17. **Plate 9.63** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC of 0.06 being reported from 15:00-16:00 on the Mitford Road right turn.

A.16.18. The Operational Phase scenario RFC results are very similar to the 2034 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Operational Phase scenario.

f) Mitigation analysis

A.16.19. Since the A12 / Mitford Road T-junction operates well within capacity in all 2023, 2028 and 2034 scenarios, and the impact of Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

A.16.20. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.19**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.19: A12 / Mitford Road T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
07:00-08:00	0.02	0.02	0.03	0.03	0.03	0.03	0.03
08:00-09:00	0.02	0.03	0.03	0.03	0.03	0.03	0.04
15:00-16:00	0.02	0.03	0.03	0.05	0.05	0.06	0.06
17:00-18:00	0.02	0.02	0.03	0.03	0.04	0.03	0.03

A.16.21. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 15:00-16:00, however at its greatest in the 2034 Operational Phase scenario, still indicates a reserve capacity of 94%.

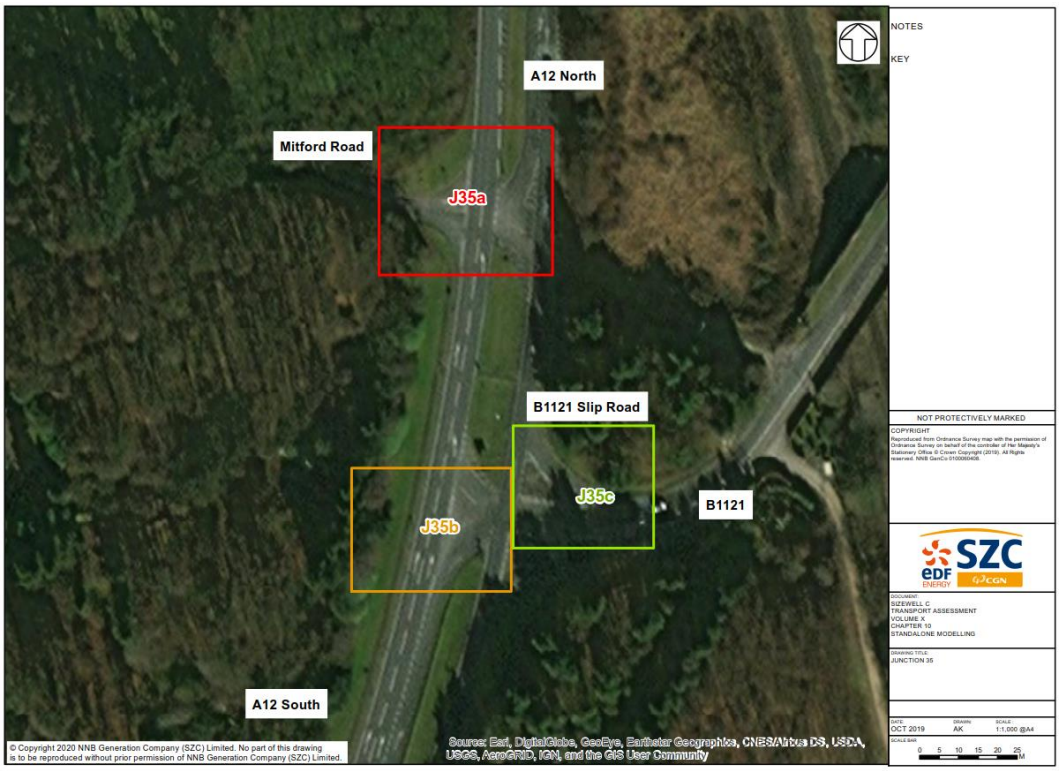
A.16.22. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction.

A.17. Junction 35b – A12 / B1121 Main Road T-Junction, Lower Hacheston

a) Context

A.17.1. Junction 35b and Junction 35c are two priority T-junctions which form the junction of the A12 and B1121 Main Road, located west of the village of Benhall, approximately 6 miles west of the Sizewell C site. Junction 35b is located 80m south of Junction 35a (A12 / Mitford Road). A satellite image of the existing junction layout is shown in **Plate 9.64**.

Plate 9.64 – Existing A12 / B1121 Main Road T-Junction Layout



A.17.2. The B1121 Main Road links the A12 to the southern access to Saxmundham. It is a single carriageway road, which on the approach to the give way line splits into two lanes for left and right turning vehicles. The priority junction at the give way lines is referred to as *Junction 35b* herein. In the vicinity of the junction, the A12 has a central reservation, and is dual carriageway in the northbound direction. A right turn merge lane is present for right turning vehicles from the B1121 Main Road onto the A12 northbound and a 90m right turn diverge lane is present for right turning vehicles from the A12 northbound to the B1121 Main Road. The speed limit on the A1121 Main Road is 40mph until just before the give way line, where it becomes 50mph to align with the A12.

A.17.3. There is a short left turn diverge lane for vehicles turning from the A12 southbound to the A1121 Main Road. The diverging slip lane joins the A1121 via a simple priority junction, referred to as *Junction 35c* herein. A full assessment of Junction 35c has been conducted but is not presented in this report as the RFC results are low (the junction operates with a maximum RFC of 0.25 and queues are negligible).

A.17.4. The remainder of this **section A.17** focusses on Junction 35b, which shows a more notable level of RFC, delay and queues.

b) Calibration Summary

A.17.5. Observed queue data showed that there were small or negligible queues on the minor arm in all modelled hours. The calibrated junction model shows negligible queue lengths; the small queues were difficult to replicate without applying unrealistic adjustments to the model; therefore, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

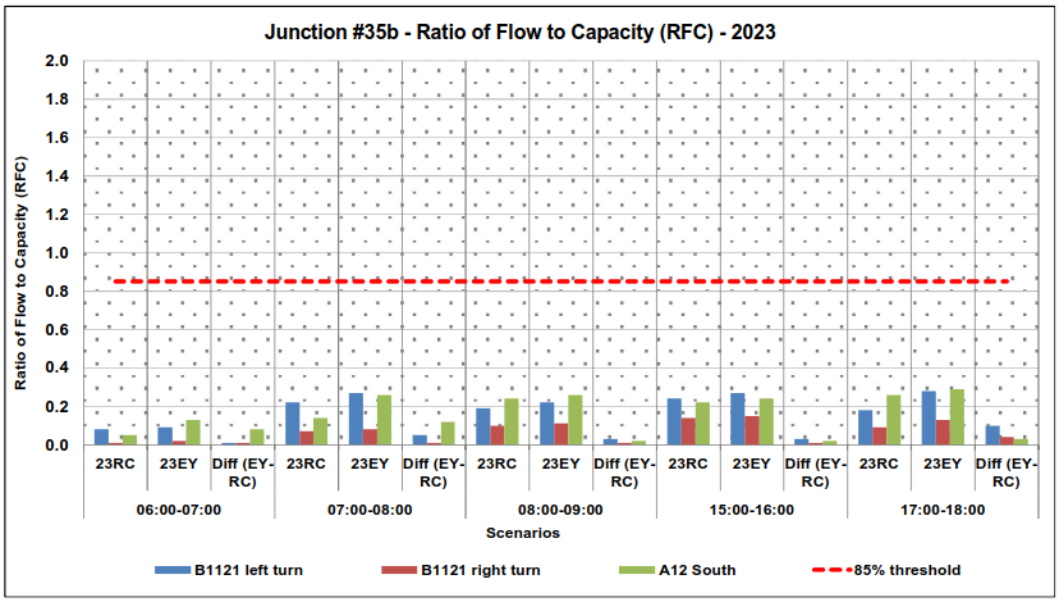
A.17.6. The 2023 Reference Case scenario traffic flows show small increases (+10-120 vehicles per hour), in entry demand on the A12 in both directions during the morning and moderate increases (+100-120 vehicles per hour) in the afternoon modelled hours, relative to the observed base year traffic flows. Negligible increases in traffic flows are forecast on B1121 Main Road arm in the morning, and small increases (+40 vehicles per hour) in the afternoon.

A.17.7. The Early Years scenario traffic flows are generally forecast to increase by a small or negligible amount on the A12 (+10-80 vehicles per hour), however a more significant increase is forecast from 07:00-08:00 on the northbound A12 approach (+200 vehicles per hour), relative to the 2023 Reference Case scenario. Negligible changes in traffic flows are forecast on the A1121 Main Road approach in all modelled hours, except 17:00-18:00 when a small increase of 60 vehicles per hour is forecast.

ii. Results analysis

A.17.8. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.65**. The difference is shown as EY-RC.

Plate 9.65 – A12 / B1121 Main Road T-Junction 2023 Early Years RFC Results



A.17.9. **Plate 9.65** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.26 being reported from 17:00-18:00 on the right turn from the A12 northbound to the A1121 Main Road.

A.17.10. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing small increases in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

A.17.11. The 2028 Reference Case scenario traffic flows show modest to large increases (+120-190 vehicles per hour) in entry demand on the A12 in both directions during all modelled hours, except 06:00-07:00 when increases are negligible, relative to the observed base year traffic flows. Small increases in traffic flows are forecast on the A1121 Main Road arm in all modelled hours (up to 60 vehicles per hour).

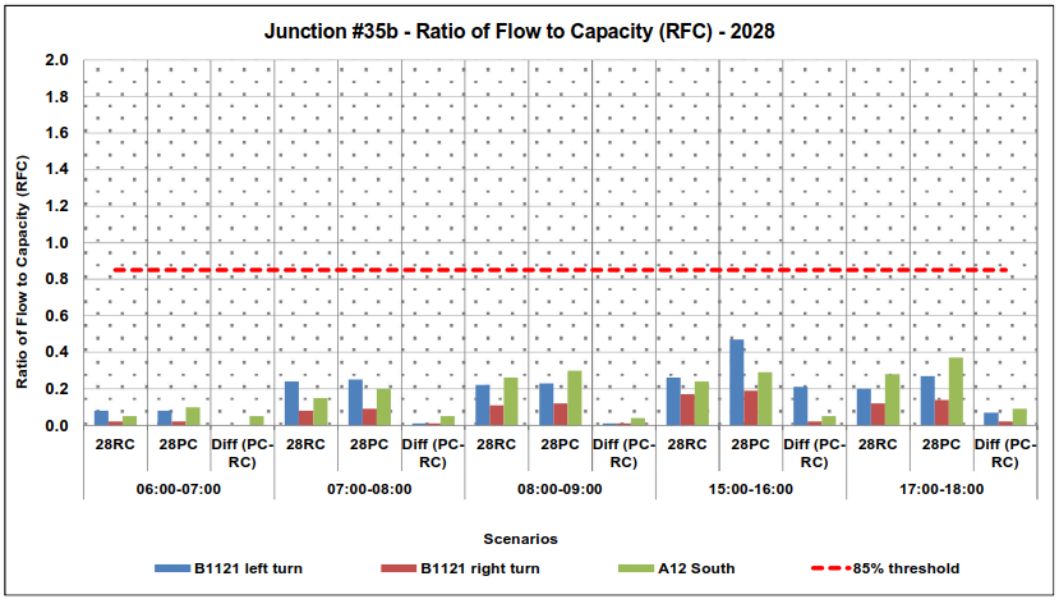
A.17.12. The Peak Construction scenario traffic flows are forecast to increase by a small or negligible amount (up to 60 vehicles per hour) on the A12 relative to the 2028 Reference Case scenario. Negligible changes in traffic flows are forecast on the B1121 Main Road arm in the morning, while a small

increase of 40 vehicles is forecast from 17:00-18:00 and a modest increase of 120 vehicles is forecast from 15:00-16:00.

ii. Results analysisAnalysis

A.17.13. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.66**. The difference is shown as PC-RC.

Plate 9.66 – A12 / B1121 Main Road T-Junction 2028 Peak Construction RFC Results



A.17.14. **Plate 9.66** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.28 being reported from 17:00-18:00 on the right turn from the A12 northbound to the A1121 Main Road.

A.17.15. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, showing small increases in RFC on all movements in all modelled hours. The only exception, where a more moderate increase is predicted, is from 15:00-16:00 on the left turn from the A1121 Main Road. This is consistent with the period of greatest demand increase as a result of Sizewell C traffic. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

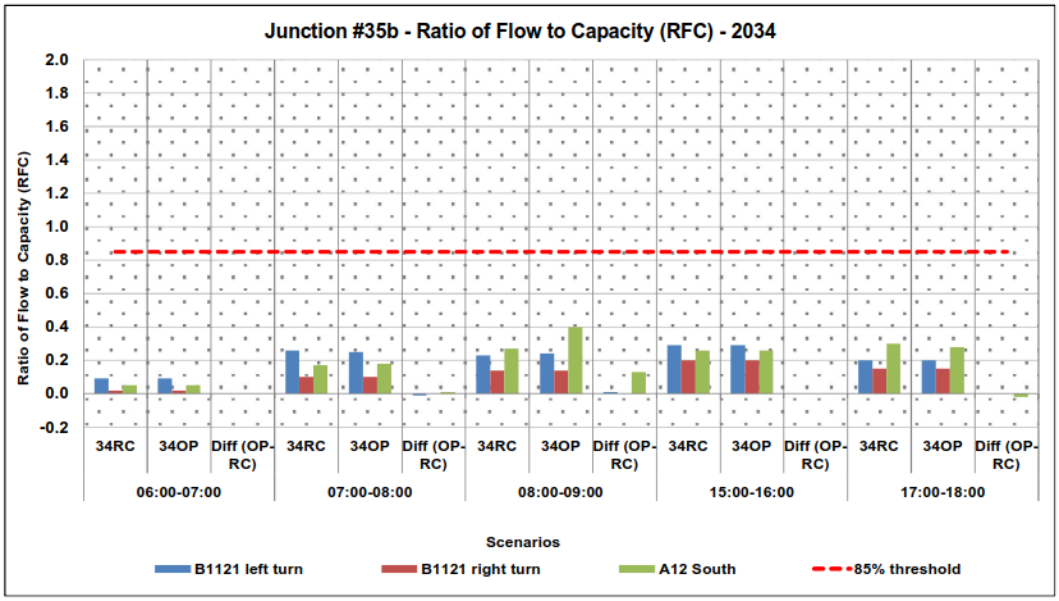
A.17.16. The 2034 Reference Case scenario traffic flows show large increases in entry demand on the A12 in both directions during all modelled hours (+150-300 vehicles per hour), except 06:00-07:00 when increases are small (+40 vehicles per hour), relative to the observed base year traffic flows. Small increases in traffic flows are forecast on the A1121 Main Road arm in all modelled hours (up to 70 vehicles per hour).

A.17.17. The Operational Phase scenario traffic flows are forecast to change by a negligible amount on all approaches during most modelled hours, relative to the 2034 Reference Case scenario. The only exception is from 08:00-09:00 when a small increase of 70 vehicles per hour is predicted.

ii. Results analysis

A.17.18. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.67**. The difference is shown as OP-RC.

Plate 9.67 – A12 / B1121 Main Road T-Junction 2034 Operational Phase RFC Results



A.17.19. **Plate 9.67** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.30 being reported from 17:00-18:00 on the right turn from the A12 northbound to the A1121 Main Road.

A.17.20. The Operational Phase scenario RFC results are very similar to the 2034 Reference Case, showing negligible changes in RFC on the majority of movements in the majority of modelled hours. The only exception, where a small increase is predicted, is from 08:00-09:00 on the right turn from the A12 northbound to the A1121 Main Road. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

f) Mitigation analysis

A.17.21. Since the A12 / A1121 Main Road T-junction, including both Junction 35b and Junction 35c, operates well within capacity in all 2023, 2028 and 2034 scenarios, and the impact of the Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

A.17.22. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.20**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.20: A12 / B1121 Main Road T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.08	0.08	0.13	0.08	0.10	0.09	0.09
07:00-08:00	0.21	0.22	0.27	0.24	0.25	0.26	0.25
08:00-09:00	0.19	0.24	0.26	0.26	0.30	0.27	0.40
15:00-16:00	0.21	0.24	0.27	0.26	0.47	0.29	0.29
17:00-18:00	0.23	0.26	0.29	0.28	0.37	0.30	0.28

A.17.23. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs tend to be similar across all hours from 07:00-09:00, 15:00-16:00 and 17:00-18:00, however at its greatest in the 2034 Operational Phase scenario from 08:00-09:00, still indicates a reserve capacity of 60%.

A.17.24. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction.

A.18. Junction 36 – A12 / Main Road T-Junction, Saxmundham

a) Context

A.18.1. Junction 36a and Junction 36b are the two components which form a ghost island T-junction at the juncture of Main Road with the A12, located 1.5 miles north of the town of Saxmundham, approximately 6 miles west of the Sizewell C site. A short slip lane is provided for left turning vehicles from the A12 southbound. The simple priority junction this forms with the Main Road carriageway forms Junction 36b. The give way line between the Main Road carriageway and A12 forms Junction 36a. A satellite image of the existing junction layout, and the split between Junctions 36a and 36b is shown in **Plate 9.68**.

A.18.2. In the vicinity of the junction, the A12 and Main Road are both single carriageway roads. A right turn lane, with storage capacity of approximately 13 vehicles before blocking back occurs, is provided on the A12. On approach to the give way line on Main Road, the carriageway flares such that left and right turning vehicles can queues alongside each other from around 3 vehicle lengths back from the give way line.

A.18.3. A full assessment of Junction 35b has been conducted but is not presented in this report as the RFC results are low (the junction operates with at least 81% reserve capacity and negligible queuing in all scenarios).

A.18.4. The remainder of this **section A.18** focusses on Junction 35a.

Plate 9.68 – Existing A12 / Main Road T-Junction Layout



b) Calibration Summary

A.18.5. Observed queue data showed that there were small or negligible queues on the minor arm (B1121 south east approach) in all modelled hours. The calibrated junction model shows negligible queue lengths; the small queues were difficult to replicate without applying unrealistic adjustments to the model; therefore, the model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

A.18.6. The 2023 Reference Case traffic flows show small increases in entry demand on the A12 in both directions (+20-60 vehicles per hour) across all modelled hours relative to the observed base year traffic flows. The one exception is 06:00-07:00 when increases are much smaller (up to 10 vehicles per hour). Negligible increases in traffic flows are forecast on the B1121 South East minor arm.

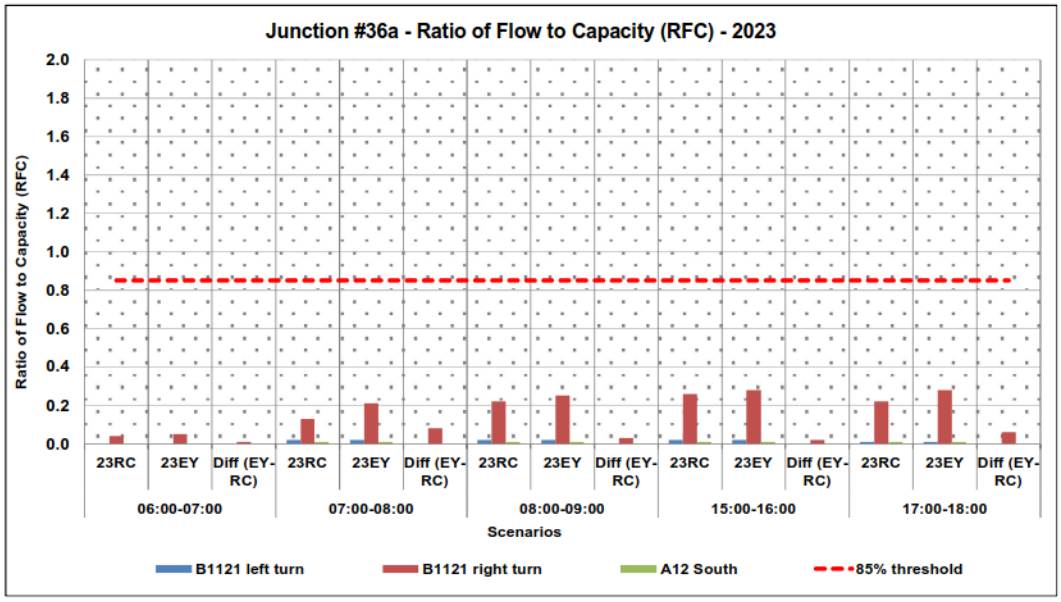
A.18.7. The Early Years scenario traffic flows are generally forecast to increase by up to 80 vehicles per hour on the A12 with the exception of 07:00-08:00 when the increase on the A12 South approach is much higher (up

to 170 vehicles per hour), relative to the 2023 Reference Case scenario. Negligible changes in traffic flows are forecast on the B1121 minor arm in all modelled hours.

ii. Results analysis

A.18.8. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.69**. The difference is shown as EY-RC.

Plate 9.69 – A12 / Main Road T-Junction 2023 Early Years RFC Results



A.18.9. **Plate 9.69** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2023 Reference Case scenario, with the highest RFC of 0.26 being reported from 15:00-16:00 on the Main Road right turn.

A.18.10. The Early Years scenario RFC results are very similar to the 2023 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Early Years scenario.

d) Peak Construction (2028)

i. Demand impact

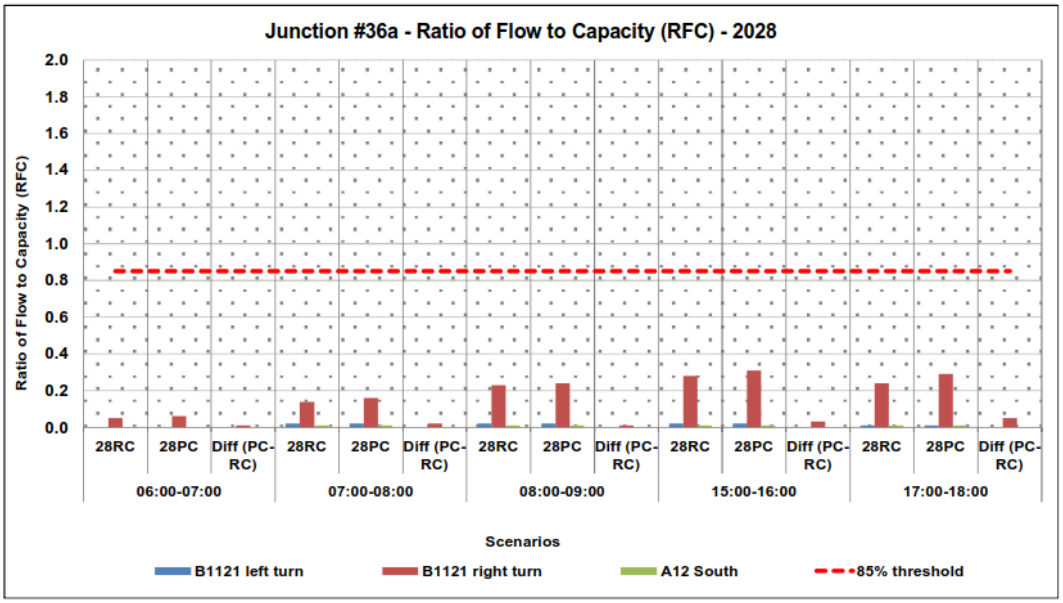
A.18.11. The 2028 Reference Case scenario traffic flows show moderate increases in entry demand on the A12 in both directions (+40-80 vehicles per hour) during all modelled hours, except 06:00-07:00 when increases are negligible (less than 20 vehicles per hour), relative to the observed base year traffic flows. Negligible increases in traffic flows are forecast on the B1121 South East minor arm in all modelled hours.

A.18.12. The Peak Construction scenario traffic flows are forecast to increase on the A12 (+20-80 vehicles per hour) relative to the 2028 Reference Case scenario. Negligible changes in traffic flows are forecast on the B1121 minor arm.

ii. Results analysis

A.18.13. The RFC modelling results for the 2028 Reference Case and Peak Construction scenarios, split by each modelled hourly period, are illustrated in **Plate 9.70**. The difference is shown as PC-RC.

Plate 9.70 – A12 / Main Road T-Junction 2028 Peak Construction RFC Results



A.18.14. **Plate 9.70** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2028 Reference Case scenario, with the highest RFC of 0.28 being reported from 15:00-16:00 on the Main Road right turn.

A.18.15. The Peak Construction scenario RFC results are very similar to the 2028 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Peak Construction scenario.

e) Operational Phase (2034)

i. Demand impact

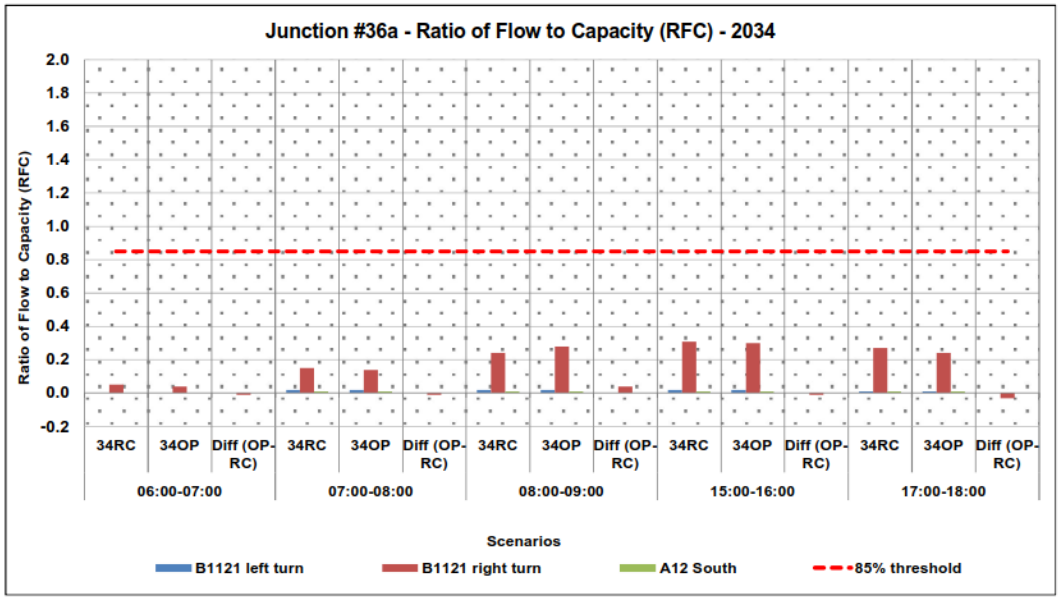
A.18.16. The 2034 Reference Case scenario traffic flows show large increases (+75-100 vehicles per hour) in entry demand on the A12 in both directions during all modelled hours, except 06:00-07:00 when increases are small (less than 30 vehicles per hour), relative to the observed base year traffic flows. Negligible increases in traffic flows are forecasted on the B1121 minor arm in all modelled hours.

A.18.17. The Operational Phase scenario traffic flows are forecast to change by a negligible amount on all arms and modelled hours, relative to the 2034 Reference Case scenario.

ii. Results analysis

A.18.18. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.71**. The difference is shown as OP-RC.

Plate 9.71 – A12 / Main Road T-Junction 2034 Operational Phase RFC Results



A.18.19. **Plate 9.71** shows that the junction is predicted to have ample spare capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC of 0.31 being reported from 15:00-16:00 on the Main Road right turn.

A.18.20. The Operational Phase scenario RFC results are very similar to the 2034 Reference Case, generally showing no change in RFC on all movements in all modelled hours. The junction is predicted to continue to operate with ample spare capacity with the Sizewell C traffic. It is therefore considered that the Sizewell C traffic has no material impact on the operation of this junction in the Operational Phase scenario.

f) Mitigation analysis

A.18.21. Since the A12 / Main Road T-junction operates well within capacity in all 2023, 2028 and 2034 scenarios, and the impact of Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

A.18.22. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.21**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.21: A12 / Main Road T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.04	0.04	0.05	0.05	0.06	0.05	0.04
07:00-08:00	0.12	0.13	0.21	0.14	0.16	0.15	0.14
08:00-09:00	0.20	0.22	0.25	0.23	0.24	0.24	0.28
15:00-16:00	0.22	0.26	0.28	0.28	0.31	0.31	0.30
17:00-18:00	0.19	0.22	0.28	0.24	0.29	0.27	0.24

A.18.23. The modelling results show that the junction operates with good reserve capacity for all scenarios, during all modelled periods. RFCs are greatest from 15:00-16:00, however at its greatest in the 2034 Reference Case scenario, still indicates a reserve capacity of 69%.

A.18.24. As no capacity problems are foreseen as a result of background traffic growth or the addition of Sizewell C related traffic, no mitigation is proposed or deemed necessary at the existing junction.

A.19. Junction 37 – A12 / B1387

a) Context

A.19.1. Junction 37 is a simple TT-junction, located on a 40mph stretch of the A12, just south of Blythburgh and located approximately 11-miles north of the Sizewell C site. The A12 runs north east to south west and is joined by the south eastern minor arm (B1387) on a straight section of the A12. The major arm right turning movement is not accommodated within a right-turn lane but a layby is situated opposite the junction on the A12 northbound which may enable some smaller vehicles on the A12 northbound to undertake any vehicles waiting to turn right onto the B1387. A satellite image of the existing junction layout is shown in **Plate 9.72**.

Plate 9.72 – Existing A12 / B1387 Road Layout



b) Calibration Summary

A.19.2. Observed queue data shows that there is slight queueing on the minor arm with a minimum recorded queue of zero vehicles and a mean max queue of 0.3-1.8 vehicles across all time periods.

A.19.3. The A12 northbound right turn queues show a minimum queue of zero and a mean max queue of 0.2-2.1 vehicles across all time periods. This queue is likely to lead to occasional blocking of the A12 northbound with

queues dissipating by the next 5-min monitoring period. In other words, queues at this location are intermittent.

A.19.4. The junction model typically results in queues slightly lower than the mean max observations but is consistent with the observed data as both show little to no queues on all arms. The model is considered to be representative of existing conditions.

c) Early Years (2023)

i. Demand impact

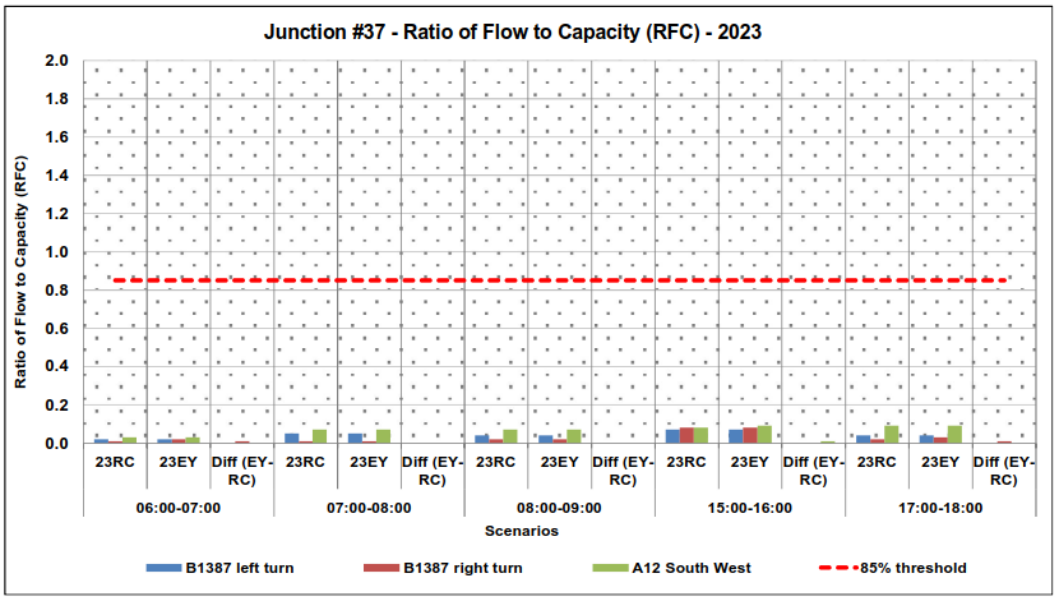
A.19.5. The 2023 Reference Case scenario traffic flows show small increases in traffic on the A12 (+10-50 vehicles per hour relative to the base scenario) across all time periods. Very little change is predicted on the minor arm (B1387) compared to the base scenario.

A.19.6. The Early Years scenario shows a small increase in traffic on the minor arm compared to the 2023 Reference Case scenario. The A12 southbound shows an increase in traffic in the morning period. Growth of 20-25 vehicles per hour is predicted from 06:00-07:00 and 08:00-09:00 and a larger increase from 07:00-08:00 (+100 vehicles per hour) compared to the 2023 Reference Case. On the A12 northbound little difference in flows is predicted, with the exception of 17:00-18:00 which has a predicted increase of 60 vehicles per hour. This corresponds with shift start/end times at SZC and the A12 construction sites.

ii. Results analysis

A.19.7. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.73**. The difference is shown as EY-RC.

Plate 9.73 – A12 / B1387 2023 Early Years RFC Results



A.19.8. **Plate 9.73** shows that the junction is predicted to operate within capacity during all modelled hours in the 2023 Reference Case scenario. The Reference Case RFC peaks from 17:00-18:00 with the A12 northbound reaching a maximum RFC of 0.09 and the minor arm (B1387) reaching a maximum RFC of 0.08 from 15:00-16:00.

A.19.9. The Early Years scenario RFC results are very similar to the 2023 Reference Case with the largest difference being +0.01 across a number of scenarios. The maximum RFC in the Early Years scenario is recorded as 0.09 on the A12 northbound.

A.19.10. The results for both 2023 scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Early Years scenario is modest.

d) Peak Construction (2028)

i. Demand impact

A.19.11. The 2028 Reference Case scenario traffic flows generally show negligible change in entry demand compared to the base flows on the minor arm (no more than +4 vehicles per hour). The A12 is predicted to experience an increase in flows of 20-70 vehicles per hour.

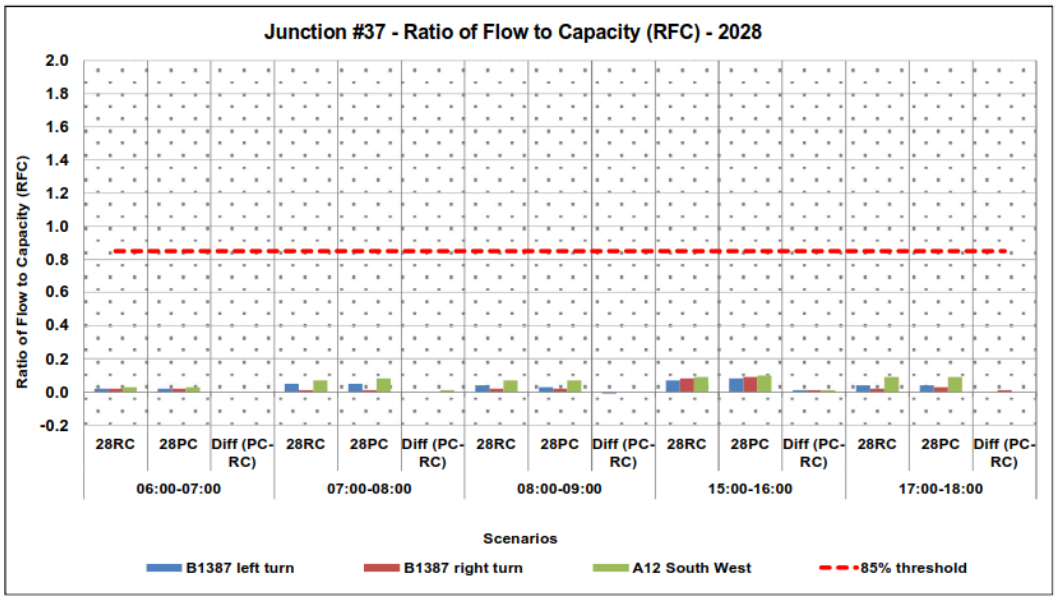
A.19.12. The Peak Construction scenario is predicted to add a negligible amount of traffic to the minor arm. The A12 southbound is predicted to experience a large increase in flows (+130-180 vehicles per hour) during the AM periods, particularly from 06:00-07:00 when Sizewell construction workers

are likely to be heading south to the Darsham Park and Ride site. The A12 northbound is predicted to experience a large increase in flows (+70-80 vehicles per hour) during the evening periods due to SZC construction workers leaving Darsham Park and Ride, particularly from 15:00-16:00 due to SZC construction worker shift patterns.

ii. Results analysis

A.19.13. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.74**. The difference is shown as PC-RC.

Plate 9.74 – A12 / B1387 2028 Peak Construction RFC Results



A.19.14. **Plate 9.74** shows that the junction is predicted to operate within capacity during all modelled hours in the 2028 Reference Case scenario. The RFC reaches its highest point (0.09) from 15:00-16:00 and 17:00-18:00 on the A12 northbound.

A.19.15. The Peak Construction scenario RFC results are similar to the 2028 Reference Case, with generally negligible increases in RFC (+0.01). The maximum RFC in the Peak Construction scenario is predicted to be 0.10 on the A12 northbound from 15:00-16:00.

A.19.16. The results for both scenarios show that the junction would be operating within capacity with or without Sizewell C traffic. Overall the impact of additional traffic demand from Sizewell C in the Peak Construction scenario is modest.

e) Operational Phase (2034)

i. Demand impact

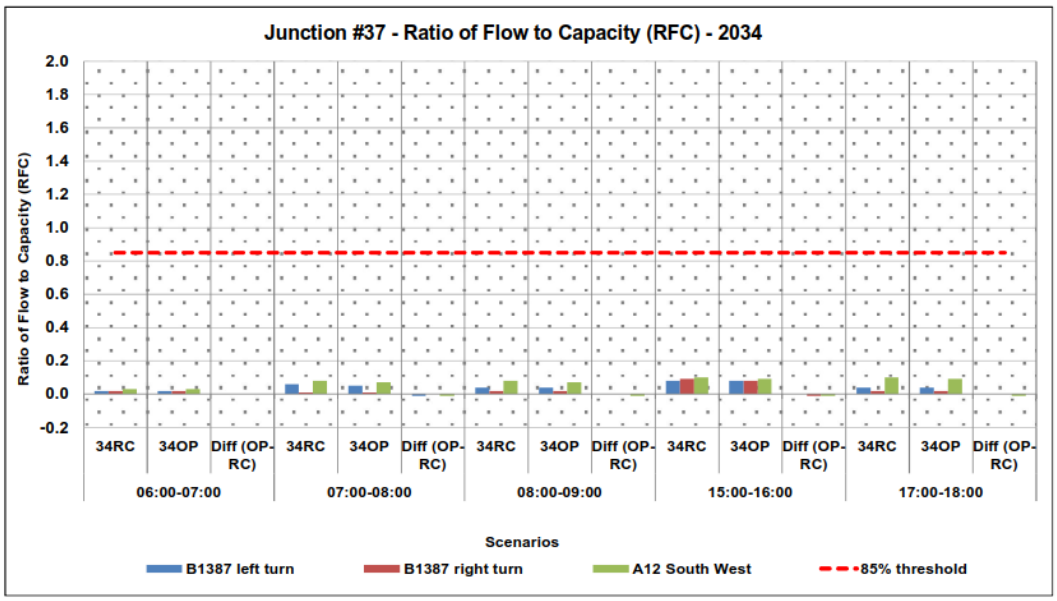
A.19.17. The 2034 Reference Case scenario traffic flows show a small increase in flow on the minor arm (up to +8 vehicles per hour), relative to observed base year traffic flows. On the A12, demand is predicted to increase by +20-100 vehicles per hour in each direction for each of the modelled periods.

A.19.18. The Operational Phase scenario traffic flows are very similar to the 2034 Reference Case, with negligible changes across all arms and modelled hourly periods.

ii. Results analysis

A.19.19. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.75**. The difference is shown as OP-RC.

Plate 9.75 – A12 / B1387 2034 Operational Phase RFC Results



A.19.20. **Plate 9.75** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario, with the highest RFC recorded as 0.10 on the A12 northbound from 15:00-16:00 and 17:00-18:00.

A.19.21. The Operational Phase scenario RFC results are similar to the 2034 Reference Case scenario, which is intuitive given the negligible change in entry demand between the two scenarios.

f) Mitigation analysis

A.19.22. As negligible short-term impact and no long-term impact is predicted at this junction, mitigation is not proposed.

g) Overview

A.19.23. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.22**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.22: A12 / B1387 Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.03	0.03	0.03	0.03	0.03	0.03	0.03
07:00-08:00	0.05	0.07	0.07	0.07	0.08	0.08	0.07
08:00-09:00	0.05	0.07	0.07	0.07	0.07	0.08	0.07
15:00-16:00	0.07	0.08	0.09	0.09	0.10	0.10	0.09
17:00-18:00	0.07	0.09	0.09	0.09	0.09	0.10	0.09

A.19.24. The modelling results show that the junction operates with good reserve capacity in all scenarios and time periods. Sizewell C is predicted to have negligible impact at this location. The maximum RFC is expected to be 0.10 in Peak Construction scenario which is comfortably within capacity. Increase in queues and delay is predicted to be negligible.

A.20. Junction 39 – A12 / Marlesford Road T-Junction

a) Context

A.20.1. Junction 39 is a simple priority T-junction between the A12 and Marlesford Road, south west of the village of Marlesford and approximately 10 miles south west of the Sizewell C site. The minor arm (Marlesford Road) is a very lightly trafficked, narrow, single carriageway road connecting the A12 to the B1116 1 mile to the north west. It operates at the national speed limit of 60mph until just before the give way line, where the limit changes to 40mph, consistent with the A12 in the vicinity of the junction. There is a right turning lane on the A12, with room for approximately 3 vehicles. A satellite image of the existing junction layout is shown in **Plate 9.76**.

Plate 9.76 – Existing A12 / Marlesford Road T-Junction Layout



b) Calibration Summary

A.20.2. The observed queue data shows negligible queuing on all arms in all modelled time periods. The model reflects the negligible queues, hence is considered to be representative of the observed traffic conditions.

c) Early Years (2023)

i. Demand impact

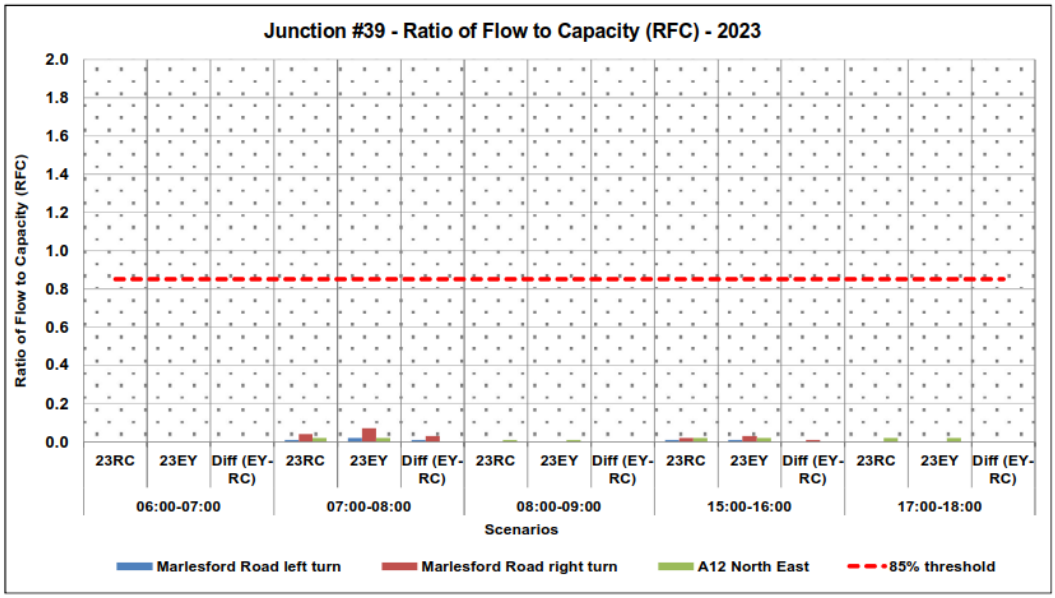
A.20.3. The 2023 Reference Case scenario traffic flows show a modest increase (+100-180 vehicles per hour) in traffic approaching the junction on the A12 West approach, relative to the observed base year traffic flows. Small increases are forecast in the morning on the A12 East approach (+50-90 vehicles per hour), while increases of 130 vehicles per hour are forecast from 15:00-16:00 and 200 vehicles per hour from 17:00-18:00. Negligible changes in traffic flows are forecast from the Marlesford Road minor arm.

A.20.4. Further increases, comparative to the 2023 Reference Case, are forecast on the A12 in the Early Years Scenario. These are generally modest (up to 90 vehicles per hour), however more significant increases of 120-220 vehicles per hour are forecast in the morning on the A12 West approach. No changes to traffic flows on the Marlesford Road minor arm are forecast in the Early Years scenario, relative to the 2023 Reference Case scenario.

ii. Results analysis

A.20.5. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.77.** The difference is shown as EY-RC.

Plate 9.77 – A12 / Marlesford Road T-Junction 2023 Early Years RFC Results



A.20.6. **Plate 9.77** shows that the junction is predicted to operate with ample spare capacity in the 2023 Reference Case in all modelled periods, with

the highest RFC of 0.04 recorded on the Marlesford Road minor arm from 07:00-08:00.

A.20.7. The Early Years scenario RFC results show negligible increases in RFC above the 2023 Reference Case model, indicating that the Sizewell C traffic will have a negligible impact on the operation of Junction 39.

d) Peak Construction (2028)

i. Demand impact

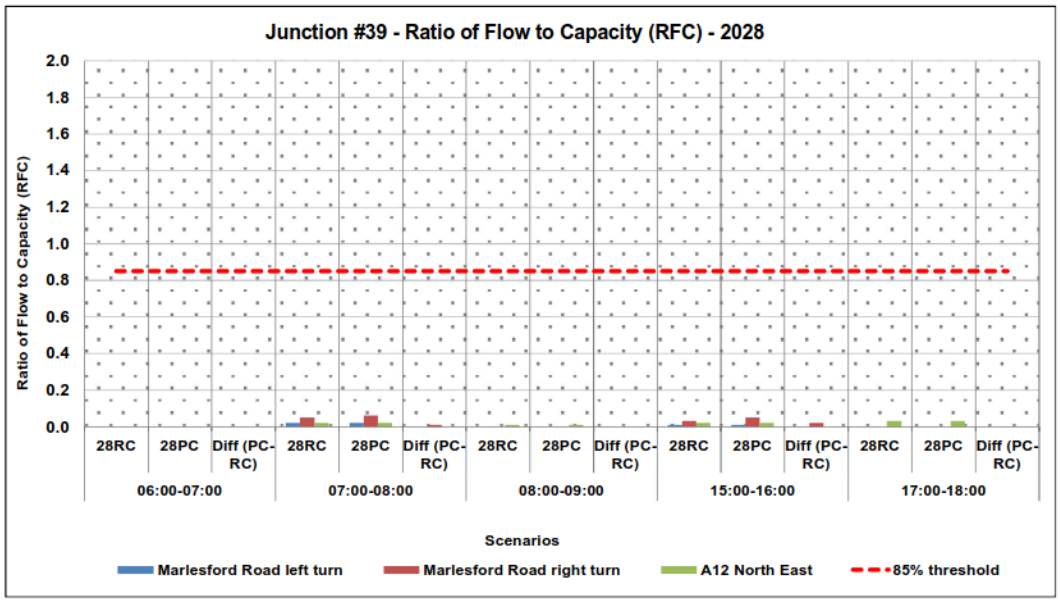
A.20.8. The 2028 Reference Case scenario traffic flows show large increases in traffic approaching the junction from the A12 West approach (+130-220 vehicles per hour), relative to the observed base year traffic flows. Similarly, on the A12 East approach, large increases are forecast (+60-250 vehicles per hour), particularly in the evening hours. Negligible changes in traffic flows are forecast from the Marlesford Road minor arm.

A.20.9. Further increases, comparative to the 2028 Reference Case, are forecast on the A12 in the Peak Construction scenario. These are generally small (up to 70 vehicles per hour), with the exception of 15:00-16:00 on the A12 East approach, when an increase of 140 vehicles per hour are forecast. No changes to traffic flows on the Marlesford Road minor arm are forecast in the Peak Construction scenario, relative to the 2028 Reference Case scenario.

ii. Results analysis

A.20.10. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.78**. The difference is shown as PC-RC.

Plate 9.78 – A12 / Marlesford Road T-Junction 2028 Peak Construction RFC Results



A.20.11. **Plate 9.78** shows that the junction is predicted to operate with ample spare capacity in the 2028 Reference Case in all modelled periods, with the highest RFC of 0.05 recorded on the Marlesford Road minor arm from 07:00-08:00.

A.20.12. The Peak Construction scenario RFC results show negligible increases in RFC above the 2028 Reference Case model, indicating that the Sizewell C traffic will have a negligible impact on the operation of Junction 39.

e) Operational Phase (2034)

i. Demand impact

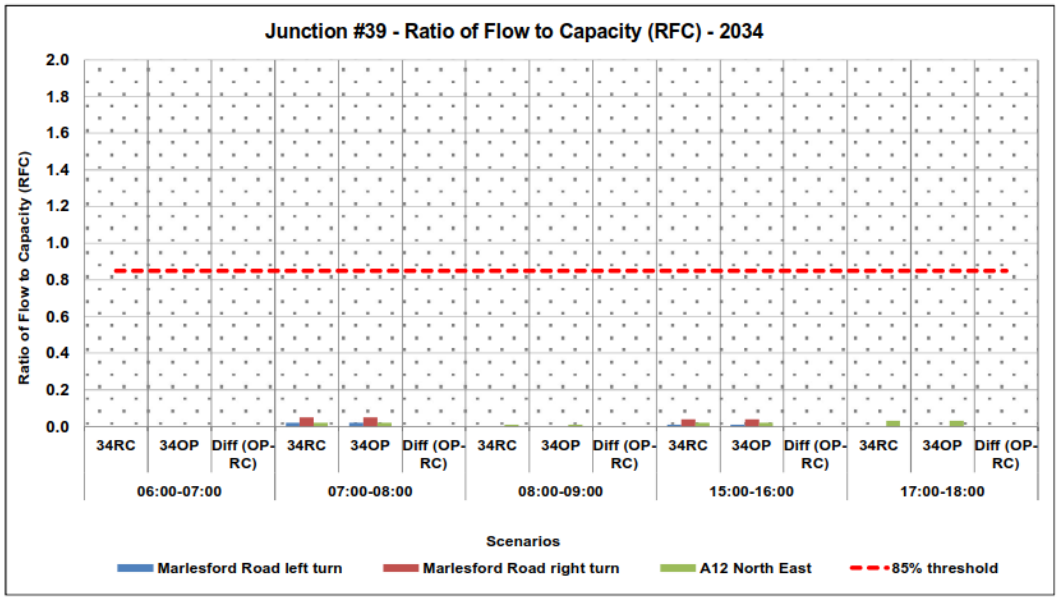
A.20.13. The 2034 Reference Case scenario traffic flows show large increases in traffic on the A12 approaches (+90-240 vehicles per hour) during all modelled hours, relative to the observed base year traffic flows. The evening hours are forecast to experience the largest increase. Negligible changes in traffic flows are forecast from the Marlesford Road minor arm.

A.20.14. Compared to the 2034 Reference Case, the Operational Phase scenario is forecast to have a negligible impact on traffic flows on all arms of the junction.

ii. Results analysis

A.20.15. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.79**. The difference is shown as OP-RC.

Plate 9.79 – A12 / Marlesford Road T-Junction 2034 Operational Phase RFC Results



A.20.16. **Plate 9.79** shows that the junction is predicted to operate with ample spare capacity in the 2034 Reference Case in all modelled periods, with the highest RFC of 0.05 recorded on the Marlesford Road minor arm from 07:00-08:00.

A.20.17. The Peak Construction scenario RFC results are identical to the 2028 Reference Case model. Therefore, the impact of Sizewell C traffic on the operation of Junction 39 will be negligible.

f) Mitigation analysis

A.20.18. Since the A12 / Marlesford Road T-Junction operates well within capacity in all 2023, 2028 and 2034 scenarios, and the impact of Sizewell C traffic is negligible, no mitigation is proposed at this junction.

g) Overview

9.1.2 An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.23**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.23: A12 / Marlesford Road T-Junction RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP

06:00-07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07:00-08:00	0.03	0.04	0.07	0.05	0.06	0.05	0.05
08:00-09:00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
15:00-16:00	0.02	0.02	0.03	0.03	0.05	0.04	0.04
17:00-18:00	0.00	0.02	0.02	0.03	0.03	0.03	0.03

A.20.19. The modelling results show that Junction 39 is predicted to operate with ample reserve capacity in all modelled hours in all 2023, 2028, and 2034 scenarios. The impact of Sizewell C traffic on junction operation is minimal, or negligible in most cases.

A.20.20. Since the junction is predicted to operate with ample reserve capacity in all future year scenarios, no mitigation is proposed at the junction.

A.21. Junction 42 – A12 / Sizewell Link Road Roundabout

a) Context

A.21.1. Junction 42 is a proposed new three-arm roundabout, located approximately 9-miles west of the Sizewell C site. It would be located on the A12 approximately 2km south of Yoxford. The southern and northern approaches would consist of the current A12 and the eastern approach would be a new road (Sizewell Link Road) leading to the Sizewell C site, broadly following the route of the B1122. All approach arms comprise of a single lane which flares at the give-way lines to two lanes.

A.21.2. The proposed roundabout would be provided by 2028 if Sizewell C is constructed and therefore the junction has only been assessed for the 2028 Peak Construction and 2034 Operational Phase scenarios. In 2023, the A12 mainline would continue to operate as an unopposed A-road and therefore has not been assessed. A drawing of the proposed roundabout layout is provided in **Sizewell Link Road Plans** (Doc Ref. 2.10).

b) Calibration Summary

A.21.3. Base model calibration is intended to give confidence that a model is able to replicate observed conditions and is therefore likely to reasonably predict future conditions. As the existing layout is planned to be replaced with a roundabout, validating a base model of the existing layout would not help to give confidence that the proposed roundabout model is realistic under future conditions. An existing layout model and a roundabout model would be fundamentally different so calibration to give confidence in the roundabout model is not possible.

A.21.4. The assessment of this junction therefore focuses on determining the likely operation of the three-arm roundabout and will not assess the current or forecast operation of the existing layout.

A.21.5. As the proposed roundabout has two lanes at each of the three entries and single lanes exits on all arms, there is potential for unequal lane usage to be present on the entry arms. Junctions 9 is not able to take account of unequal lane usage so where this is present a manual adjustment to the model is needed to prevent the modelled capacity being overestimated.

A.21.6. An assumption has been made regarding the likely allocation of lanes for each movement based on the magnitude of turning flows and number of available exit lanes. This has resulted in the proportions of vehicles per lane and determination of unequal lane usage set out in **Table 9.24**.

Table 9.24: A12 / Sizewell link road (proposed roundabout) – lane usage

2023 EARLY YEARS	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -A12 North	0%	100%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - Sizewell Link Road	Not open in 2023, due to open by 2028			None
C - A12 South	100%	0%	YES	Model 1-lane entry as lane 2 is used infrequently.

2028 PEAK CONSTRUCTION	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -A12 North	2%	98%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - Sizewell Link Road	93%	7%	YES	Model 1-lane entry as lane 2 is used infrequently.
C - A12 South	84%	16%	YES	Model 1-lane entry as lane 2 is used infrequently.

2034 OPERATIONAL PHASE	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -A12 North	2%	98%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - Sizewell Link Road	89%	11%	YES	Model 1-lane entry as lane 2 is used infrequently.
C - A12 South	90%	10%	YES	Model 1-lane entry as lane 2 is used infrequently.

A.21.7. On approaches where one of the two entry lanes is used infrequently, the approach has been modelled as a single lane (4m entry width and a 10m flare length) to reflect the fact approximately half of the road space will be unutilised. Where lane utilisation is split approximately one thirds to two thirds, the approach has been modelled as roughly one and a half lanes (75% of the measured entry width and 10m flare) to reflect the fact half of the road space will be only partially utilised. These adjustments have been made to avoid over-estimating capacities on approach arms where unequal lane usage is present. The results presented below incorporate these adjustments.

c) Peak Construction (2028)

i. Demand impact

A.21.8. The 2028 Reference Case scenario traffic flows show moderate increases in traffic flows (+20-80 vehicles per hour) in both directions on the A12 across all modelled hours, relative to observed base year traffic flows.

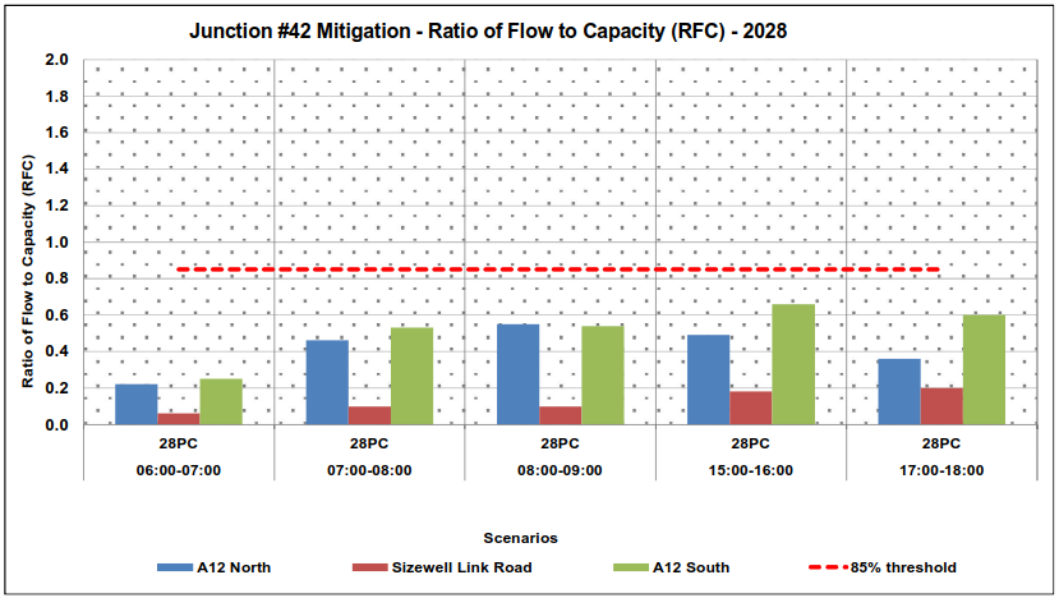
A.21.9. During the Peak Construction scenario, the A12 northern approach is predicted to experience a reduction in traffic flows relative to the 2028

Reference Case, particularly during the PM hours. The A12 southern approach is expected to experience an increase in flows (+30-80 vehicles per hour) relative to the 2028 Reference Case. In 2028 the Sizewell Link Road approach to the junction is expected to cater for 40-130 vehicles per hour with higher flows during the PM hours when construction workers are scheduled to leave the Sizewell C site.

ii. Results analysis

A.21.10. The RFC modelling results for the Peak Construction scenario, split by each modelled hourly period, are illustrated in **Plate 9.80**.

Plate 9.80 – A12 / Sizewell Link Road 2028 Peak Construction RFC Results



A.21.11. **Plate 9.80** shows that the junction is predicted to operate within capacity during all modelled hours and scenarios.

A.21.12. The Peak Construction scenario experiences a maximum RFC of 0.66 on the A12 South approach from 15:00-16:00. This arm is predicted to experience a maximum average delay of 9 seconds per vehicle from 15:00-16:00 indicating that the roundabout is expected to operate with minimal delay and with reserve capacity.

a) Operational Phase (2034)

iii. Demand impact

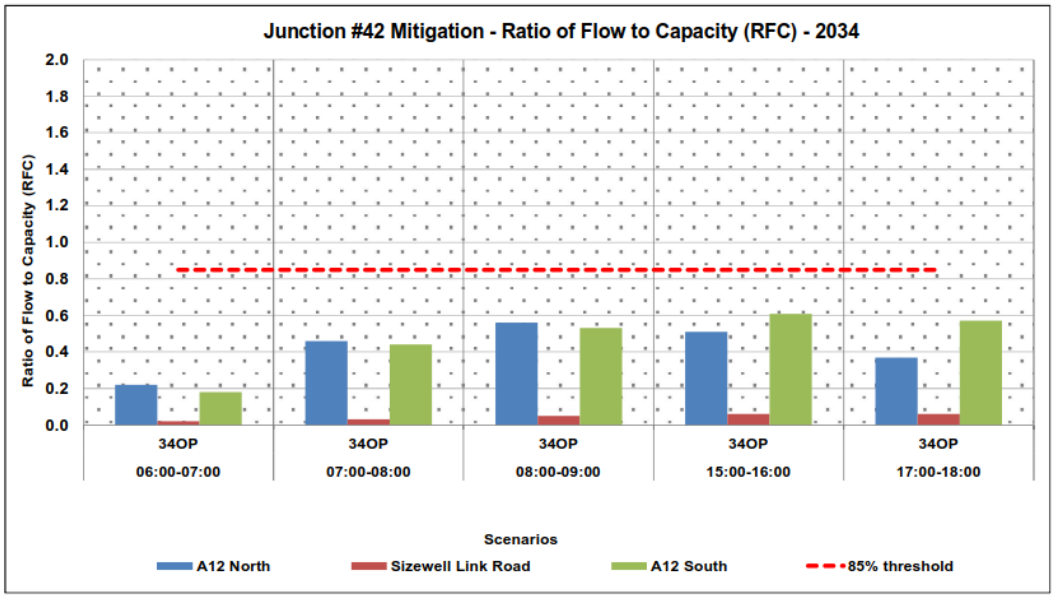
A.21.13. The 2034 Reference Case scenario traffic flows show moderate increases in traffic flows (+30-130 vehicles per hour) in both directions on the A12 across all modelled hours, relative to observed base year traffic flows.

A.21.14. During the Operational Phase scenario, the A12 northern approach is predicted to experience a reduction in traffic flows relative to the 2028 Reference Case, particularly during the PM hours. This is due to vehicles re-routing to use the Sizewell Link Road rather than the B1122. The A12 southern approach is expected to experience a small increase in flows (up to 50 vehicles per hour) relative to the 2034 Reference Case. In 2034 the Sizewell Link Road approach to the junction is expected to cater for 20-50 vehicles per hour with slightly higher flows during the PM hours when energy workers are scheduled to leave the Sizewell C site.

i. Results analysis

A.21.15. The RFC modelling results for the 2034 Operational Phase scenario, split by each modelled hourly period, are illustrated in **Plate 9.81**.

Plate 9.81 – A12 / Sizewell Link Road 2034 Operational Phase RFC Results



A.21.16. **Plate 9.81** shows that the junction is predicted to operate within capacity during all modelled hours and scenarios.

A.21.17. The Operational Phase scenario experiences a maximum RFC of 0.61 on the A12 South approach from 15:00-16:00. This arm is predicted to

experience a maximum average delay of 8 seconds per vehicle from 15:00-16:00 indicating that the roundabout is expected to operate with minimal delay and with reserve capacity.

d) Mitigation analysis

e) Overview

A.21.18. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.25**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.25: A12 / Sizewell Link Road RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00			0.21		0.25		0.22
07:00-08:00			0.62		0.53		0.46
08:00-09:00			0.56		0.55		0.56
15:00-16:00			0.60		0.66		0.61
17:00-18:00			0.58		0.60		0.57

A.21.19. The junction is predicted to operate with spare capacity during all modelled periods and average delays are not expected to exceed 9 seconds per vehicle. These results take into account the likelihood of unequal lane usage at this location. The proposed roundabout layout is therefore expected to be able to cater for the level of demand predicted in 2028 and 2034.

A.22. Junction 43 – B1122 / Sizewell C Site Access Roundabout

a) Context

A.22.1. Junction 43 is a proposed new five-arm roundabout, located on entry to the Sizewell C site. It is proposed to be located on the B1122 approximately 2km north of Leiston. The southern and northern approaches would consist of the current B1122, the north-eastern approach would accommodate Eastbridge Road and the eastern and south-eastern approaches would accommodate two separate accesses for Sizewell C – one for cars and buses and the other for HGVs respectively.

A.22.2. All approach arms are proposed to be single lanes which flare to two lanes at the give-way lines, with the exception of East Bridge Road where traffic flows are low and a single lane at the give-way line is proposed.

A.22.3. The proposed roundabout would be provided by 2023 if Sizewell C is constructed and therefore the junction has only been assessed for the 2023 Early Years, 2028 Peak Construction, and 2034 Operational Phase scenarios. A drawing of the proposed roundabout layout can be seen in **Main Development Site Plans** (Doc Ref. 2.5).

b) Calibration Summary

A.22.4. Base model calibration is intended to give confidence that a model is able to replicate observed conditions and is therefore likely to reasonably predict future conditions. As the existing T-junction layout is planned to be replaced with a roundabout, validating a base model of the existing layout would not help to give confidence that the proposed roundabout model is realistic under future conditions. An existing layout model and a roundabout model would be fundamentally different so validation to give confidence in the roundabout model is not possible.

A.22.5. The assessment of this junction therefore focuses on determining the likely operation of the five-arm roundabout and will not assess the current or forecast operation of the existing layout.

A.22.6. As the proposed roundabout has two lanes at four of the five entries and single lane exits on all arms, there is potential for unequal lane usage to be present on the entry arms. Junctions 9 is not able to take account of unequal lane usage so where this is present a manual adjustment to the model is needed to prevent the modelled capacity being overestimated.

A.22.7. An assumption has been made regarding the likely allocation of lanes for each movement based on the magnitude of turning flows and number of available exit lanes. This has resulted in the proportions of vehicles per lane and determination of unequal lane usage set out in **Table 9.26**.

Table 9.26: B1122 / Sizewell C Access (proposed roundabout) – lane usage

2023 EARLY YEARS	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -B1122 North	10%	90%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - East Bridge Road NE	100%	0%	YES	Model 1-lane entry as lane 2 is used infrequently.
C - SZC (Cars + Buses)	46%	54%	NO	None
D - SZC (HGV)	0%	0%	NO	None
E - B1122 South	74%	26%	YES	Model ~1.5 -lane entry width (75% CAD entry width) as lane 2 isn't used as much as lane 1.

2028 PEAK CONSTRUCTION	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -B1122 North	24%	76%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - East Bridge Road NE	100%	0%	YES	Model 1-lane entry as lane 2 is used infrequently.
C - SZC (Cars + Buses)	58%	42%	NO	None
D - SZC (HGV)	0%	100%	YES	Model 1-lane entry as lane 1 is used infrequently.
E - B1122 South	62%	38%	YES	Model ~1.5 -lane entry width (75% CAD entry width) as lane 2 isn't used as much as lane 1.

2034 OPERATIONAL PHASE	Average Lane Usage (%)		Unequal lane usage	Proposed manual adjustment
	Lane 1	Lane 2		
A -B1122 North	7%	93%	YES	Model 1-lane entry as lane 1 is used infrequently.
B - East Bridge Road NE	100%	0%	YES	Model 1-lane entry as lane 2 is used infrequently.
C - SZC (Cars + Buses)	60%	40%	NO	None
D - SZC (HGV)	0%	100%	YES	Model 1-lane entry as lane 1 is used infrequently.
E - B1122 South	71%	29%	YES	Model ~1.5 -lane entry width (75% CAD entry width) as lane 2 isn't used as much as lane 1.

A.22.8. On approaches where one of the two entry lanes is used infrequently, the approach has been modelled as a single lane (4m entry width and a 10m flare length) to reflect the fact approximately half of the road space will be unutilised. Where lane utilisation is split approximately one thirds to two thirds, the approach has been modelled as roughly one and a half lanes (75% of the measured entry width and 10m flare) to reflect the fact half of the road space will be only partially utilised. These adjustments have been made to avoid over-estimating capacities on approach arms where

unequal lane usage is present. The results presented below incorporate these adjustments.

b) Early Years (2023)

i. Demand impact

A.22.9. The 2023 Reference Case scenario traffic flows show small to moderate increases in traffic flows (+30-150 vehicles per hour) in both directions on the B1122 relative to the base year flows. East Bridge Road is predicted to experience a small increase in traffic flow.

A.22.10. During the Early Years scenario, the B1122 North approach is predicted to experience an increase in flows of +120 vehicles per hour from 06:00-07:00 and +250 vehicles per hour from 07:00-08:00 reflecting the Sizewell C construction workers arriving on site in 2023. Flows on B1122 North arm are also expected to increase in the other modelled periods by 20-60 vehicles per hour.

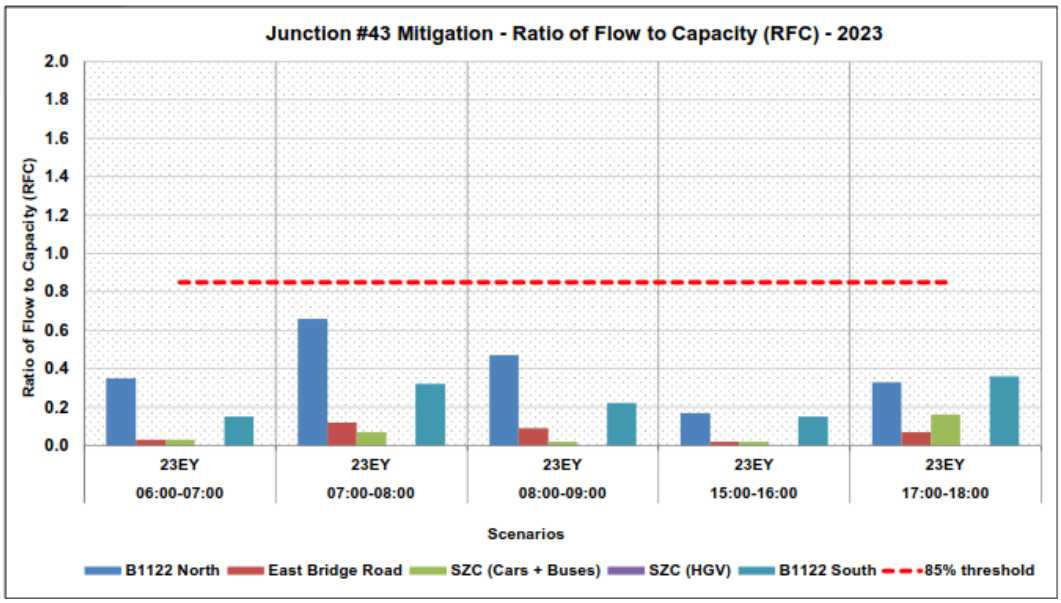
A.22.11. Flows on the B1122 South approach are predicted to increase by +30-150 vehicles per hour with the largest increases expected during the early morning hours as workers access the Sizewell C site from the south.

A.22.12. No growth is expected on East Bridge Road or the Sizewell C HGV approach. Growth of 20-90 vehicles per hour is expected on the Sizewell C car/bus approach during all modelled hours with the exception of 17:00-18:00 when growth of 220 vehicles per hour is expected reflecting the Sizewell C construction workers leaving the site in the evening.

ii. Results analysis

A.22.13. The RFC modelling results for the 2023 Early Years scenario, split by each modelled hourly period, are illustrated in **Plate 9.82**.

Plate 9.82 – B1122 / Sizewell C Site Access Early Years RFC Results



A.22.14. **Plate 9.82** shows that the junction is predicted to operate within capacity during all modelled hours and scenarios in 2023.

A.22.15. The Early Years scenario experiences a maximum RFC of 0.66 on the B1122 North approach from 07:00-08:00 due to construction workers accessing the site in the morning. This arm is predicted to experience a maximum average delay of 10 seconds per vehicle indicating that the roundabout is expected to operate with minimal delay and with reserve capacity.

c) Peak Construction (2028)

i. Demand impact

A.22.16. The 2028 Reference Case scenario traffic flows show moderate increases in traffic flows (+40-160 vehicles per hour) in both directions on the B1122 relative to the base year flows. East Bridge Road is predicted to experience a small increase in flows.

A.22.17. During the Peak Construction scenario, the B1122 North approach is predicted to experience an increase in flows of +150 vehicles per hour from 06:00-07:00, +160 vehicles per hour from 07:00-08:00 and +100 vehicles per hour from 08:00-09:00 reflecting the Sizewell C construction workers arriving on site in 2028. Flows on B1122 North arm are also expected to increase in the other modelled periods by 70-80 vehicles per hour. No growth is expected on East Bridge Road.

A.22.18. The Sizewell C HGV approach is expected to experience 2-26 HGVs per hour, with the larger proportions in the evening hours.

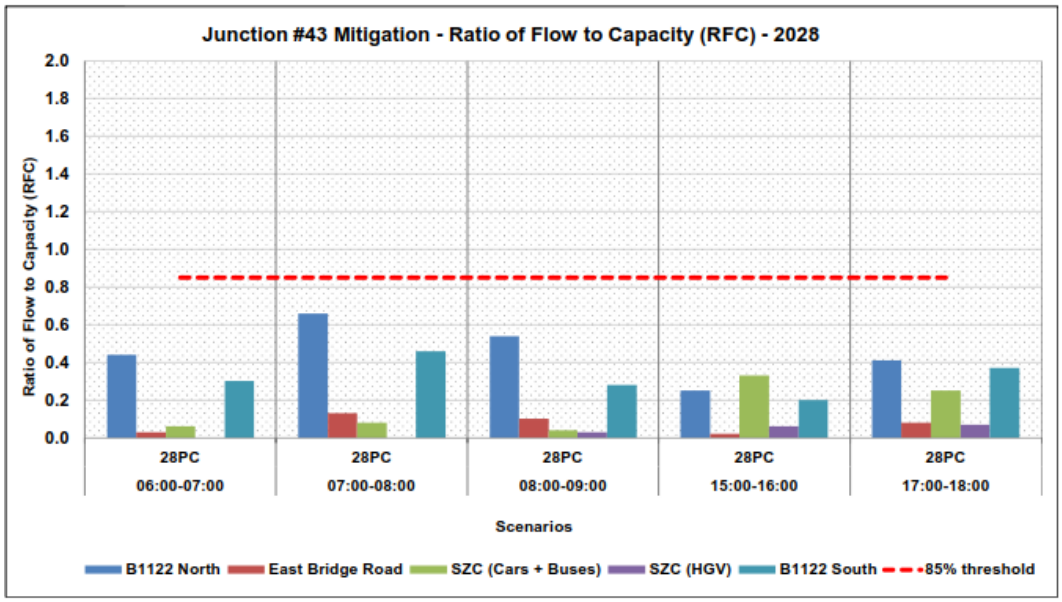
A.22.19. Flows on the B1122 South approach are predicted to increase by +120-330 vehicles per hour with the largest increases expected during the early morning hours as workers access the Sizewell C site from the south.

A.22.20. Growth of 40-80 vehicles per hour is expected on the Sizewell C car/bus approach during all modelled hours with the exception of 15:00-16:00 and 17:00-18:00 when an additional +480 and +310 vehicles per hour is expected respectively. This reflects the Sizewell C construction workers leaving the site by car and bus in the evening.

ii. Results analysis

A.22.21. The RFC modelling results for the 2028 Peak Construction scenario, split by each modelled hourly period, are illustrated in **Plate 9.83**.

Plate 9.83 – B1122 / Sizewell C Site Access Peak Construction RFC Results



A.22.22. **Plate 9.83** shows that the junction is predicted to operate within capacity during all modelled hours and scenarios in 2028.

A.22.23. The Peak Construction scenario experiences a maximum RFC of 0.66 on the B1122 North approach from 07:00-08:00 due to construction workers accessing the site in the morning. This approach is predicted to experience a maximum average delay of 12 seconds per vehicle indicating that the roundabout is expected to operate with minimal delay and with reserve capacity.

c) Operational Phase (2034)

iii. Demand impact

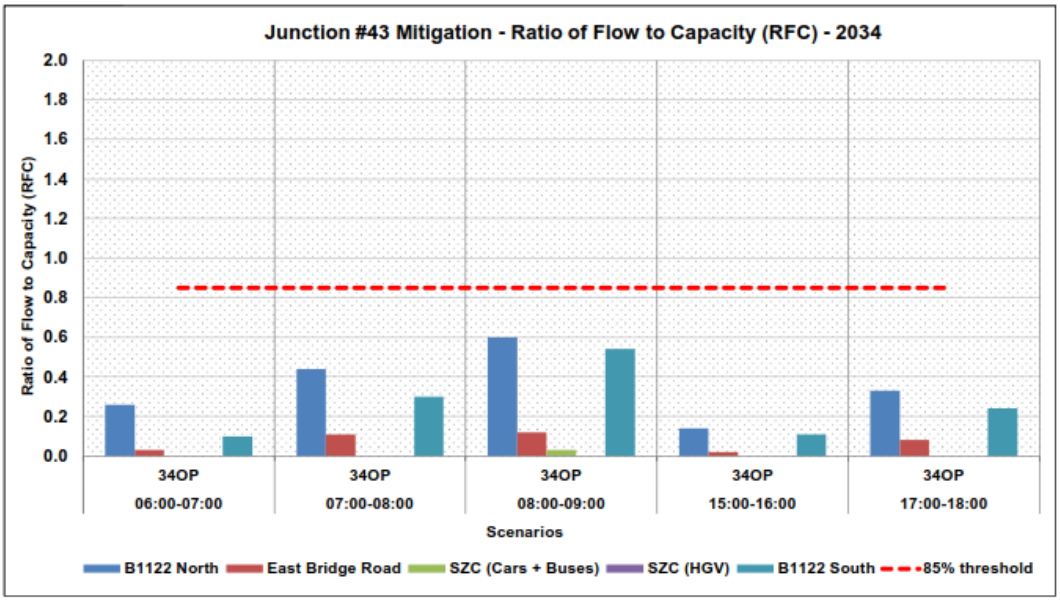
A.22.24. The 2034 Reference Case scenario traffic flows show moderate increases in traffic flows (+40-170 vehicles per hour) in both directions on the B1122 across all modelled hours, relative to observed base year traffic flows.

A.22.25. During the Operational Phase scenario the B1122 North approach is expected to see an increase of 10-30 vehicles per hour across all modelled periods with the exception of 08:00-09:00 when an increase of 180 vehicles per hour is expected. The B1122 South approach is expected to see an increase of 10-30 vehicles per hour across all modelled periods with the exception of 07:00-08:00 and 08:00-09:00 when an increase of +140 and +430 vehicles per hour is predicted, respectively.

i. Results analysis

A.22.26. The RFC modelling results for the 2034 Operational Phase scenario, split by each modelled hourly period, are illustrated in **Plate 9.84**.

Plate 9.84 – B1122 / Sizewell C Access Operational Phase RFC Results



A.22.27. **Plate 9.84** shows that the junction is predicted to operate within capacity during all modelled hours and scenarios in 2034.

A.22.28. The Operational Phase scenario experiences a maximum RFC of 0.60 on the B1122 North approach from 08:00-09:00. This arm is predicted to experience a maximum average delay of 9 seconds per vehicle from 08:00-09:00 indicating that the roundabout is expected to operate with minimal delay and with reserve capacity.

d) Mitigation analysis

A.22.29. The proposed Sizewell C access roundabout is expected to cater for demand in all modelled scenarios.

e) Overview

A.22.30. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.27**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.27: B1122 / Sizewell C Site Access RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00			0.35		0.44		0.26
07:00-08:00			0.66		0.66		0.44
08:00-09:00			0.47		0.54		0.60
15:00-16:00			0.17		0.33		0.14
17:00-18:00			0.36		0.41		0.33

A.22.31. The junction is predicted to operate with spare capacity during all modelled periods and average delays are not expected to exceed 12 seconds per vehicle. These results take into account the likelihood of unequal lane usage at this location. The proposed roundabout layout is therefore expected to be able to cater for the level of demand predicted in 2023, 2028 and 2034.

A.23. Junction 44 – B1122 / Lover's Lane T-Junction

a) Context

A.23.1. Junction 44 is a three-arm T-Junction, located approximately 3 miles west of the Sizewell C site. The junction is formed by the B1122 where this meets Lover's Lane which itself provides access to the Sizewell power station. All approach arms comprise of a single lane with the national speed limit of 60mph enforced on the B1122 north and Lover's Lane arms and 30mph on the southern approach to the junction. Street lighting is in place on all approaches.

b) Calibration Summary

A.23.2. As the existing junction is to be replaced as part of the Sizewell mitigation strategy, a base model representing the current layout has not been produced.

A.23.3. All results in the following sections are based on the proposed mitigation layout which retains a T-Junction, however the junction is moved approximately 80 metres to the south with Lover's Lane realigned (see **Main Development Site Plans** (Doc Ref. 2.5)), resulting in changes to junction geometry.

c) Early Years (2023)

i. Demand impact

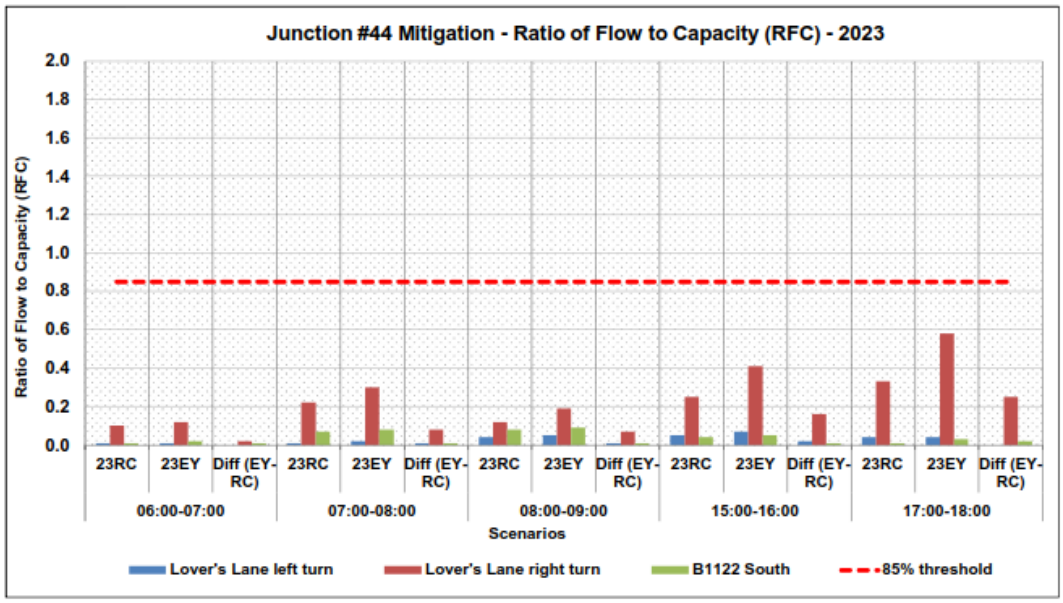
A.23.4. The 2023 Reference Case scenario traffic flows shows a moderate increase relative to observed base year traffic flows. The highest modelled increases in flow were recorded on the B1122 north Arm in the 06:00-07:00 modelled hour (+150 vehicles per hour) and Lovers Lane in the 17:00-18:00 modelled hour (+100 vehicles per hour). The maximum flow increase on the B1122 south was recorded in the 17:00-18:00 modelled hour (+40 vehicles per hour).

A.23.5. With Early Years traffic flows applied, further increases in comparison to the 2023 Reference Case scenario are seen. Increased demand is seen across all modelled hours with the 07:00-08:00 modelled hour displaying increases on the B1122 north (+120 vehicles per hour) and B1122 south (+130 vehicles per hour). Flows in the late morning and early afternoon show only moderate increases in comparison to the 2023 Reference Case with the next highest increase seen on the B1122 north Arm (+120 vehicles per hour) from 17:00-18:00.

ii. Results analysis

A.23.6. The RFC modelling results for the 2023 Reference Case (RC) and Early Years (EY) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.85**. The difference is shown as EY-RC.

Plate 9.85 – B1122 / Lovers Lane 2023 Early Years RFC Results



A.23.7. **Plate 9.85** shows that the junction is predicted to operate well within capacity during all modelled hours in the 2023 Reference Case scenario.

A.23.8. The Early Years scenario RFC results are very similar to the 2023 Reference Case for the majority of the modelled hours with the junction remaining below capacity for all modelled hours. An increase in RFC value is seen on the right turn movement from Lovers Lane in 17:00-18:00 modelled hour as a consequence of increased flow on the approach during this time period.

A.23.9. The B1122 South remains free flowing during all modelled hours for both 2023 Reference Case and Early Years scenarios with the highest recorded RFC value recorded as 0.08 in the Early Years scenario from 08:00-09:00.

d) Peak Construction (2028)

i. Demand impact

A.23.10. The 2028 Reference Case scenario traffic flows shows a moderate increase relative to observed base year traffic flows. The highest modelled increases in flow were recorded on the B1122 North arm from 06:00-

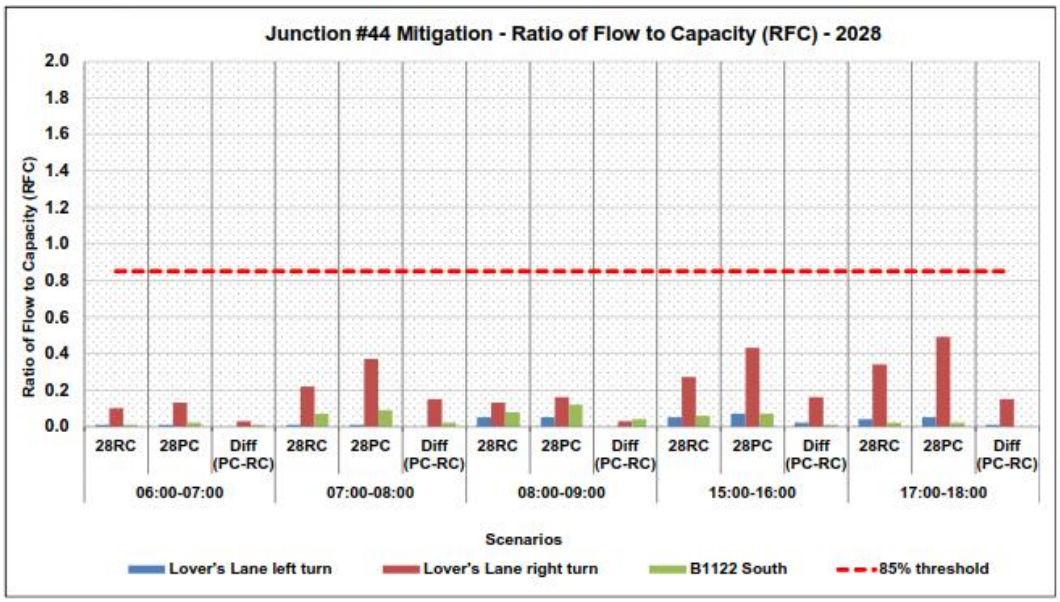
07:00 (+160 vehicles per hour) and Lovers Lane from 17:00-18:00 (+110 vehicles per hour). The maximum flow difference on the B1122 south was recorded from 17:00-18:00 (+50 vehicles per hour).

A.23.11. When directly comparing the Peak Construction scenario with the 2028 Reference Case, large increases in flow are seen with increases in excess of 200 additional vehicles from 06:00-07:00, 07:00-08:00, 15:00-16:00 and 17:00-18:00. The largest increases in comparison to the 2028 Reference Case are seen on the B1122 south approach (+270 vehicles per hour) from 07:00-08:00 and B1122 north approach (+240 vehicles per hour) from 17:00-18:00. Another notable increase is seen from 15:00-16:00 on Lover's Lane (+180 vehicles per hour).

ii. Results Analysis

A.23.12. The RFC modelling results for the 2028 Reference Case (RC) and Peak Construction (PC) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.86**. The difference is shown as PC-RC.

Plate 9.86 – B1122 / Lovers Lane Peak Construction RFC Results



A.23.13. **Plate 9.86** shows that due to the recorded increases in traffic flow at the B1122 / Lover's Lane junction in the Peak Construction scenario, RFC values see an associated increase. The Lover's Lane right turn movement in particular sees a modest increase in its modelled RFC value in comparison to the 2028 Reference Case scenario from 15:00-16:00 and 17:00-18:00.

A.23.14. The Peak Construction scenario RFC results on the two remaining movements, Lover's Lane southbound and the B1122 south, indicate that these will continue to operate well below capacity as they also do in the 2028 Reference Case scenario.

e) Operational Phase (2034)

i. Demand impact

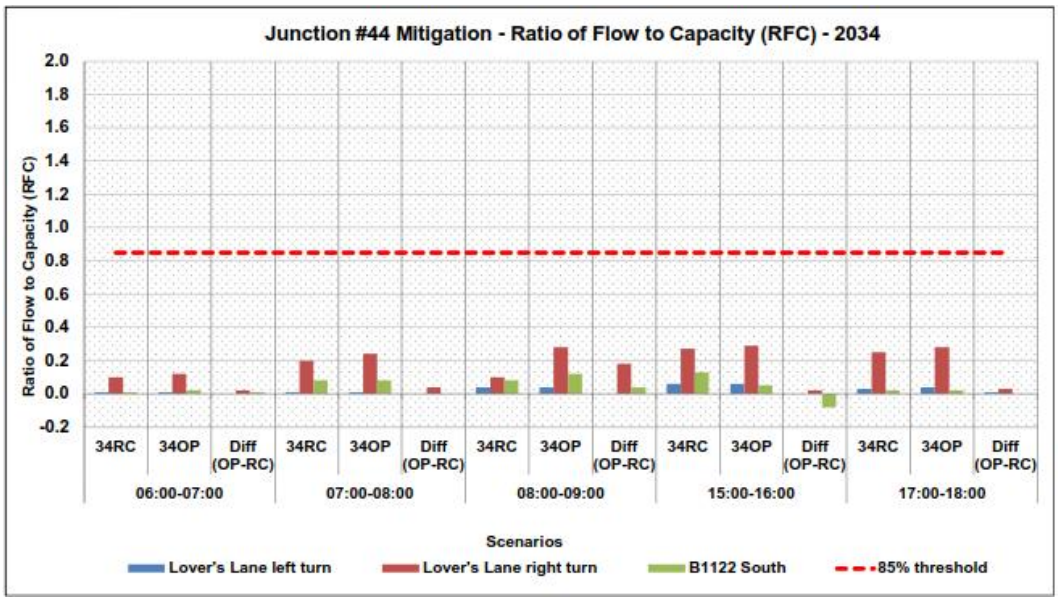
A.23.15. The 2034 Reference Case scenario traffic flows show a reasonable increase relative to observed base year traffic flows. The highest modelled increases in flow were recorded on the B1122 north Arm from 06:00-07:00 (+170 vehicles per hour) and Lover's Lane from 17:00-18:00 (+70 vehicles per hour). The maximum traffic flow difference on the B1122 south was recorded from 17:00-18:00 (+70 vehicles per hour).

A.23.16. As in the Peak Construction scenario, the Operational Phase scenario shows smaller increases in flow in comparison to the 2034 Reference Case. For most modelled hours increases are slight however a large increase in traffic is recorded on the B1122 south Arm (+370 vehicles per hour) from 08:00-09:00.

ii. Results analysis

A.23.17. The RFC modelling results for the 2034 Reference Case (RC) and Operational Phase (OP) scenarios, split by each modelled hourly period, are illustrated in **Plate 9.87**. The difference is shown as OP-RC.

Plate 9.87 – B1122 / Lovers Lane 2034 Operational Phase RFC Results



A.23.18. **Plate 9.87** shows that the junction is predicted to operate within capacity during all modelled hours in the 2034 Reference Case scenario.

A.23.19. Despite recorded increases in traffic flow in the Operational Phase scenario, particularly from 08:00-09:00, RFC results remain similar to those for the 2034 Reference Case scenario. Across all modelled hours the Operational Phase scenario continues to operate well below the 0.85 capacity threshold.

f) Mitigation Analysis

A.23.20. The results presented for Junction 44 (B1122 / Lover's Lane) represent the proposed junction layout with mitigation measures in place. The junction is retained as a T-Junction however is moved by approximately 80 metres to the south with Lover's Lane realigned to provide space for a proposed railway line leading to the Sizewell C site.

A.23.21. With the proposed measures in place a Pegasus and Cycle Crossing would be provided to the south of the new junction with a level crossing implemented for the new railway line to the north. It is not expected that the potential delay caused by either the Pegasus crossing or level crossing would have a significant impact on the junction operation. Pedestrian activity is likely to be low in the area and rail demand at the level crossing is limited to 6 trains per day outside of the highway network peak period.

g) Overview

A.23.22. An overview of the maximum RFC results recorded in each scenario, for each time period, are shown in **Table 9.28**. RFC results <0.85 (operating with reserve capacity) are coloured green; 0.85-1.00 (operating at or very near capacity) are coloured orange; and >1.00 (operating over capacity) are coloured red.

Table 9.28: B1078 / B1116 Roundabout RFC Results Overview

Time period	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00		0.10	0.12	0.10	0.13	0.10	0.12
07:00-08:00		0.22	0.30	0.22	0.37	0.20	0.24
08:00-09:00		0.12	0.19	0.13	0.16	0.10	0.28
15:00-16:00		0.25	0.41	0.27	0.43	0.27	0.29
17:00-18:00		0.33	0.58	0.34	0.49	0.25	0.28

A.23.23. As no base year modelling has been undertaken for the existing T-junction, the results in this column are blank.

A.23.24. The modelling results show that the junction operates below capacity in all the modelled scenarios.

A.23.25. Analysis of the reported queues and delays in these scenarios shows that the junction would still operate without significant queuing or delays. The longest modelled delay is seen in the 2028 Peak Construction scenario at approximately 35 seconds per vehicle from 15:00-16:00. This is due to an increase in traffic flows in the Peak Construction scenario in comparison to the 2028 Reference Case.

A.23.26. The impact of Sizewell C traffic on overall junction performance is minimal in the 2023 Early Years and 2034 Operational Phase scenarios. The 2028 Peak Construction scenario shows a larger impact on the junction with RFC values increasing to 0.75 from both 15:00-16:00 and 17:00-18:00 which is below the 0.85 capacity threshold.